

Evaluation and Recommended Improvements of the Current Nursery Crop Insurance Program and Recommendations for Alternative Designs for Providing Insurance for Nursery Crops

Deliverable 2a: Final Nursery Program Evaluation Summary Report
Deliverable 2b: Final Nursery Program Recommended Improvements Report

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SECTION I. EXECUTIVE SUMMARY

This report is an evaluation of the Nursery Crop Insurance Program (Nursery Program). The evaluation was produced under contract for the United States Department of Agriculture's (USDA) Risk Management Agency (RMA). This section meets the requirements for the first section of an evaluation report as described in the RMA Program Evaluation Handbook (FCIC-22010 (09-2005)).

Nursery crop insurance has been available since 1989, albeit in several different incarnations. Nursery crop insurance under the current Nursery Crop Provisions (08-073) is available in every state to anyone operating a nursery that produces field-grown or container-grown plants that are listed on published, regional listings of eligible plants, provided the nursery receives at least 50 percent of its gross income from the wholesale marketing of nursery plants.¹ Participation in the Nursery Program measured by policies earning premium and insured liability have declined each year since 2008. There are no data that suggest a similar contraction of operations in the industry. Furthermore, about 75 percent of the liability insured is covered under the Catastrophic Risk Protection (CAT) Endorsement.

The Contractor gathered information for the evaluation of the Nursery Program from a wide variety of relevant sources. These included published RMA documents, unpublished RMA data and documents, publications regarding the economic and agricultural characteristics of the nursery industry, and input from almost 200 stakeholders. Although it is impossible to calculate the precise economic size of the nursery industry eligible for insurance under the Nursery Program, it appears the insured liability in 2009 might represent as little as 25 percent of the wholesale value of sales from the industry segments that year. Since in many nurseries the insurable inventory includes production for more than one year of sales, the proportion of production value insured is even lower.

The Contractor gathered stakeholder input during discussions with producers, governmental officials, insurance industry representatives, and other interested parties in ten listening sessions and engaged stakeholders in follow-up discussions. One hundred-forty-five stakeholders attended the listening sessions. These included 71 producers, 7 producer organization representatives, 46 insurance industry representatives, and 9 nursery industry extension agents. The remaining attendees were in attendance on behalf of the federal and state governments. The listening sessions discussions were driven by an agenda addressing the requirements of a crop insurance program evaluation. In spite of regional differences in the plants produced and management practices, stakeholder input consistently addressed three basic themes. First, the current program is perceived as excessively complex, and because of this complexity the program is difficult for stakeholders to understand. Second, the calendar of the insurance program does not seem to align with the nursery crop industry calendar in any region. The Sales Closing Date (SCD) was identified as coming at a difficult time for the industry in almost every region. Since the sign-up process involves so much more paperwork than typical crop insurance sign-up, the misalignment of the insurance year and the business calendar were identified as a particular problem. Finally, the DataScape software was identified as a major issue. The large amount of time required to maintain and enter an inventory in the format required by the

¹ As with any insurance, there are eligibility requirements and restrictions that apply.

DataScope software was especially noted. Stakeholders suggested, at a minimum, DataScope should be configured to communicate with other inventory software programs. Several stakeholders suggested doing away with DataScope entirely. From the perspective of some nursery industry stakeholders, the current approach to the insurance does not seem reasonable.

The nursery segment of the U.S. agricultural industry is itself extraordinarily complex and diverse. Many nursery operations are vertically integrated. Nursery operations are performed to support wholesale and retail sales. In addition to production agriculture, nursery operations may provide processing, marketing, landscaping, and transportation services. Plants sold by producers in the nursery segment range in size from plants less than half an inch tall to fully-grown trees.

Nursery crop production generally requires substantial inputs, particularly in the form of labor. Some elements of production are mechanized, but the range of mechanization varies enormously from operation to operation. The most marked change in the industry in the last ten years was the computerization of nursery production functions. Over a somewhat longer period there has been a tendency to move from long-term sales relationships focused on historical production patterns to “just-in-time” ordering and delivery. A consequence of this shift is producers may be producing new species and varieties more often than was the case 10 to 20 years ago. Except for field-grown operations, no producer indicated a commitment to the species that have been produced historically. Decisions about “planting” are driven by the markets. Yet, the Contractor did not identify specific structural changes in the industry that would impact the Nursery Program. Propagation of grafted plants continues to play an important role in the nursery industry in some regions. Consequently, the Contractor believes RMA should explore the possibility of insuring grafted production (but not failure of the graft itself) as a third practice.

The Contractor completed all questions applicable to the crop, region, and plan of insurance based on the information obtained from listening sessions and the Contractor’s research and evaluation activities. A review of the completed program evaluation tool shows that the most notable element of the Nursery Program is complexity. The crop is complex. The producer population is widely scattered and characterized by an extreme range of financial resources and sophistication. The risks to the crops are limited, but occasional major losses have a substantial effect on the potential survival of individual operations. The marketing structure is complex; no single economic benchmark is tied to the industry’s performance (although housing starts affect portions of the industry). The complexity of the nursery industry is reflected in the structure and operation of the Nursery Program. Everyone who expressed an opinion, with the exception of one agent, would like to see the policy simplified.

There are a number of contradictions and omissions within and among the insurance documents. Policy terms are included in documents that are not part of the contract as defined by the Basic Provisions. The Crop Provisions thus do not adequately establish the obligations of the insured and the insured does not have access to the information that establishes those obligations. For example, the LASH establishes an obligation that the basic unit value as documented on the Plant Inventory Value Report (PIVR) will equal the actual value of the inventory on the date the PIVR is filed; the Crop Provisions establish this obligation only for CAT coverage. The Crop Provisions state the insured may file not more than two revised PIVR; the LASH states that

certain revisions are not considered to be included in the two allowable revisions. If the Nursery Program is continued using the existing constructs, a substantial revision of the Crop Provisions should be undertaken to provide greater clarity so the obligations of the insured are better defined. The Contractor believes all the dates in the Nursery Program are reasonable in relation to the nature of the crop and the risk period. However, it is important to note that producers in every region indicated the SCD and the insurance period did not reflect the business cycle of nurseries. There is no simple solution to address this producer concern inasmuch as producers in different regions (and, for that matter, producers growing different species) have different ideas about what a correct insurance period should be. Perhaps continuous enrollment or SCDs that differ by region provide appropriate approaches. Alternatively, the concept of a fixed period of time applicable to all policies might be replaced by allowing renewals on the anniversary of the first application. In addition to concerns about the allocation of such policies to a reinsurance year, there are underwriting implications to this approach, such as knowledge a hurricane has formed and has the potential to affect the insured operation on the anniversary date.

Nursery constitutes a small part of the total crop insurance program for all insurance parameters but one: its share of the total liability. Between 1999 and 2010, nursery averaged 6 percent of the total program liability, but only 0.3 percent of policies earning premium, 0.2 percent of units earning premium, and 1.2 percent of premiums earned. Nursery's share of total premium was much lower than its share of total liability because the average earned premium rate was so much lower – only about one-fifth of the average earned premium rate for all other crops. This was due to two factors: a very high percentage of business at the CAT level and a much lower overall premium rate structure. This pattern is similar for both container and field grown practices. The container practice was the most frequently insured practice, with nearly 36,000 policy-years of experience. The loss ratio was less than 1.00 for the entire program, but the loss ratio for the field grown practice was over 1.00. Nonetheless, nursery also had a very small share of the indemnities paid by the crop insurance program in total. Less than 0.1 percent of policies and units earning premium were indemnified. Nursery indemnities constituted 1.6 percent of all indemnities paid by the program from 1999 through 2010. Hurricane, freeze, and excess moisture accounted for 86 percent of the policies indemnified and 89 percent of the indemnity value. Flood accounted for only about three percent of policies indemnified but the amount of indemnities associated with flood was nearly equal to the indemnities paid for excess moisture. A Peak Inventory Endorsement, a Nursery Grower's Price Option, and a Rehabilitation Endorsement are offered under the Nursery Program. The volume of business under these optional plans is small, in part because of restrictions on their purchase.

The Contractor conducted a comprehensive premium rate review for the Nursery Program pursuant to the requirements of the Program Evaluation Handbook. The review compared the current premium rate structure to the historical loss experience. The container and field grown practices are considered separately. Analysis of the historical experience of the Nursery Program and analysis of what the historical experience may have been at 2012 premium rate levels for additional coverage levels leads to the conclusion that substantial increases in premium rate levels are warranted for a few state and practice combinations, particularly some of the states with the largest participation numbers, and modest decreases should be made in premium rate levels for the remaining states. However, it may be that events which have an actual frequency lower than the observed frequency have been included in the history used for the analysis and

therefore increases in premium rates may be overstated. Nonetheless, a process which includes modest increases in premiums over a period of many years and that can be adjusted as additional performance information is gained will limit the effects on producers. It is also worth noting that these analyses were made *ceteris paribus*, without consideration to the recommended changes to underwriting contained in this report.

An acceptable insurance risk does exist for nursery crop production. The Contractor believes replacement of the current unwieldy and ill-fitting structure for determining liability is an option RMA should consider. This is discussed in some detail in Deliverable 1b. Considering the scope and structure of the contract controlling this evaluation project, the remaining Contractor recommendations focus on the continuation of the Nursery Program with modifications.

Regarding continuation of the Nursery Program with modifications, the Contractor has no recommendation that affects the Federal Crop Insurance Act, or any fundamental element of the Crop Insurance Handbook (CIH), the FCI-35 documents, or the Loss Adjustment Manual (LAM). The Contractor's recommendation regarding continuation of the Nursery Program with modifications do affect the regulations published at 7 CFR 457.162 (the Nursery Crop Insurance Provisions).

Recommendations affecting the Crop Provisions, the Special Provisions, the Loss Adjustment Standards Handbook (LASH), the Underwriting Guide, and the LAM to improve clarity and remove ambiguities are incorporated here by reference to the preceding component discussions. As noted earlier, the Contractor believes adjustments to the rate structure are prudent.

Furthermore, the Contractor recommends RMA consider adding Grafting/Grafted Nursery Plants as a practice under the Nursery Crop Provisions. The present Nursery Crop Provisions specifically exclude stock plants "grown solely for harvest of buds" (08-073 (Rev. 10-06), section 8(i)). Therefore, the plants from which the scion is harvested, perhaps the most valuable assets in nursery operations that propagate grafted plants, are not insurable. Furthermore, rootstock is generally uninsurable in its earliest stages because of size limitations. Finally, when the grafted plants are pruned to stimulate growth of the scion the grafted plants are often much less than six inches tall and therefore again fall outside the size that is insurable. Grafted nursery plants play an important role in the U.S. food supply. Inasmuch as nursery insurance exists at all, insuring important elements of the agricultural economy that addresses food supply is appropriate. Finally, the management practices for grafting/grafted nursery plants are better defined than are the practices for many nursery crops. Thus barriers to implementing insurance for this practice are neither structural nor contrary to legislation. This recommendation does not extend to insuring failure of the graft.

The Contractor heard repeatedly that loss adjusters were not aware of nursery practices and could therefore not properly adjust losses. This deficiency seems to derive from the need to identify the extent of damage on individual plants. The repeated nature of this complaint indicates that frequently the requirements of section 7B of the Nursery LASH (FCIC-25750 (1-2011)) may not be met. If the current asset-based insurance is to be maintained, it is essential that the loss adjustment processes be changed so those who have suffered a loss believe the outcome of the loss adjustment process is fair and reasonable. To this end, the Contractor recommends RMA

require knowledgeable nurserymen be included in the loss adjustment process (the present language in section 7B of the LASH is permissive). The Contractor also recommends revising the approach for dealing with nursery plants that are perceived to have residual value greater than zero. These recommendations are necessary to gain acceptance by nursery growers of the validity of loss adjustment determinations. The Contractor further recommends RMA add a loss example tool to the portfolio of Nursery Program materials. This tool would be structured to allow potential insureds to see the impact of decisions about coverage levels and purchase of endorsements on indemnities following various hypothetical loss events.

The Contractor recommends producers be allowed to declare fields containing fewer plants than the number present under the typical planting density multiplied by some fraction, such as 0.20, as uninsurable. Following a loss, specific issues arise for producers of field-grown nursery plants because of the requirement that all production for a practice be insured. In a field that has suffered substantial damage, where a small number of mature plants are being rehabilitated, the production may be so sparse as not to justify full management of the field. Producers may be waiting to see what develops and to understand better their options with the few salvageable plants remaining in the field. Instead of focusing on salvage activity in these severely damaged fields, producers are addressing their limited resources to reestablishing the nursery inventory. Both producers and knowledgeable agents indicated including the remaining plants in a damaged field as insurable production makes no sense from the perspective of managing a nursery business. This change would allow a producer to address resources to new acreage, and direct the insurance to productive acreage.

Finally, producers and agents suggested contract pricing be made available under the Nursery Program for plants produced under contract. This suggestion is interesting and amenable to research. However, research into a potential contract pricing structure is well beyond the scope of this evaluation contract. In the absence of results from such research, the Contractor cannot recommend implementing contract pricing. However, the Contractor recommends RMA support a project to determine the feasibility of contract pricing for nursery crop production, but also recommends the proposed research be conducted after resolution of the fate of the current Nursery Program.

In summary, the Nursery Program should be continued for the near term with substantial modifications. The insurance documents for this program need to be carefully revised to limit conflicts and to assure the policy components provide a clear contract understood by both the insured and the insurer. The loss adjustment process needs to be modified to assure loss adjustment is fair and appropriate. The Contractor further recommends the addition of Grafted Production as a practice and a continuous enrollment to address concerns about the SCD. While concerns about the offer of CAT coverage raises some important issues, the correct recommendation concerning CAT may be masked by the inappropriate rebating of commissions that is occurring in some areas. For the near-term, the Contractor does not recommend eliminating CAT coverage. However, the Contractor does recommend that issue be revisited if the current Nursery Program is not replaced by one or more substantially different risk management products such as those discussed in Deliverable 1b.

SECTION II. DATA COLLECTION REVIEW

This report documents an evaluation of the Nursery Program. The report was produced after a thorough review of published material, stakeholder input, and unpublished data relevant to the program. This section of the evaluation report addresses the requirement that:

“The second section of the report shall contain the findings of the Initial Data Collection review, including the descriptive program summary. All conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within the document and among other documents will be described.”²

II.A. Background

RMA awarded a contract³ for an evaluation of the current USDA RMA Nursery Crop Insurance Program to the Contractor. In addition, the contract calls upon the Contractor to make recommendations concerning alternatives for providing insurance for nursery crops. The Contractor completed the program evaluation, addressing the terms of the contract, RMA’s Program Evaluation Handbook, and relevant portions of the Crop Insurance Act (U.S. Code Title 7, Chapter 36, Subchapter I, Section 1508 as amended, hereinafter “the Act”). Inasmuch as significant content in Deliverable 2a, the Final Nursery Program Evaluation Summary Report, informs the discussions in Deliverable 2b, the Final Nursery Program Recommended Improvements Report, the two elements of Deliverable 2 are provided to RMA together in a single volume.

In the Solicitation, RMA provided background on the Nursery Crop Insurance Program as context for the program review project:

“The nursery crop insurance program began in 1989. The initial program only covered container grown plants that were classified as woody, herbaceous, or foliage landscape plants. Effective for the 1999 and 2006 crop years, significant changes to the Nursery Crop Insurance Provisions were made that greatly expanded and modified coverage under the program. The program functions as an asset-based form of insurance coverage. In contrast to many crop insurance programs (e.g., wheat, corn, soybeans, cotton, etc), coverage is not based on a yield guarantee that is established using a historical average crop yield per acre. Likewise, the nursery program is not a form of revenue insurance coverage (e.g., Adjusted Gross Revenue and Crop Revenue Coverage). No minimum income guarantee is established. Loss of revenue due to plant price fluctuation is not covered under the nursery program.

“The nursery crop insurance program is available to wholesale nursery producers to assist in their management of nursery plant production risks against losses from specific perils. A wholesale nursery is defined as receiving 50% of its gross income from the wholesale marketing of plants. (The dollar amount of wholesale plant sales is divided by the total dollar amount of wholesale and retail plant sales to calculate the percentage of wholesale sales.) The FCIC nursery program covers field grown and containerized nursery plants. Structures,

² USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 12.

³ Contract D11PS18819/0001: Evaluation and Recommended Improvements of the Current Nursery Crop Insurance Program and Recommendations for Alternative Designs for Providing Insurance for Nursery Crops.

equipment, supplies, etc. are not covered. Additional levels of coverage [i.e., buy-up coverage] and catastrophic risk protection (CAT) are available under the program.”

The Nursery Program differs materially from the norm for most other crop insurance programs. It is substantially more complex than most programs and is based on assets rather than yields. While there are other asset-based FCIC programs (e.g., Florida Fruit Trees, Texas Citrus Trees, Hawaii Tropical Trees, and the Cultivated Clams Pilot programs), the Nursery Program is far more complex than these others, primarily because of the numbers of types, the numbers of species and varieties covered, and the wide range of sizes of plants (and consequently of the values of these plants) that are insurable. In addition, the insured objects in the tree programs are immobile, while containerized nursery crops are quite mobile (both as an effect of natural disasters like floods and wind storms and as a consequence of human actions).

Consequently, the Nursery Program is based on a valuation per plant at specifically defined stages (age or size), type and size of container (if container grown), and management practice (container-grown or field-grown). In the solicitation for this contract, RMA indicated there were approximately 25,500 insurable plants on the Eligible Plant List and Plant Price Schedule (EPL PPS) for the 2010 crop year.⁴ That number is a measure of the complexity of the insurance and reflects the numbers of species, varieties, and plant sizes that are insurable.

The current Nursery Program has even greater complexity as a result of significant adjustments to the Crop Provisions made in the Special Provisions. Some statements in the Special Provisions change definitions used in the insurance. Others add features to the insurance not mentioned in the Crop Provisions (e.g., the over-report factor, although this factor is discussed in the Underwriting Guide (FCIC 24090 (1-2011))).

With regard to establishing insurance, the insured is required to file a Plant Inventory Value Report (PIVR). This document is comparable to an acreage report (i.e., it contains the information needed to establish liability). For the purposes of maintaining the EPL PPS and underwriting the individual policies, the insured provides two copies of the insured’s wholesale catalogs.⁵ The prices of plants for insurance purposes may not exceed the lesser of the prices established by the insured’s catalog or uniform national values contained in the EPL PSS issued by RMA. The PIVR must report the total value of the inventory of each of up to 16 insurable plant types. Yet that inventory is subject to sale and replacement during the insurance period. This inserts an added complicating factor into any design of a nursery insurance program.

Since an insured’s inventory fluctuates during a crop year, the insured is given two opportunities to revise the PIVR, but only to increase liability (i.e., if the inventory decreases, a revision is not allowed). The premium for the increased PIVR value is calculated from the month the increase is effective until the end of the insurance year. Insureds whose policies have additional coverage for all practices (i.e., container-grown or field-grown) can also purchase a Peak Inventory Endorsement (PIE) to provide coverage higher than that reported on the initial PIVR for a

⁴ Solicitation: Attachment – Operation of Current Nursery Crop Insurance Program, page 1.

⁵ The Nursery Program uses the phrase “catalog or price list” repeatedly throughout the program documents. This report uses the term “catalog” to mean any document containing nursery plant prices maintained by a nursery.

limited period during the insurance year. The premium for the PIE is calculated for the months the Endorsement is effective (i.e., it does not need to run to the end of the insurance year).

The crop provisions detail the insurable causes of loss under the Nursery Program:

Causes of Loss.

- (a) In accordance with the provisions of section 12 of the Basic Provisions, insurance is provided for unavoidable damage caused only by the following causes of loss that occur within the insurance period:*
- (1) Adverse weather conditions, except as specified in section 10(c) or the Special Provisions;*
 - (2) Fire, provided weeds and undergrowth in the vicinity of the plants or buildings on your insured site are controlled by chemical or mechanical means;*
 - (3) Wildlife;*
 - (4) Earthquake; or*
 - (5) Volcanic eruption.*
- (b) Insurance is also provided against the following if due to a cause of loss specified in section 10(a) that occurs within the insurance period:*
- (1) A loss in plant values because of an inability to market such plants, provided such plants would have been marketed during the crop year (e.g. poinsettias that are not marketable during their usual and recognized marketing period of November 1st through December 25th);*
 - (2) Failure of the irrigation water supply; or*
 - (3) Failure of, or reduction in, the power supply.*
- (c) In addition to the causes of loss excluded in sections 12(a) and (c) through (f) of the Basic Provisions, we do not insure against any loss caused by:*
- (1) Disease or insect infestation, unless:*
 - (i) A disease or insect infestation occurs for which no effective control measure exists; or*
 - (ii) Coverage is specifically provided by the Special Provisions.*
 - (2) The inability to market the nursery plants as a result of:*
 - (i) The refusal of a buyer to accept production;*
 - (ii) Boycott; or*
 - (iii) An order from a public official prohibiting sales including, but not limited to, a stop sales order, quarantine, or phytosanitary restriction on sales;*
 - (3) Cold temperatures, if cold protection is required in the Eligible Plant List, unless:*
 - (i) You have installed adequate cold protection equipment or facilities and there is a failure or breakdown of the cold protection equipment or facilities resulting from an insurable cause of loss specified in section 10(a) (the insured plants must be damaged by cold temperatures and the damage must occur within 72 hours of the failure of such equipment or facilities unless we establish that repair or replacement was not possible between the time of failure or breakdown and the time the damaging temperatures occurred); or*

- (ii) The lowest temperature or its duration exceeded the ability of the required cold protection equipment to keep the insured plants from sustaining cold damage;*
- (4) Collapse or failure of buildings or structures, unless the damage to the building or structures results from a cause of loss specified in section 10(a);*
- (5) Any cause of loss, including those specified in section 10(a), if the only damage suffered is a failure of plants to grow to an expected size; or*
- (6) In lieu of section 12(b) of the Basic Provisions, failure to follow recognized good nursery practices.⁶*

Should a loss occur, the adjustment procedures require two additional inventories be created. The first establishes a basis for determining the value of all plants insured under the policy at the time of the loss (the Field Market Value A or FMV A), while the second establishes a basis for determining the value of the insured plants after a loss (the Field Market Value B or FMV B). The positive difference between the two values (FMV A minus FMV B) is the loss for the purpose of insurance.⁷ The coverage level and factors reflecting the accuracy and precision of the inventory establishing the insured liability (i.e., the initial or revised PIVR) are then used to assess if the amount of loss so determined should be reduced.

The Program Evaluation

Program evaluations are intended to establish if RMA programs are sound and effective risk management tools and if these programs meet the needs of producers. They are also intended to determine that relevant provisions of the Act are met effectively and efficiently. The Act contains the following language RMA specifically identifies as relevant to the program review mission:

Section 502(a) states: *“It is the purpose of this chapter to promote the national welfare by improving the economic stability of agriculture through a sound system of crop insurance and providing the means for the research and experience helpful in devising and establishing such insurance.”*

Section 508(a) (1) states: *“If sufficient actuarial data are available (as determined by the Corporation), the Corporation may insure producers of agricultural commodities under 1 or more plans of insurance determined to be adapted to the agricultural commodity concerned.”*

Section 508(i) (2) states: *“Review of rating methodologies. To maximize participation in the Federal crop insurance program and to ensure equity for producers, the Corporation shall periodically review the methodologies employed for rating plans of insurance under this chapter consistent with section 1507(c)(2) of this title.⁸”*

⁶ USDA, RMA, 2008, Nursery Crop Provisions (08-073), pp. 5-6.

⁷ Since unreported plants may be lost or plants not insured because the unit structure may be lost, the insured may have a financial loss that is markedly different from the loss for insurance purposes. This is no different from other asset-based insurance (e.g., home-owners content insurance) in that uninsured assets may be lost without affecting the size of the indemnity payment.

⁸ Section 507(c)(2) refers to contracting for actuarial, loss adjustment, and other services.

Section 508(i) (3) states: *“Analysis of rating and loss history. The Corporation shall analyze the rating and loss history of approved policies and plans of insurance for agricultural commodities by area.”*

Section 506(o) (2) states: *“The Corporation shall take such actions, including the establishment of adequate premiums, as are necessary to improve the actuarial soundness of Federal multiperil crop insurance made available under this chapter to achieve, on and after October 1, 1998, an overall projected loss ratio of not greater than 1.075.”*

Section 522(a) (3) states: *“The Corporation shall approve a reimbursement...only after determining that the policy is marketable based on a reasonable marketing plan, as determined by the Board.”⁹*

RMA provides substantial guidance concerning the form of the report addressing an evaluation of a crop insurance program. The Program Evaluation Handbook describes the structure of the evaluation report in detail:

- (1) *The first section of the report shall be an Executive Summary. This summary will contain the recommendations together with a brief justification for each.*
- (2) *The second section of the report shall contain the findings of the Initial Data Collection review, including the descriptive program summary. All conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within the document and among other documents will be described.*
- (3) *The third section of the report shall contain the findings of the listening sessions held in conjunction with the Program Evaluation....In addition to conducting listening sessions as part of its research, the respective RMA Regional Offices and RMA Compliance Offices – separately – shall also be contacted for their comments regarding the program....*
- (4) *The fourth section of the report shall contain the findings of the industry research analysis. A primary focus of the discussion should be structural changes in the industry and their potential impact on the crop insurance program under review.*
- (5) *The fifth section of the report shall contain a thorough discussion of the findings from use of the Program Evaluation Tool. The Program Evaluation Tool is designed to address basic insurability questions, such as perceived risk, availability of alternative risk sharing mechanisms, etc. The tool should be completed for each region of production, based on information obtained from the listening sessions, RMA Regional Offices and Compliance Offices, analysis of the program, and other sources. A copy of the completed diagnostic form for each production/pilot region should be included in an appendix to the report.*
- (6) *The sixth section of the report shall contain the findings of the Evaluation Components analysis. Themes developed while investigating these topics will be described as will the potential or probable impact upon the crop program’s performance. Data contained in this section must be highly summarized. Discussions shall focus on the meaning of the data and not upon describing*

⁹ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 11-12.

- the numbers. More detailed tables, maps and graphs will be included in an Appendix. All conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within and among the documents should be thoroughly documented.*
- (7) The seventh section of the report shall contain the results of the Unpublished Data Report findings detailing the statistical analysis of the performance of the crop program.*
- (8) The eighth section of the report shall contain the conclusions and recommendations. Particularly salient conclusions will be whether (1) an acceptable insurance risk does or does not exist, and (2) the plan of insurance is appropriate for the crop. The recommendations shall be subdivided into individual sections dealing with changes in statute, in regulations, in the actuarial documents, and in procedures. Each section shall contain content as described in section 6. If it is concluded that a new (or replacement) plan of insurance should be adopted for the crop, recommendations of sufficient detail to allow development shall be provided in this section.¹⁰*

The USDA RMA Program Evaluation Handbook (FCIC 22010 (09-2005), p. 12) further indicates:

The outcome of a program evaluation is a determination that an acceptable insurance risk does or does not exist. An acceptable insurance risk may exist when (1) an actuarially sound premium can be determined and charged to customers who are willing to accept that price, (2) the customers cannot substantially adversely select against the program, (3) moral and morale hazards are avoidable or controllable, (4) there is sufficient interest to spread risk over an acceptable number of insured persons and geographic area, (5) effective loss control methods are available, and (6) the covered perils are identified by frequency and severity.

The program evaluation may result in recommendations to revise any regulation, manual, handbook, guide, directive, or actuarial structure to address identified conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems. Ultimately, the program evaluation identifies needed modifications to assure that the program provides an effective and efficient risk management program to agricultural producers; has documents that are clear, consistent, in accordance with the applicable law and regulations, understandable, predictable, and enforceable; that minimizes the potential for fraud, waste, and abuse; that optimizes risk transfer; is actuarially sound; and that reduces the risk of litigation. In certain cases, the program evaluation may recommend development of a replacement plan of insurance if it is determined that the existing program is not appropriate for the insured commodity and/or does not provide an effective risk management tool.¹¹

¹⁰ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 26-27.

¹¹ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), p. 12.

The Contractor endeavored to address these disparate requirements fully and effectively. In addition, with regard to potential alternative insurance designs, the Government requested the Contractor “think outside the box.” The structure of such thoughts is less constrained by existing procedures and regulations than by logic and potential opportunities for improving the risk management tools for nursery producers. Consequently, the text addressing Deliverable 2b, the Final Nursery Program Recommended Improvements Report, is less rigid in its structure and flow than is the language for the program evaluation itself. The approach taken in Deliverable 2b is conceptually identical to a “brainstorming” session, wherein no ideas are dismissed *a priori*, but instead each idea is viewed as potentially triggering other ideas or leading to a synthesis of multiple ideas.

II.B. Approach

The Contractor gathered information for the completion of this report from a wide variety of sources. These included RMA documents relevant to the evaluation, unpublished RMA data, publications relevant to the economic and agricultural characteristics of the nursery industry, and input from almost 200 stakeholders.

The Contractor obtained and reviewed information concerning the implementation and maintenance of the Nursery Program from public sources. The Contractor also obtained and reviewed documents provided by RMA in response to a request for materials relevant to this review. The expansions of and substantive changes in the Nursery Program are complex, but well documented. The changes in insurance experience over time, as documented in the Types 11, 15, and 21 records, reflect these program changes and provide substantial data to inform a reviewer of the effects of program changes.

Crop production data are less easily obtained. The nursery segment of the U.S. agricultural industry is extraordinarily complex. Activities in the segment include propagation and sale of commercial, ornamental (i.e., patio and houseplant), and landscape plants. Nursery production is sold directly into retail markets and to a variety of wholesale markets (production agriculture, landscapers, retail outlets, etc.). Many nursery operations are vertically integrated, including production agriculture, processing, marketing, and transportation activities. Plants sold by producers in the nursery segment range in size from tiny plants to trees whose caliper and size allow the creation of instant landscapes. Nursery plants include monocots (grasses and palms) and dicots (broad-leafed plants); conifers, cycads, ferns, and flowering plants; they include annuals, biennials, and perennials. Some nursery crops are evergreen, others are deciduous. This diversity is reflected in the fact that the EPL PPS is extensive; RMA indicated the 2010 EPL PPS listed 25,500 plants.¹²

The 2007 Census of Agriculture reported almost \$144 billion of crops (including nursery and greenhouse crops) sold in the United States.¹³ Of that amount, more than \$16.6 billion was attributed to nursery, greenhouse, floriculture, and sod production¹⁴ on 50,784 operations. The Nursery Program specifically excludes certain categories of production from the Census

¹² Solicitation: Attachment – Operation of Current Nursery Crop Insurance Program, page 1.

¹³ USDA, NASS, 2009, Census of Agriculture, Table 1, page 7.

¹⁴ This figure does not include production values for short rotation woody crops and Christmas trees, which are included in some census reports of nursery, greenhouse, floriculture, and sod crops.

“Nursery, Greenhouse, Floriculture, and Sod” categories. The Nursery Program also excludes operations that do not have at least 50 percent of their gross income from sales into wholesale nursery crop markets. Data on the wholesale/retail breakdown of nursery crop sales are not generally available in any form that would allow a precise assessment of the sales from nursery crop production eligible for insurance under the Nursery Program.

The 2009 Census of Horticultural Specialties (Horticulture Census) was a follow-up survey to the 2007 Census of Agriculture and surveyed all operations that reported horticultural crop sales of \$10,000 or more on the 2007 Census. The Horticulture Census addresses crops including aquatic plants, bedding plants, Christmas trees, commercial vegetable transplants, cut cultivated florist greens, cut flowers, dry bulbs, flower seeds, greenhouse-produced vegetables, ground covers, potted flowering plants, propagation materials, short-rotation woody crops (e.g., pulpwood crops), shrubs, sod, trees (including fruit and nut trees), unfinished or pre-finished plants, vegetable seeds, vines, and other nursery or greenhouse plants. For the purposes of crop insurance, nursery crops exclude plants grown to produce Christmas trees, cut flowers, cut greens, dry bulbs, fruits (as opposed to fruit plants), seeds, short-rotation woody crops, and vegetables (as opposed to vegetable plants), but include the other horticultural categories in addition to the specific grouping the Horticulture Census categorizes as “nursery crops.” As noted previously, plants grown on operations with more than 50 percent of their sales into retail markets are also not insurable under the Nursery Program. Consequently comparing populations and values between the Horticulture Census and the Nursery Program is challenging at best and impossible in the worst cases. Nonetheless, there is much useful information regarding the nursery industry (for the purposes of crop insurance) that can be gleaned from the Horticulture Census. These are reported in the industry research analysis section of this report.

The concepts of planted and harvested acres are meaningless in the nursery crop industry. There is no set planting period and harvests of selected individual plants from a productive field are common. Spacing for containerized plants changes as the plants grow and as they are repotted and repositioned in the nursery. Consequently no data on these characteristics are presented in this report.

The best data on production by county, type, and practice are those in the Horticulture Census. The limited frequency of data collection for that census and the issues with nursery industry segmentation (i.e., segments the Horticulture Census includes that are excluded from participation in the Nursery Program) make the industry profile that can be gleaned from the Horticulture Census a snapshot at best. A separate survey would be required to make that snapshot a high-resolution picture of the nursery industry as defined by the Nursery Program. The Contractor is precluded from conducting such a survey by the Paperwork Reduction Act and by the scope of the contract.

The Contractor reviewed the nursery industry literature to identify pertinent economic or industry studies performed by the Economic Research Service (ERS), the Cooperative State Research, Education, and Extension Service (CSREES), industry trade groups, and other authoritative sources. The results of this research are reflected primarily in the industry research analysis section of this report. The nursery industry, as defined by the Nursery Program, is too diverse and segmented to be addressed in any single report from any of these sources.

Furthermore, industry perceptions of the structure of the nursery industry and the structure under the Nursery program are not congruent. An excellent example of this is the number of industry associations that address nursery and landscaping together. Landscaping businesses are not insurable under the Nursery Program.

Stakeholder input was gathered in nine onsite listening sessions; a telephonic listening session; numerous telephone interviews, unsolicited telephone calls, and written and email comments. The Contractor extended invitations to RMA Regional and Compliance Offices for additional input. In gathering stakeholder input, specific emphasis was placed on identifying program vulnerabilities and weaknesses. The listening sessions were conducted to comply with the Paperwork Reduction Act of 1995

The stakeholders providing input included producers, nursery managers, processors, insurance agents, Approved Insurance Provider (AIP) executives, RMA personnel, and academic researchers. The majority of respondents (though not the majority in every venue) were producers.

The Contractor found producers of insurable nursery crops are generally aware of the Nursery Program, although smaller producers are less likely to know of the program than larger producers. Knowledgeable producers who elect to participate in the program do so in large part because of their concern about severe weather risks. Knowledgeable producers who elect not to participate do so primarily because of the complexity of the insurance and their perception of the limited benefits available from insurance coverage they consider “affordable.” Producers generally indicated the Nursery Program was burdensome, flawed, and difficult to use. Furthermore, producers indicated that indemnity payments from the Nursery Program provide financial resources for “starting over” rather than for “continuing on.” This likely reflects the substantial use of CAT coverage instead of additional coverage levels.

The Contractor completed all questions in the Program Evaluation Tool applicable to nursery crops by region based on the information obtained from listening sessions and the Contractor’s research and evaluation activities. A discussion of the findings from the use of the Program Evaluation Tool is found in the fifth section of this report. Copies of the completed Program Evaluation Tool diagnostic questionnaire for each region are included in Appendix A of the report.

Following completion of the evaluation of the Nursery program, the Contractor organized the information required by the Program Evaluation Handbook to reflect the structure and flow outlined by that document.

SECTION III. LISTENING SESSIONS

This section of the evaluation report addresses the requirement that:

“The third section of the report shall contain the findings of the listening sessions held in conjunction with the Program Evaluation....In addition to conducting listening sessions as part of its research, the respective RMA Regional Offices and RMA Compliance Offices – separately – shall also be contacted for their comments regarding the program....”¹⁵

The Contractor gathered stakeholder input during discussions with producers, governmental officials, insurance industry representatives, and other interested stakeholders. The Contractor conducted nine onsite listening sessions, including sessions in Annapolis, Maryland (May 20, 2011); Homestead, Florida (July 28, 2011); Apopka, Florida (July 29, 2011); McMinnville, Tennessee (October 13, 2011); San Marcos, California (October 31, 2011); Davis, California (November 1, 2011); Wilsonville, Oregon (November 3, 2011); Richland, Washington (November 4, 2011); and Tyler, Texas (November 16, 2011). The Contractor also conducted a telephonic listening session for North Carolina stakeholders on June 29, 2011 and participated in follow-up discussions with stakeholders. One hundred-forty-five stakeholders attended the listening sessions. These included 71 producers, 7 producer organization representatives, 46 insurance industry representatives, and 9 nursery industry extension agents. The remaining attendees were there on behalf of the federal and state governments. The listening sessions were conducted in a manner consistent with the constraints imposed by the Paperwork Reduction Act. Consequently the discussion was driven by an agenda (see Appendix B for a sample listening session agenda) rather than by a set of questions.

To ensure appropriate timing and proper location of the listening sessions, each session was scheduled following recommendations from regional nursery producer organizations and with the assistance of AIP contacts familiar with the Nursery Program. While the listening sessions were scheduled for one and one half to two hours, the Contractor did not suggest an end to the discussions; instead sessions were ended when all stakeholders had the opportunity to comment on the program and no additional comments were forthcoming.

Some stakeholder concerns were consistent throughout the country, while others were regional. Producers in every region indicated it was essential to understand that nursery crop production does not follow the practices of row crops. Producers in every region said one of the primary motivations for participation in the Nursery Program is to assure they have access to federal disaster programs. Furthermore, both producers and agents indicated the Nursery Program was burdensome and that change would be welcome.

Annapolis, Maryland

The Maryland Nursery and Landscape Association and the Maryland Department of Agriculture assisted with recruitment of stakeholders from a region including five states (Delaware, Maryland, New Jersey, Pennsylvania, and Virginia). Sixteen stakeholders attended this listening session: eight producers, two representatives from the Maryland Nursery and Landscape

¹⁵ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 12.

Association; two extension agents; two insurance industry stakeholders; and two state agency stakeholders.

The first stakeholder comment, from a producer, was that the program was too complicated and requires more work than any other type of crop insurance program. An insurance industry stakeholder then indicated the program does not appropriately address either producer or agent financial considerations. A follow-up comment suggested the insurance is not structured to reflect the cash flow of nurseries. An example of this is the value of the crop and the input costs are not reflected in the values in the PIVR/CIVR. Both the insurance and producer stakeholders commented that currently DataScape requires too much time to enter the required information. In addition, the list of eligible varieties in DataScape is not up-to-date. The producer stakeholders stated the inventory pricing provided by the government does not accurately represent the current market prices. The producer stakeholders opined that neither the cost of the insurance nor the premiums of the buy-up policy reflect the risk in the Maryland area; the producers believe the current premiums are higher than the risk they perceive. The producer stakeholders commented that their inventory is always changing, therefore creating difficult situations for inventory recordkeeping. The stakeholders continued that when a preliminary inspection occurs, it is at a time when the nursery inventory has changed, thus the inventory at inspection does not reflect the inventory when the producer signed up for insurance. Furthermore, the SCD does not currently align with the calendar of nursery industry practices in the Mid-Atlantic States. One producer commented that when loss adjusters came to evaluate a loss, the adjuster declared plants salvageable even though they were severely damaged and not saleable in any wholesale market. This was attributed to a general lack of knowledge about the nursery industry on the part of crop insurance loss adjusters. In addition, producer stakeholders felt the adjusters wanted to limit the indemnity no matter the value lost. An insurance industry stakeholder commented they believe the Standard Reinsurance Agreement works against the insurance company. Producer stakeholders thought the 72 hour claim window was too short, due to the fact that damage from some perils (particularly insects like cicadas [sic]) takes longer than 72 hours to be evident. Insurance industry stakeholders stated industry wide-cuts in the Errors and Omissions (E&O) insurance put them at extreme risk if they assisted a producer in entering PIVR data. This situation has implications concerning personal liability and/or higher A&O insurance premiums that make agents less eager to provide substantial assistance to their nursery crop insurance clients.

Stakeholder Introduced Concepts

During the Annapolis, Maryland listening session, five stakeholder-introduced nursery insurance concepts were introduced. First, a producer stakeholder suggested a revenue-based insurance plan that would require a 5 percent deductible and if a loss occurred, the insurance could cover a portion of the next 10 to 15 percent of the lost crop. Under this model, the producer would self-insure for losses larger than 10 to 15 percent (implying that the perceived probability of losses greater than 15 percent is very small). Second, a producer suggested premiums should be established based on the experience of individual nurseries. In other words, rather than county-wide premium structures, the premiums should incorporate a loss-experience element as do premiums for automobile insurance. A third suggestion was for an insurance structure based on stated value or anticipated revenue, with a percentage of the loss covered by a deductible and all excess losses covered by the insured. The stakeholders believed a \$50,000 deductible on \$1

million (i.e., a 5 percent deductible) would work well for most growers. One producer suggested the most useful insurance would be similar to the current Actual Revenue History (ARH) products available for some crops. Such a product might target a subset of the nursery industry or might be structured to address subsets of a producer's production by type and practice. The final suggestion was for a set of regional insurance products reflecting the regional character of nursery production.

North Carolina

The telephonic listening session in North Carolina was conducted with the support of the North Carolina Nursery and Landscape Association. The association distributed an announcement of the session. The Contractor also informed the Regional Office (RO) once a schedule had been established. North Carolina State University nursery extension offices were notified of the upcoming listening session and were asked to inform producers. Five producers, one representative of the North Carolina Nursery and Landscape Association, and one extension agent participated in the conference call.

The North Carolina producer stakeholders thought the buy-up insurance for the Nursery Program was too expensive. The risk in that area is perceived to be lower than the risk implicit in the premiums for buy-up insurance. The producers indicated the administrative burden for the Nursery Program is incredibly time consuming and that the DataScape inventory process is redundant (i.e., the nurseries each keep a different inventory for their business management) and consequently a drain on the producer's time. Producers indicated adjusters addressing losses in the nursery industry are not knowledgeable about the industry and require additional training, particularly about production practices and the structure of individual nursery operations. Producers believe the adjusters to have too much discretion in requiring rehabilitation of a tree. The producer stakeholders stated that sometimes a correct management decision is to destroy a tree rather than rehabilitating it. The producers noted that each nursery is unique and an insurance approach that treats the industry as a homogenous group will not be successful. An illustration of this point is that one producer's final product is another producer's "liner."¹⁶ The producers called attention to need for insurance approaches that distinguish between multi-year crops and crops that are ready for market in less than one year. They suggested trees receiving inputs for more than a year need to be priced to reflect the costs of those inputs. The impact on the insurance of diversity in a nursery's production was discussed. The pooling of value under a practice (presumably for CAT policies) was perceived by producers as a problem with the design of the insurance. Producers indicated that the SCD does not accurately represent the industry calendar in the South Atlantic production area. Stakeholders would prefer a SCD that more accurately represents the timing of the production cycle for the nursery industry in North Carolina.

Stakeholder Introduced Concepts

During the North Carolina listening session, three stakeholder-introduced concepts were offered. First, the stakeholders suggested the more susceptible nursery species should be insured differently (i.e., they should have higher rates, an independent unit with its own deductible) than less risky nursery species. Second, the producers would like to have an insurance product that

¹⁶ In this case the term 'liner' was being used to indicate a plant that is placed into the field in a row or line.

focuses on a single weather peril, perhaps in a single perilous window. Finally, the producers indicated they would prefer a greater variety of nursery crop types, preferably down to the genus level.

Homestead, Florida

The Contractor worked with the Florida Nursery Growers and Landscape Association to schedule the time and location of the Florida listening sessions. An announcement of the sessions was distributed to association members. The Contractor then informed the Southern Nursery Association of the Florida listening session schedule. An announcement of the sessions was posted on the association website. The Contractor informed the Valdosta RO of the date and time of the listening session. The Contractor also contacted AIPs selling insurance for nursery crops in Florida and was told the listening session announcement would be distributed to agents, who in turn would be encouraged to pass the schedule information on to insured and uninsured producers. Forty-seven people attended the Homestead listening session including 25 producers, 20 insurance industry stakeholders, 1 extension agent, and a nursery expert from the Valdosta RO. Following the listening session, the Contractor and several insurance industry stakeholders visited an operation that had recently had a nursery insurance claim. There were a number of other nurseries producing a variety of different nursery types in the area the Contractor visited.

Producers stated the SCD does not align with the nursery business practices calendar for the Homestead region. Producers indicated a better SCD would be around first of June or the first of July. Both insurance industry and producer stakeholders indicated the crop insurance program is extremely time consuming and onerous. Producers said a plant inventory crop insurance program does not address the nature of the nursery industry because their plant inventory changes every day. One producer noted an operation can pot as much as \$3 million of new inventory in a 30 day period. This creates challenges in trying to maintain an accurate and precise inventory.

Producers suggested one major problem with this program is the CAT coverage. They continued by giving an example relating to an over-report situation which resulted in an indemnity much smaller than the producer expected. A stakeholder suggested CAT coverage could be terminated. The producer and insurance industry stakeholders commented that after a loss occurred they struggled with the loss adjuster to determine whether the producer should rehabilitate specific trees and what the residual tree values were. The Florida producers indicated they preferred to have crop insurance for the entire crop. Stakeholders stated the ten percent over-reporting factor was too strict and they found it difficult to meet this target. Due to constant changes in the inventories (including adding new species and varieties as well as new size categories) the producers believe it is almost impossible to document their inventory at the ten percent level. The producer stakeholders indicated they felt too much of their time is dedicated to book-keeping for crop insurance, but then suggested more than two PIVR adjustments each year would better reflect the changing nature of their inventories. One producer commented that a shorter waiting period for the attachment of the insurance would be preferable. Both insurance industry and producer stakeholders stated DataScope is a useful approach to inventory management, but if DataScope is necessary it should at least be compatible (i.e., it should communicate and enable file transfer) with other software programs. Since the definitive age of the plant is sometimes unknown, the producer stakeholders indicated

they would like a different unit classification besides the age of the plant. One producer spoke at length about the difficulty of knowing the age of a plant. He suggested size, but not age, should be used in establishing the value of a particular plant

Producers discussed the relative risks of operations run by more and less experienced nursery producers. A suggestion was made that experience be factored in to the rating structure. The producer stakeholders indicated crop insurance is a vital risk management practice and nursery industry as currently structured is not viable without crop insurance. A number of comments reflected a misunderstanding of the Nursery Grower's Price Endorsement. Producers stated they would prefer to have price differences for size, variety, form (shape of the containerized plant), and the number of plants in a container. Producer and insurance industry stakeholders called for the formation of a focus group to further address changes to the Nursery Program. In addition, the stakeholders claimed increased compliance inspections would help limit insurance fraud. Overhead irrigation as a cold mitigation strategy was identified as a problem when required for large containerized trees. There are mechanical issues with setting up and maintaining such a system. One stakeholder indicated palm trees are not currently priced correctly. The suggestion was that palms should be priced based on species/variety and age. In addition, it was indicated overhead irrigation can be a burden to the very large container producers (200 gallon containers). Rebating of commissions from insurance agents to producers was identified as problem.¹⁷ The Contractor discovered there currently is no law against commission sharing between an agent and producer in Florida. Yet, such commission sharing can alter incentives to encourage risk tolerant producers to buy CAT insurance as a way to garner a share of the commission.

It is important to note, Florida statutes may be in conflict with language regarding rebates in the Standard Reinsurance Agreement (SRA) and the Act. The SRA defines rebate as

“Rebate” means to pay, allow, or give, or offer to pay, allow or give, directly or indirectly, either as an inducement to procure insurance or after insurance has been procured, any benefit (including money, goods or services for which payment is usually made [except any service provided to fulfill an obligation of the Company under this Agreement]), discount, abatement, credit, or reduction of the premium named in the insurance policy and any other valuable consideration or inducement not specified in the policy.”

Section II(a)(5) of the Act states: “A Company and its affiliates are prohibited from providing a rebate except as authorized in section 508(a)(9)(B) of the Act (7 U.S.C. § 1508(a)(9)(B)).” The section of the Act detailing the exception reads:

PREMIUM ADJUSTMENTS.—

(A) PROHIBITION.—Except as provided in subparagraph (B), no person shall pay, allow, or give, or offer to pay, allow, or give, directly or indirectly, either as an inducement to procure insurance or after insurance has been procured, any rebate, discount, abatement, credit, or reduction of the premium named in an insurance policy or any other valuable consideration or inducement not specified in the policy.

¹⁷ The Contractor verified rebating commissions is allowed under Florida law under certain circumstances. See Florida Statutes - Title XXXVII Insurance Section 626.572 (<http://law.onecle.com/florida/insurance/626.572.html>). It appears if rebates are offered, the only restriction is that the rebates be offered uniformly and without prejudice.

- (B) EXCEPTIONS.—Subparagraph (A) does not apply with respect to—*
- (i) a payment authorized under subsection (b)(5)(B);*
 - (ii) a performance-based discount authorized under subsection (d)(3); or*
 - (iii) a patronage dividend, or similar payment, that is paid—*
 - (I) by an entity that was approved by the Corporation to make such payments for the 2005, 2006, or 2007 reinsurance year, in accordance with subsection (b)(5)(B) as in effect on the day before the date of enactment of this paragraph; and*
 - (II) in a manner consistent with the payment plan approved in accordance with that subsection for the entity by the Corporation for the applicable reinsurance year.*

Stakeholder Introduced Concepts

The stakeholders at the Homestead, Florida listening session introduced three concepts. Stakeholders indicated nursery crop insurance based on producer-identified value (i.e., not necessarily prices) would be preferred. An insurance industry stakeholder suggested a crop insurance approach requiring the producer to report the inventory at the beginning of the month and the end of the month, with 12 insurance periods would better capture the assets at risk. This product could use either a total-assets dollar amount or actual assets inventory. This would capture the benefits of the PIE and could be offered as a rolling inventory endorsement. The third stakeholder suggestion was an insurance approach based on the square footage of the nursery under production, and a gross estimate of value per acre, in lieu of the current asset inventory.

Apopka, Florida

The Contractor worked with the Florida Nursery Growers and Landscape Association to schedule the time and location of the Florida listening sessions. An announcement of the sessions was distributed to association members. The Contractor then informed the Southern Nursery Association of the Florida listening session schedule. An announcement of the sessions was posted on the association website. The Contractor informed the COTR and Valdosta RO of the date and time of the listening session. The Contractor also contacted AIPs selling insurance for nursery crops in Florida and were told the listening session announcement would be distributed to agents, who in turn would be encouraged to pass the schedule information on to insureds and uninsured producers. This listening session was attended by 24 stakeholders including 5 producers, 16 insurance industry stakeholders, 1 nursery association representative, 1 extension agent, and a nursery crop expert from the Valdosta RO.

Producers indicated they would like the insurance to be simplified. An insurance industry stakeholder indicated the program would be improved if it more accurately reflected the pricing of ‘premium’ varieties, and would prefer the use of reported price, not the lesser of the EPL PPS and grower catalog prices. Producers indicated they would like to be allowed to make a downward PIVR inventory adjustment, and would like to be able to make more adjustments throughout the year. Currently multiple-stemmed trees are priced the same as a single-stem tree; producers would like to see an alternate pricing system for multiple-stem trees since these trees command a premium (this is a variation on the ‘pricing by form’ comment made in Homestead). Overhead irrigation as a cold mitigation strategy was identified as an issue when required for

large containerized trees. The producer stakeholders stated field-grown trees are not maintained with overhead irrigation as it wastes water and energy. Insurance practices for frost protection for containerized trees requires tipping the trees; this practice was identified by a producer as impractical due to the large size (200 gallons and larger) of some of the container trees. Some producers have an issue with the exclusion of stock plants from the insurance; the stock plants are essential to the production of their crop. An insurance industry stakeholder indicated if the over- and under-reporting tolerance was 20 percent, growers could establish their inventory well within that range. One producer felt the premium rate differentials between 60 and 75 percent coverage levels was unreasonable, the Contractor indicated the evaluation considers and addresses rates. The stakeholders indicated a problem with required recordkeeping: when a loss occurs, sales receipts are used to establish the price of a plant. Rules regarding receipts require complete information on each receipt. That was not the manner receipts were maintained on the operation in question. Producers indicated the crop insurance frost protection requirements for foliage plants don't reflect common nursery practices in the area. Insurance industry stakeholders stated their problems with DataScope: some plants are not listed in the correct zones while others are not on the DataScope list at all. A desire for DataScope to communicate with existing common software programs was a recurring theme. The stakeholders mentioned the over-reporting factor is a problem because inventories are always changing. Stakeholders also suggested eliminating CAT coverage because the insured does not really make a commitment (in the financial sense) under CAT coverage. One stakeholder suggested the government increase the punishment for insurance fraud (i.e., put convicted abusers of crop insurance in jail). Again rebates of commissions from insurance agent to producers were identified as an issue that particularly affects nursery insurance.

Stakeholder Introduced Concepts

The Apopka listening session had the largest number of stakeholder introduced concepts. Stakeholders suggested a move away from an inventory requirement at sign-up. The proposed program would require the producers to state a liability value at sign-up. At the time of a loss, remaining inventory and sales receipts would be used to establish the functional size of the liability. For example: if the producer wants one million dollars in coverage, they would pay for that level of coverage. However, after a loss, if they have \$750,000 worth of trees on the nursery, they would need to document at least \$250,000 in sales or the liability used for loss adjustment would be reduced. Second, stakeholders suggested an insurance plan that does not require every plant on the nursery to be insured. An insurance industry stakeholder suggested a replacement requirement similar to the current requirement for Florida Fruit Trees, with larger indemnities paid if the nursery plants are actually replaced. This insurance approach was proposed to operate as an endorsement to a revenue product. The program would use average revenue over the past seven years as a basis for the insured revenue guarantee. The replacement costs for the trees and the lost revenue for the year would be combined to establish the indemnity. Stakeholders suggested a premium discount for buy-up coverage for producers who had no claims. This program could be modeled similar to safe-driver discounts in auto insurance (which has been discussed for Federal Crop Insurance Programs before, but never implemented). An alternate discount approach could be structured around infrastructure. For example, if infrastructure to protect against flooding is incorporated into the operation, the premium could be discounted by the premium amount associated with flood, effectively like a "high risk land" designation, only in reverse. One producer suggested an AGR-type program for nursery.

McMinnville, Tennessee

The Tennessee listening session was scheduled with the cooperation of the Tennessee Nursery and Landscape Association (TNLA). The announcement of the session was distributed to TNLA members. The Contractor then informed the Southern Nursery Association of the Tennessee listening session schedule. An announcement of the sessions was posted on the association website. The session was held at the University of Tennessee extension offices. Extension personnel were notified of the upcoming listening session and shared that information with producers. The Contractor informed the COTR and the Jackson, Mississippi RO. This listening session was attended by 27 people: 19 producers, 2 representatives of the TNLA, 2 extension agents, 3 state and federal governmental stakeholders, and 1 insurance industry stakeholder. Following the listening session, the Contractor, an extension agent, and an RMA Kansas City stakeholder toured a nursery which produced both field-grown and containerized plants.

Inasmuch as a number of participating producers experienced substantial unindemnified losses in 2007 (from an unseasonable freeze) and had recently had devastating damage from cicadas, the discussions were spirited. The stakeholders had a consensus that the period of insurance (generally June 1 to May 31) does not reflect the industry's production cycle and creates problems with both scheduling and coverage. Producers suggested coverage from November 1 to October 31 would better reflect their business activities. The producer stakeholders indicated competent adjusters would be beneficial to the nursery industry, and suggested having a retired nursery person or extension agent travel with the loss adjusters to help determine the extent of the damage and which tree is worth rehabilitation or not. Producers find it hard to file a claim within 72 hours after an insurable event occurs. For some events, like unseasonable freezes or warm spells, the damage will not become apparent until approximately four months after the loss event; the latency of cicada damage can be even longer. There is usually a lot of money invested into the seed of the tree/plant, and the producer stakeholders stated the seed is a valuable entity of the nursery business. They would like to be able to insure planted seed and young seedlings. In Tennessee, rootstock trees are grown from seed or cuttings to an insurable size and subsequently trimmed to an uninsurable size. The current limitations of insurability to plants greater than 12 inches are a problem for grafted plants. The producer stakeholders stated they would like to be able to insure different species at different coverage levels and populations of the same species at different ages at different coverage levels. The producers pointed out that after peril had occurred, the loss adjusters thought there was more value in the damaged trees than the costs to rehabilitate the trees. That proved not to be the case after some plants had been in rehabilitation for three years. The producer stakeholders also mentioned they would like to be able to insure the crop after it is out of the ground. Finally, producers said they would prefer to be able to divide the insure units to insure each farm separately.

Stakeholder Introduced Concepts

The producer stakeholders recommended when a loss occurs, an extension agent travel with the loss adjusters to help adjusters understand which trees are worth rehabilitating and which should be declared destroyed.

San Marcos, California

The Contractor located the session in San Diego County because of the large amount of liability there. The specific location was suggested by the San Diego County Flower and Plant

Association. The listening session announcement was distributed to the following growers associations: San Diego County Flower and Plant Association, California Association of Nurseries and Garden Centers, and the Nursery Growers Association of California. In addition, a follow up email was sent to the associations requesting notice of the listening session be sent to their members. AIPs were asked to provide notice of the meeting to their agents, with particular focus on agents selling to nursery operations. The Contractor informed the COTR and the Davis RO of the session. The Contractor contacted the University of California-Davis extension personnel based in San Diego concerning the upcoming listening session. RMA supplied the Contractor a list of key attendees; the Contractor notified each these contacts individually of the listening session by a telephone call and/or an email. The Contractor contacted San Diego County Farm Bureau and requested information concerning the session be distributed to interested parties. The Contractor received two follow-up phone calls after the scheduled listening session, which provide the basis for the comments from this session.

The follow-up callers, representatives of the insurance industry, spoke of the difficulty selling Nursery program insurance in California, the challenges of using the DataScape system, and the substantial costs to the insurance agencies associated with this program. The agents expressed their belief that the Nursery Crop Insurance approach does not address current nursery risk management needs in southern California inasmuch as the producers' inventories are constantly changing (new species, new sizes, new varieties, etc.).

Davis, California

The Contractor located the session in Davis because of the presence of the university, the RO, and substantial production of grape, fruit tree, and nut tree nursery plants. The Contractor contacted the University of California-Davis extension office concerning the upcoming listening session. The extension office suggested the session be located in a room adjacent to the annual Foundation Plant Services nursery meeting and held just prior to that meeting. The listening session announcement was distributed to the California Association of Nurseries and Garden Centers and the Nursery Growers Association of California. In addition, a follow up email was sent to the associations requesting notice of the listening session be sent to their members. AIPs were asked to provide notice of the meeting to their agents, with particular focus on agents selling to nursery operations. The Contractor informed the COTR and the Davis RO of the session. RMA supplied the Contractor a list of key attendees; the Contractor notified each these contacts of the listening session by a telephone call and/or an email. The Contractor contacted Farm Bureau and requested information concerning the session be distributed to interested parties. Although this meeting was scheduled on the same day and in the same location as a Foundation Plant Services meeting (with 70 producers and academic researchers attending) and substantial recruiting efforts were made both before the session and during the course of the session, no producers indicated interest in discussing the Nursery Program. After encouraging one of the producers who was attending the Foundation Plant Services pre-meeting to come into the listening session meeting room, the producer said, "I didn't even know there was crop insurance for nursery." Like the others, he declined our face-to-face invitation to attend. Three stakeholders from the Davis RO and one insurance industry representative did attend the listening session in Davis.

Those attending the listening session stated the SCD date did coincide with a logical date in the nursery crop industry calendar for the region. The RO in Davis indicated it encouraged producers to sign up for the crop insurance beginning coverage (by submission of the required documentation) in October, which then captures the most risky period for nursery crops in the area. In other words, they suggested required documentation not be submitted until September. Finally, producers and agents suggested contract pricing be made available for plants produced. This approach to modifying the length of the insurance period is creative. It does not appear to exceed the limits imposed by the provisions of the nursery crop policy. Establishing this as a recommended approach is an administrative decision. However, the Contractor notes such an approach would address some of the nearly universal concerns producers expressed in disparate regions about the SCD; it may be appropriate to codify the practice in the Insurance Standards.

An area of concern in the region is the range of nursery crops the producers would like to insure; the producers would prefer to insure specific varieties that are more risky rather than being required to insure all varieties in a type at the same level. In effect they are asking either for separate policies for differing crops (at a finer division than the current types) or a coverage approach similar to that available for producers of some major crops under optional units.

Stakeholder Introduced Concepts

The RO stakeholders suggested with a revenue type of insurance program two problems may occur. First, they believe over-reporting of historical revenue would be common and consequently more subsidies would be paid by the government than should be the case. Second, with wildfires destroying entire nurseries in California (i.e., they are burned to the ground), records to document lost inventory are often destroyed along with the inventory. Insurance that accounts for this missing documentation (or assures that all necessary documentation is in the hands of the insurance company) would better serve the region. An annual pre-attachment inspection could assuage some of these concerns, but would further increase the administrative and overhead costs associated with the program.

Wilsonville, Oregon

Planning for the Oregon listening session was facilitated by discussions with the Oregon Association of Nurseries. The listening session was held in the association conference room. The Washington State Nursery and was also informed of the Oregon listening sessions. The Contractor informed the Spokane RO about the listening session, and the RO volunteered to inform AIPs, producers, and other contacts about the listening session. Oregon State University extension personnel were notified about the upcoming listening session. The Contractor informed the AIPs and insurance agent contacts and requested the announcement of the session be dispersed. The Capital Press, a well-distributed agriculture publication, was provided with a press release for distribution in the paper. The Oregon listening session was attended by nine people: three producers, four insurance industry stakeholders, one employee of the nursery association, and the nursery expert from the Spokane RO. The family of one of the insurance industry representatives also maintained and managed a nursery.

The producers indicated their inventories change daily, which limits their ability to accurately report on inventory. Producers indicated a better definition of what qualifies as a loss would be appreciated, as damaged plants seem to be considered saleable by the insurance industry even

when they can not be rehabilitated. The stakeholders indicated following 2008 losses from a cold to hot to cold temperature cycle, Emergency Disaster payments were received earlier than the crop insurance indemnities. This timing of payments was a frustration because they expected the crop insurance indemnities would be paid out faster than a disaster program payment. A producer stakeholder whose nursery produced plants that were 3 to 8 years old stated their inventories change daily; in order to maintain and manage the insurance program inventory they need a full-time employee. To illustrate the complexity of measuring a nursery inventory, one producer recounted how change in size require “potting-up.” This changes the FMV of the plant and may not reflect the inventory projections that were used to establish the PIVR. The producers suggested they know the extent of the damage to their crops within four months of a loss occurrence. Producers stated that February, March, and April are the peak shipping periods from Oregon nurseries. The current sales closing date consequently requires an inventory and inspection at an ebb in the total inventory level. Producers indicated a September 1 SCD would be more appropriate. The insurance industry and producer stakeholders indicated problems with DataScope. The insurance industry stakeholders indicated agents usually enter the information into DataScope, and they indicated this process is tedious. They would like DataScope to communicate with other software programs, even programs as simple as MS Excel, since most inventory programs can generate comma separated value (CSV) files that can be edited in MS Excel. The stakeholders also indicated DataScope doesn’t include certain types of plants that are commonly grown in the Pacific Northwest. Furthermore, a producer suggested the lumber markets are closely tied to the nursery industry due to the link of both to house construction. It was a general consensus among the stakeholders that the nursery crop insurance program should be adapted to better reflect characteristics of the nursery industry.

Stakeholder Introduced Concepts

Four insurance concepts were introduced by stakeholders during the Wilsonville listening session. First, the stakeholders suggesting treating nursery insurance similar to a building insurance with a value assigned by declaration and a co-insurance as well as a (smaller) deductible. Again the stakeholders acknowledged the danger producers would over-insure, but stated the underwriting standards could address this issue using producer documented purchases and sales. An insurance industry stakeholder suggested to model insurance similar to Livestock Gross Margin, in which the insured chooses a value to insure (and consequently a deductible). As the level of deductible increases, the premium subsidy increases. However, this approach would not get away from the requirement for substantial and detailed inventories. There was a suggestion that separate policies be developed for different regions to improve the specificity and applicability of the program, or a single base policy and with a variety of regional endorsements. Finally, the stakeholders discussed an adjusted gross revenue policy specifically designed for nursery.

Richland, Washington

The Richland, Washington listening session was added at very limited cost to the government in response to a suggestion from one of the AIPs. The Oregon Association of Nurseries and the Washington State Nursery and Landscape Association were informed of both the session. The Contractor informed the COTR and the Spokane RO of the listening session location and timing. Washington State University extension personnel were notified about the upcoming listening session. The Contractor informed AIPs and requested the announcement to be transmitted to

agents. The Capital Press was provided a press release for distribution in the paper. The Richland listening session was attended by three people: a producer, an insurance agent (formerly a producer) who sells and services numerous nursery policies, and a nursery expert from the Spokane RO.

The producer and agent, both of whom are heavily involved with grafted nursery production, indicated they would prefer a unit structure defined by age category since risks are different for nursery plants of different ages. The agent indicated DataScape is a daunting program, requires too much time, and is complicated without benefit of the providing much additional utility. The agent would like to see DataScape streamlined. Issues were raised concerning the need to cut trees to a size too small for insurance in order to fit into the planting machinery. The stakeholders would like to be able to insure both the rootstock and the grafted plants. The producer mentioned their nursery contracts with other companies, often to produce expensive/patented¹⁸ varieties not listed on the eligible plant list except generically. The stakeholders would prefer to have this contracted production insurable at an appropriate liability level. The stakeholders discussed Nursery Grower's Price Endorsement as a possible vehicle for addressing the producer's desire.

Stakeholder Introduced Concepts

The stakeholders at the Richland, Washington listening session introduced four insurance concepts. First, the agent suggested using an ARH program with the nursery industry. It appeared to the agent the nursery industry did not suffer from as many production losses as revenue losses. The perishable ARH crops face similar issues as nursery crops. Quality is a big factor in the revenue stream. Second, the stakeholders suggested having regional unit structure definitions, perhaps in the special provisions. An example of this would be a special provisions statement saying, "...in the Pacific Northwest there are two different stages nursery production for commercial fruits crops and each can be insured as a basic unit, while in the Southeast a complete turn-over in the nursery inventory might be treated as a basic unit." A third suggestion focused on allowing PIVR inventory adjustments down as well as up. Finally, the stakeholders and Contractor discussed contracted production (and contract prices) being treated as the equivalent to catalog prices. Since the plants may be owned by the person holding the patent rather than by the grower, there are alternatives that need to be explored within the existing crop insurance structure.

Tyler, Texas

The Texas listening session was scheduled after consultation with the Texas Nursery and Landscape Association as well as the Northeast Texas Nursery Growers Association. The executive director of the Northeast Texas Nursery Growers Association suggested the Tyler location. Both associations informed members of the session. Texas A&M University extension personnel in the area were notified about the upcoming listening session and asked to communicate information about the session to interested stakeholders. The Contractor informed the COTR and the Oklahoma City RO about the listening session. The Contractor informed AIPs and requested the announcement be distributed to agencies serving the area, particularly to agencies with substantial involvement in Nursery Program sales. The Tyler listening session was

¹⁸ The specific company limits the rights to grow these expensive crops. This company also markets the trees.

attended by ten people: five producers, one insurance industry representative, two extension agents, and two RMA representatives from the Kansas City offices (including the Contracting Officer's Technical Representative (COTR) for this contract). Following the session the Contractor and the RMA representatives toured a large nursery with both field-grown and containerized production.

The producer stakeholders indicated a problem with the 10 percent over-reporting factor currently in place, and stated the factor does not accurately represent the industry practices (i.e., their inventory ranges to about 20 percent over and under the mean). The producers indicated using DataScape is tedious and "the government is causing the nursery to do their inventory twice." The producer stakeholders also indicated that within DataScape they had issues with certain plant types and prices that were excluded. DataScape was mentioned as both a time drain and a challenge to use by the producers and the insurance industry representative. In addition, the stakeholders indicated the DataScape prices do not accurately reflect the current wholesale market prices. A producer stakeholder suggested they would prefer single peril weather insurance rather than multiple peril crop insurance. The producer stakeholders raised the issue of misinformation provided to them by their crop insurance agents. The RMA staff and Contractor tried to understand the issue and provide direction about how a producer could obtain correct information from the RMA website. The producers and insurance agent indicated their preference for the insurance to not require rehabilitation of trees the nursery industry would consider non-salvageable. The producers indicated a desire to have insurance for harvested nursery production.

Stakeholder Introduced Concepts

Stakeholders introduced two insurance concepts in the Tyler listening session. The first was a suggestion that an under-reporting error be treated like under-insuring a home. Any loss under a policy where the PIVR understated the inventory would require a co-pay as well as a deductible with the co-pay equal to (the loss times one minus the deductible) times (one minus the FMV A divided by the PIVR value).¹⁹ The second was to develop separate policies to address groups of similar producers (i.e., similar location, similar crops, similar production and business cycles).

Conclusions

In spite of regional differences in the plants produced and management practices, stakeholders providing input to the Contractor consistently addressed several concerns with the current Nursery Program. First, the current program is perceived as complex, and because of this complexity the program is difficult for all stakeholders to understand. Second, the calendar of the insurance program does not seem to align with the nursery crop industry calendar in any region. The SCD was especially identified as coming at a difficult time for the industry. Since the sign-up process involves so much more paperwork than typical crop insurance sign-up, the misalignment of the insurance year and the business calendar were identified as a particular problem.

CAT was identified as a problem by a number of producers and agents. While the issues with CAT varied, it was surprising to hear a number of stakeholders suggest doing away with that

¹⁹ Loss * (1 - Deductible) * {1 - (FMV_a / PIVR)}

coverage approach. Less surprising were the comments about the knowledge of the loss adjusters concerning the nursery industry. The complexity and diversity of the industry make it particularly challenging for an adjuster to have appropriate expertise in every production region. Finally, DataScape was identified as a major issue. The time required to maintain and enter a DataScape inventory was especially noted; stakeholders indicated, at a minimum, DataScape should be configured to communicate with other inventory software programs. In some sectors of the nursery industry, it is not a good assumption that the inventory from one year is a useful basis for drafting the inventory for the next year. Furthermore, the variability of inventory within a year is enormous. Consequently, from the perspective of the nursery operation, the inventory basis of the insurance does not seem reasonable.

It is difficult to imagine a concern that is more fundamental to an insurance program than a lack of confidence in its basic conceptual basis. While RMA has backed away from dollar-programs and their *ex post hoc* loss adjustment process for most crops, elements of the same conceptual issues are manifest throughout the Nursery Program. Producers would clearly like to see the Nursery Program broken up into a number of regional and crop-type programs that address the specific needs of each. The Contractor believes this could be done under a broad common program framework, to facilitate reasonable administration, but given the scope and sheer number of new customized options, it is unlikely these alternatives could be rolled out for a large number of nursery growers expeditiously. The stakeholder input provides both a number of useful suggestions for band-aiding the current program and the fodder for many ideas for fundamental changes.

SECTION IV. INDUSTRY RESEARCH ANALYSIS

This section of the evaluation report addresses the requirement that

“The fourth section of the report shall contain the findings of the industry research analysis. A primary focus of the discussion should be structural changes in the industry and their potential impact on the crop insurance program under review.”²⁰

As noted previously, the nursery segment of the U.S. agricultural economy is extraordinarily complex. Activities in the segment include propagation and sale of commercial, ornamental (i.e., patio and houseplant), and landscape plants. Propagation can be as simple as planting seed and maintaining the resulting seedlings or as complex as the sterile harvest of a meristem,²¹ culturing the meristem in a laboratory, stimulating shoot development in culture, harvesting shoots from the cultured tissues, rooting the shoots, planting out the rooted shoots, and maintaining the plants until they are marketed.

Nursery operations are performed to support wholesale and retail sales (i.e., some producers sell directly to retail markets including in storefronts, via the internet, from roadside stands, and through telephone sales). Many nursery operations are vertically integrated, including production agriculture, processing activities, marketing, landscaping, and transportation in their business activities. Others are highly specialized and are involved in production of a limited number of species in a limited number of sizes. This latter pattern is especially prevalent with operations producing tray “liners.” It is also true of operations selling primarily to retail businesses and operations selling grafted fruit trees to commercial fruit producers.

Plants sold by producers in the nursery segment range in size from seedlings less than half an inch tall grown in liners to trees whose caliper and size allow the creation of instant landscapes. Some nursery crops are evergreen; others are deciduous. Nursery plants include monocots (grasses and palms) and dicots (broad-leafed plants); conifers, cycads, ferns, and flowering plants; and annuals, biennials, and perennials. Some nurseries produce a single species (though often more than one variety); others produce dozens of species and more than 100 varieties.

The incredible variety of the nursery plants insurable under the Nursery Program is evident in the volume of the eight regional Eligible Plant Lists, which range in length from 64 to 1,084 pages (Table 1). In the solicitation for this contract, RMA indicated the 2010 EPL PPS listed 25,500 plants.²² While many nurseries produce relatively small numbers of species, when varieties and sizes are also considered in their production diversity, even a one-acre operation might be characterized by hundreds of different inventory entries for the purposes of the Nursery Program.

²⁰ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 12.

²¹ The growing tip of a stem or less often a root.

²² Solicitation: Attachment – Operation of Current Nursery Crop Insurance Program, page 1.

Table 1. Length of Nursery Program Eligible Plant Lists by Region

States	Pages
Alaska	64
Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, South Carolina, and Tennessee	1,084
Arizona, California, Nevada, and Utah	1,070
Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin, and Wyoming	880
Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia	1,004
Hawaii.	1,070
Idaho, Oregon, and Washington	520
New Mexico, Oklahoma, and Texas	1,076

Source: The Contractor's Research Department.

The 2007 Census of Agriculture reported almost \$144 billion of crops (including nursery and greenhouse crops) sold in the United States that year.²³ Of that amount, more than \$16.6 billion was attributed to nursery, greenhouse, floriculture, and sod production²⁴ on 50,784 operations. The Nursery Program specifically excludes certain categories of production from the Census "Nursery, Greenhouse, Floriculture, and Sod" categories. Production of these excluded crops amounts to almost \$4 billion (Table 2).

Table 2. Operations Excluded from the Nursery Program and their Sales in 2007

Crop	Farms			Sales
	Protected	Open	With Sales	
Bulbs, corms, rhizomes, and tubers-dry	247	717	896	90,304,021
Cut flowers and cut florist greens	1,316	4,343	5,056	711,369,050
Flower seeds	191	320	491	35,995,358
Greenhouse fruits and berries	249	n/a	244	11,422,793
Greenhouse vegetables and herbs	4075	n/a	4056	553,034,688
Mushrooms and mushroom spawn	>197	n/a	>195	1,019,214,843
Sod	n/a	1881	1,878	1,353,422,529
Vegetable seeds	361	805	1097	99,694,490
Total				3,874,457,772

Source: The Contractor's Research Department after USDA, NASS, 2009, Census of Agriculture, Table 37, page 44.

²³ USDA, NASS, 2009, Census of Agriculture, Table 1, page 7.

²⁴ This figure does not include production values for short rotation woody crops and Christmas trees, which are included in some census reports of nursery, greenhouse, floriculture, and sod crops.

The Nursery Program also excludes operations that do not have at least 50 percent of their gross income from sales into wholesale nursery crop markets. Data on the wholesale/retail breakdown of nursery crop sales are not generally available in any form that would allow a precise assessment of the sales from nursery crop production eligible for insurance under the Nursery Program. However, assuming operations with sales primarily into retail markets account for approximately ten percent of the remaining sales volume, then the potentially insurable liability in Nursery Program operations would be approximately \$11.4 billion; assuming operations with sales primarily into retail markets account for approximately half the remaining sales volume, the potentially insurable liability in Nursery Program operations would be approximately \$6.3 billion. The Contractor believes the insurable liability falls somewhere within this range.

The 2009 Census of Horticultural Specialties (2009 Horticulture Census) was a follow-up to the 2007 Census of Agriculture and surveyed all operations that reported horticultural crop sales of \$10,000 or more on the 2007 Census. The Horticulture Census addresses crops including aquatic plants, bedding plants, Christmas trees, commercial vegetable transplants, cut cultivated florist greens, cut flowers, dry bulbs, flower seeds, greenhouse-produced vegetables, ground covers, potted flowering plants, propagation materials, short-rotation woody crops (e.g., pulpwood crops), shrubs, sod, trees, (including fruit and nut trees), unfinished or pre-finished plants, vegetable seeds, vines, and other nursery or greenhouse plants. For the purposes of crop insurance, nursery crops exclude plants grown to produce Christmas trees, cut flowers, cut greens, dry bulbs, fruits (as opposed to fruit plants), seeds, short-rotation woody crops, and vegetables (as opposed to vegetable plants), but include the horticultural categories in addition to the limited grouping the Horticulture Census categorizes as “nursery crops.” The additional horticultural categories include, at a minimum, annual bedding plants, potted herbaceous perennials, and potted flowering plants.

In 2009, there were 3,623 producers with wholesale sales of annual bedding plants (including vegetable plants). Approximately half these operations sell exclusively into the wholesale markets. The wholesale sales of all annual bedding plants were almost \$1.8 billion, with 89 percent of sales in flowering plants for landscaping and the remainder from vegetables for home gardening.²⁵ Wholesale sales of bedding plants included approximately 66 million flats of landscape flowering plants²⁶ and 8 million flats of vegetable plants.²⁷ Wholesale sales of potted annual plants for planting out included approximately 500 million plants, 71 percent of which were in pots less than 5 inches in diameter.²⁸ Consequently, most of the annual plants insurable under the nursery program are young and in relatively small containers.

In 2009, there were 2,975 producers with wholesale sales of potted herbaceous perennials. Some of these producers also produce the bedding plants. The census data is not reported in a manner that allows separation of the producer population into individuals with single production/marketing strategies and those who pursue multiple strategies. The wholesale sales from these perennial plants were almost \$700 million. More than 55 percent of the operations

²⁵ USDA, NASS, 2010, 2007 Census of Agriculture Census of Horticultural Specialties (AC-07-SS-3), Table 4. Annual Bedding/Garden Plants Sold – Total: 2009.

²⁶ Ibid., Table 5. Annual Bedding/Garden Plants Sold – Flats: 2009.

²⁷ Ibid., Table 5. Annual Bedding/Garden Plants Sold – Flats: 2009.

²⁸ Ibid., Table 6. Annual Bedding/Garden Plants Sold – Pots: 2009.

producing wholesale potted herbaceous perennials sell exclusively in wholesale markets.²⁹ More than a third of the potted herbaceous perennial plants produced are chrysanthemums, many of which are sold in very small pots (just a few inches in diameter). The majority³⁰ of non-chrysanthemum perennial potted plants are sold in one gallon containers.³¹

In 2009, there were 2,190 operations producing potted flowering plants with wholesale sales of almost \$780 million³² and 1,473 operations producing potted foliage plants with wholesale sales of almost \$500 million.³³ Data in the Horticulture Census suggests some of these operations specialize in production of a very limited number of species and a limited range of pot sizes, while others produce a wide range of species in a variety of pot sizes. There were also 975 operations producing cuttings, plug seedlings, liners, tissue cultured plantlets, and prefinished plants for the wholesale markets. Of these, 905 sold only to wholesale customers, while 70 had both wholesale and retail sales.³⁴

Regarding the production specifically addressed as Nursery Stock (i.e., woody trees and shrubs for landscape planting, ornamental grasses, and bareroot herbaceous perennials) in the Horticulture Census, there were 8,441 operations with production in excess of \$3.85 billion.³⁵ This includes plants sold bareroot, balled and burlapped, or in containers. Since these three marketing practices are included in the Horticultural Census data for “Nursery Stock,”³⁶ values for container grown and field grown plants are combined. Production of “Nursery Stock,” is reported in the Horticulture Census for every state. The total production is equal to approximately 125 percent of the liability insured under the Nursery Program in 2009. However, this comparison does not accurately reflect the level of participation in the Nursery Program since a portion of the wholesale production of annuals (\$1.8 billion), containerized herbaceous perennials (\$0.7 billion), potted foliage and flowering plants (\$1.28 billion), and planting stock (\$1.54 billion of , plug seedlings, liners, tissue cultured plantlets, and prefinished plants) are also insurable under the Nursery Program.

Plants grown on operations with less than 50 percent of their sales into wholesale markets as defined by the Nursery Crop Provisions are also not insurable under the Nursery Program. Consequently comparing populations and values between the Horticulture Census and the Nursery Program is challenging at best and impossible in the worst cases. Nonetheless, there is much useful information regarding the nursery industry (for the purposes of crop insurance) that can be gleaned from the Horticulture Census.

Nursery crops are grown in containers and in the ground (field-grown production). Wholesale nursery crops are sold to big box stores, brokers, contractors, garden centers, landscapers, nurseries, and re-wholesalers.

²⁹Op. cit., Table 8. Annual Bedding/Garden Plants Sold – Total: 2009.

³⁰ 53 percent with percentages ranging from 38 percent to 88 percent by plant grouping.

³¹ Op. cit., Table 8. Potted Herbaceous Perennial Plants Sold: 2009.

³² Ibid., Table 9. Potted Flowering Plants for Indoor or Patio Use Sold: 2009.

³³ Ibid., Table 10. Foliage Plants for Indoor or Patio Use Sold – Total: 2009.

³⁴ Ibid., Table 26. Cuttings, Plug Seedlings, Liners, Tissue Cultured Plantlets, and Prefinished Plants Sold: 2009

³⁵ Ibid., Table 18. Nursery Stock Sold; 2009.

³⁶ The Horticultural Census uses the term “stock” to mean production of plants. The same term is defined in the Nursery Program as plants from which buds, foliage, or flowers are derived.

Field-grown Production

Field-grown nursery production includes bare root and ball and burlap harvest practices. Bare root production involves harvest after the plant has entered dormancy, removal of the soil from the root mass, and often a management practice to limit desiccation of the root mass. Storage options for bare root stock includes cold storage, packing the roots in a moist medium (e.g., moss, paper etc.), and treatment with anti-desiccants (e.g., dips, gels, and clay). Dormant groundcovers, perennial grasses, and broadleaf perennials (e.g., deciduous shrubs and trees) can all be managed as bare root stock. Small conifers for Christmas tree planting and reforestation are also managed as bare root stock. The major advantage of bare root plants is their light weight and relatively low cost.

Shrubs and trees that are dug with a portion of their root mass covered with soil are identified in the industry as balled-and-burlapped (B&B). B&B is a suitable harvest mechanism for evergreen and deciduous plants, conifers and flowering plants, and woody trees and palms. Large trees can be moved using this approach. One producer talked of moving trees with 15 ton root balls. Most B&B harvests are done while the plants are dormant. Hand harvesting requires trained staff, while mechanical harvesting requires specialized machinery.

Drainage is essential for field-grown production. Soil types can vary from sandy soils (better for bare root production) to silty-clay loams (better for B&B production). Soils can be improved by the addition of organic matter. Soil pH for most nursery production should be from 6 to 6.5, although acid-loving plants (e.g., azaleas, cane berries, rhododendrons, and most conifers) require pH between 5 and 6. Pulverized, granular, pelletized and hydrated lime; gypsum (calcium sulfate dihydrate), and acidifiers (aluminum sulfate and elemental sulfur) can be used to adjust the pH. Soils P, K, and micronutrient content can be tested and soil amendments can correct deficiencies. Pesticide residues can limit growth of nursery stock.

For soil with a low organic content, incorporation of organic matter or production of a green manure crop is beneficial. Perennial weeds are controlled with fumigation or systemic herbicides. Prior to planting, the soil is worked. Catching irrigation and rain water and recycling excess water may require construction of a drainage system and holding ponds. Fertilizers containing phosphorus, potassium, and micronutrients (as required) are incorporated prior to planting. Once general bed preparation and drainage grading is complete, the soil may require sterilization. Most planting is done in the spring, with limited fall planting for some crops. If irrigation will use buried lines, these should be installed before the container beds are constructed. On some sites, cover crops help to control weeds and erosion.

Nitrogen fertilizers are applied for all field production as a pre-plant treatment, banded or broadcast post-planting, or as part of the irrigation supply. Most fertilizers are applied two or more times a year. Soil and leaf nutrient analysis is essential. Application rates vary, but often range between 50 pounds and 200 pounds nitrogen per acre per year.

Most field production requires at least some supplemental irrigation. Field irrigation systems include either portable overhead or drip irrigation systems. After planting, weeds are generally controlled with cultivation, herbicides, mulching, mowing, and/or weeding by hand.

Other considerations in field production are likely to include acclimation of planting liners, harvesting procedures/equipment, holding procedures, pruning, pest control (insect, disease, and wildlife), shipping procedures, and staking

Container Production

Container nursery production includes growing nursery plants in liners, pots, or bags. Generally, metal and clay pots that were used historically have been replaced by blow-molded or injection-molded plastic containers in sizes up to several hundred gallons. Some production occurs in smaller fiber containers (pressed paper and/or peat). Except for production of annuals and chrysanthemums, the majority of container production occurs in 1, 3, 5, 7, 10, 15, and 25 gallon containers. Substantial improvements have occurred in the manufacture of plastic containers, including incorporation of ridges, holes, and baffles to control root growth. A variety of containers are available, including soft-walled polymer bags with gusseted bottoms, low profile bottomless containers for production on plastic or woven ground cloth, double wall container systems (pot-in-pot and pot-in-tray (e.g., the 160 square foot Cellugro® Systems that can hold pots as large as seven gallons), and field-grown fabric bags made from porous synthetic fabrics.

Site selection is less critical for container production. A container bed can be built on any soil type as long as drainage is possible because of natural slope or grading. Container production areas include the production beds, the irrigation/pond system, and the roads. Beds are often covered with impervious barriers such as black plastic or with clam shells, gravel, mulch, or woven nursery cloth. Regardless of the surface, bed drainage is an essential management practice. Permanently set irrigation allows less flexibility in bed layout than drip irrigation. Catching irrigation and rain water and recycling excess water may require construction of a drainage system and holding ponds. Some beds have incorporated drainage systems.

Container-grown plants require more frequent fertilization than field-grown production. Very few nutrients are available from the production medium. Slow-release, granular, or liquid fertilizer generally supply nitrogen, phosphorus, and potassium as well as micronutrients. The slow-release and granular fertilizers can be incorporated into the potting medium or the surface of the medium. Most granular fertilizers do not last an entire growing season and need to be reapplied. Slow-release fertilizers have largely replaced traditional granular fertilizers in nursery production. These products package nutrients in resin or polymer capsules. The capsule is engineered to control the release of nutrients with release times as long as a year. Liquid fertilizers are generally applied with the irrigation water.

Irrigation is required for container production, with daily irrigation during the growing season in many locations. Container bed irrigation can be supplied overhead, by drip systems, or by subsurface or capillary systems. A relatively new approach for overhead involves application of smaller pulses of water. Pulsed irrigation uses less water and leaches less fertilizer, but requires a more sophisticated control system. In the United States, capillary systems are used primarily for greenhouse rather than open bed production. Overhead irrigation uses the greatest volume of water while capillary systems use the least.

Due to the close plant spacing, weeds are more difficult to control in container production. Hand weeding, herbicides, and substrate weed barriers are common control approaches. Other

considerations in container production are likely to include acclimation of planting liners, cold protection, container type and size, holding procedures, planting medium, pruning, pest control (insect, disease, and wildlife), shipping procedures, sun shading, staking, and wind protection.

Production of Grafted Material

Grafting is a horticultural practice wherein tissues from one plant are joined to those of another. Grafting is most commonly used in asexual propagation of commercially grown plants for horticultural and agricultural uses. For most grafts, one plant (the rootstock) is selected for the characteristics (e.g., rapid growth, disease resistance) of its roots. The other plant (the scion) is selected for its stems, leaves, flowers, or fruits.

Most large-scale production of grafted material is accomplished with bud grafts. In bud grafting, a dormant side bud (also called an eye) from one plant is grafted onto the stem of a plant being used for the rootstock. For successful grafting to occur, the vascular cambium tissues of the rootstock and scion must be placed in contact. A graft union forms as the two cambia produce new vascular tissues.

Depending on locale, species, and available human resources, bud grafts are made relatively early in or near the end of the growing season. A dormant bud is inserted into a shallow cut through the bark of the rootstock plant. There are many styles of bud grafting depending on the cut of the bud and method used to fit the bud to the rootstock; shield budding (describing the shape of the bud cut) is the most commonly used method. The tissues of the rootstock and scion must be kept alive until the graft union has formed, usually after a few weeks. The bud is generally bound in place to facilitate the formation of the graft. The wound may be sealed using the binding tape or a chemical seal to limit drying. When the graft union has formed, the scion is encouraged to grow by pruning off the stem of the rootstock plant just above the grafted bud.

Production of grafted material can be done in field or using containerized rootstock. Field-grown rootstocks are used for the largest scale production operations. The grafted plants are generally grown for a year (or less often for two) following the grafting. In these large-scale operations, most harvests from the fields are of bare root plants.

Other considerations for grafted production are likely to include maintaining the dormancy of the scion stock until the grafts are made and (because the graft union is weaker than a typical stem) harvesting and holding procedures. Otherwise, grafted production is the same as the container or field-grown production described previously.

It is interesting to note the procedures used to produce grafted plants exclude some of these plants from coverage for their entire life and all the plants for some part of their life. The Nursery Crop Provisions specifically exclude stock plants “grown solely for harvest of buds” (08-073 (Rev. 10-06), section 8(i)). Therefore, the plants from which the scion is harvested, perhaps the most valuable asset in a nursery operation that propagates grafted plants, are not insurable. The rootstock is generally uninsurable in its earliest stages because of size limitation. Finally, when the grafted plants are pruned to stimulate growth of the scion, they once again fall outside the size categories that are insurable.

Industry Changes

Nursery production is an important sector of U.S. agricultural economy. Nursery crop production generally requires substantial inputs, particularly in the form of labor. There are some elements that have hardly changed in the industry in one hundred years. This is particularly true of activities like pruning and grafting that require a practiced eye and a steady hand. Another pattern that has seen little change is the constant search for new varieties. New varieties generally command a premium. Consequently, a Nursery Program that insures new varieties as generic plants (with the lowest EPL PPS prices) penalizes the producers who are at the forefront of the industry.

Some nursery production activities are mechanized. The operative word in this statement is “some.” Inasmuch as there are innumerable ways a nursery business can be structured, there is no one correct way to mechanize a nursery operation. In the course of this evaluation, the Contractor saw machines for planting, potting, repotting, watering, fertilizing, protecting, harvesting, packing, loading, and shipping. Many of the devices used to mechanize nursery production were one-off and custom-made. Consequently, the costs of mechanization are high. Furthermore, mechanization with customized machines limits the ability to change crops from year to year. The Contractor saw only one operation where mechanization was maximized. On most operations, limited mechanization addresses a particular production issue the producer has identified.

The Contractor visited both large (hundreds of acres) and small (half acre) nursery operations. As described previously, all the containerized operations had irrigation systems. Depending on the locale, appropriate protection was supplied. Except for field-grown operations, no producer indicated a commitment to species that had been produced historically. Decisions about “planting” are driven by the markets.

The most marked change the Contractor noticed in the industry was the computerization of nursery production functions. At the minimum, this included maintaining inventories on spreadsheet software. Nursery software programs are generally available, although the level of use is difficult to assess from the sampling available through listening sessions. In the extreme, the computerization of a nursery operation included inventory control (via chips in the flats), control of lighting and shade cloth deployment, control of heat, soil moisture monitoring, and control of the chemical composition of the “fertigation” water. Regardless of the extent of the computerization, there is a tendency to move from long-term contractual relationships to “just-in-time” ordering and delivery. The customer has more input into the particular species, varieties, and sizes being produced, resulting in a shift in the balance of some decisions from the producer to the customer. A consequence of this shift is that producers may be producing new species more often and are certainly producing new varieties more often than was the case ten years ago. The Contractor did not identify any industry changes that would in turn drive changes to the Nursery Program. However, the Contractor believes RMA should explore the possibility of insuring grafted production as an additional practice.

SECTION V. PROGRAM EVALUATION TOOL FINDINGS

This section of the evaluation report addresses the requirement that the

“The fifth section of the report shall contain a thorough discussion of the findings from use of the Program Evaluation Tool. The Program Evaluation Tool is designed to address basic insurability questions, such as perceived risk, availability of alternative risk sharing mechanisms, etc. The tool should be completed for each region of production, based on information obtained from the listening sessions, RMA Regional Offices and Compliance Offices, analysis of the program, and other sources. A copy of the completed diagnostic form for each production/pilot region should be included in an appendix to the report.”³⁷

The Contractor completed all questions applicable to the crop, region, and plan of insurance based on the information obtained from listening sessions and the Contractor’s research and evaluation activities. The Contractor gathered this information in accordance with the requirements imposed by the Paperwork Reduction Act. Copies of the completed Program Evaluation Diagnostic Questionnaire for each crop are provided to the Government in Appendix A.

A review of the program evaluation tool (i.e., diagnostic questionnaire) shows that the most notable element of the nursery program is complexity. The crop is complex. The producer population is widely scattered and characterized by an extreme range of financial resources and sophistication. The risks to the crops are limited, but occasional major losses have a substantial effect on the potential survival of individual operations. The marketing structure is complex and no single economic benchmark is tied to the industries performance (although housing starts affect portions of the industry). This complexity is reflected in the structure and operation of the Nursery Program. Everyone who expressed an opinion, with the exception of one agent, would like to see the policy simplified.

Background

The Nursery Program is available to producers of eligible nursery crops in every state, provided the operation meets certain criteria. Currently plants produced under the field-grown and container practices are insurable. Production of various sizes, including annuals, biennials, herbaceous perennials, and woody species in a wide range of types is insurable, but certain minimum size limitations by plant species or variety are imposed. Furthermore, all the eligible nursery plants in a county grown by a producer under an insured practice must be insured. An eligible plant must be on the published Eligible Plant List, grown in an appropriate medium, and grown in a nursery whose gross income comes primarily (i.e., >50 percent) from the wholesale marketing of nursery plants. Certain practices such as planting different genera, species, subspecies, varieties, or cultivars in a single container; growing an eligible plant for sale as Christmas trees, for use as stock plants, or as a source of fruit, nuts, flowers, or foliage cannot be insured. Underwriting requires a nursery be inspected and approved prior to the initial coverage

Annuals, biennials, and some perennials may be planted and/or harvested multiple times during a crop production year; others annuals, biennials, and perennials are planted and/or harvested just

³⁷ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 12.

once a year. Each operation is unique. The capital stock may be held by a producer for just a few weeks or may be maintained for decades.

The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. For container plants, soil mixes may be proprietary and the soil is sold with the production. Some perennial nursery plants are treated like annual plants, either: a) grown for a year and then marketed, or b) purchased as liners or container plants and repotted and grown for a year.

Field-grown plants are grown in single or double rows, with or without irrigation. Growth is supported by frequent fertilization and pest management. Turnover in many cases is influenced as much by markets as by management practices. For B&B plants, the root ball and associated soil is dug, wrapped, and tied off. Eventually if plants cannot be sold they become too large for the market and are destroyed.

For most species and varieties, in most locations, events resulting in losses of capital stock are uncommon. However, losses may not involve the loss of an entire plant, but instead loss of portions of the plants. Most such losses are to extreme weather. The effect of losses of portions of a plant is similar to the effect of losing whole plants in the short run (the producer has no production to sell); recovery is sometimes possible, depending on the nature of the damage. However, the costs of rehabilitation over time may exceed the costs of replacement. Consequently, following a loss, the manager of a nursery faces a dilemma about balancing the three values: rehabilitation costs, replacement costs, and salvage value (i.e., the value of a plant sold immediately at a deep discount if any such value remains). Furthermore, there are likely to be two competing options for replacement: purchase and onsite production of the replacement plant. Obviously the decisions about re-establishing an inventory are complex and involve elements of production agriculture, finance, and economics. Minimal times for recovery of a nursery operation that has suffered a major loss are likely to be close to a year. For operations with production measured in decades, recovery may be nearly impossible.

In nearly every region of the country, nurseries grow plants from seed, from cuttings, and from liners. Meristem cloning is also used for some specialized production (patented varieties, orchids, bromeliads, etc.). Nurseries also buy larger plants produced by these three processes, so one nursery's production becomes another nursery's liner. Nurseries producing plants in 200 gallon pots may use plants in 30 gallon pots as liners. Some of the liners used by nurseries are locally produced; some come from as far away as China. Markets determine the type and practice, however, most producers have garnered a particular market niche and work to maximize their share within the niche.

Marketing

The marketing channels for nursery production vary by operation and variety. Many producers in the region produce limited types maintained under one practice. Depending on the market, production may be sold to a single buyer or multiple buyers. Prices are generally established prior to harvest and in many cases prior to planting. Prices are influenced by markets,

relationships between the buyer and seller, varietal differences, quality judgments by the buyer, etc., more than by supply. The windows for sales of most of these nursery crops are very small. The costs of rehabilitation relative to the value of the crop generally preclude most rehabilitation. Some production is initiated under contract.

Insurable Liability

The insurance is an inventory-based program not a yield-based program. There is no yield of nursery production. The insured crop under the program is the nursery inventory. The inventory values (i.e., individual plant prices) are established at the onset of the insurance period. While this inventory and its value continually change (a major source of concern for a program with an inventory basis), producers have limited opportunities to update their inventory and the labor cost updating the DataScape inventory is high. The nursery production has no 'quality' in the sense a harvested crop has quality. Individual plants are either saleable or not saleable. Generally, off-grade production is not saleable.

Non-Insurance Risk Management Strategies

Producers use substantial non-insurance inputs to manage risks. These can include cold-mitigation equipment such as fans, heaters, overhead irrigation, as well as structures such as greenhouses, temporary enclosures, roofs, etc. The most sophisticated operations use monitoring systems to manage every aspect of the environment (temperature, humidity, mineral content of irrigation supply, etc.). The least sophisticated operations use human resources to mitigate the effects of perilous conditions (tipping containerized plants, moving the plants into warehouses, providing supplemental irrigation). The range of operations even in a single county can be substantial. From discussions with producers, it appears the least wealthy and wealthiest producers are less risk-averse and prepared to deal with the consequences of a significant loss of stock. In the case of the least wealthy producers, coping or seeking alternative revenue sources was the most commonly identified strategy, while the wealthiest producers have the resources to self-insure as a straight-forward financial strategy.

Other Available Insurance

It is possible to insure some perennial crop stock against fire through private contract, although such insurance is neither a standard product nor generally marketed. Private freeze insurance is available in some regions. Private named peril insurance for trees is available (<http://www.liveassetinsurance.com/index.htm>) but not in Florida and may be restricted in other states with substantial hurricane risks.

Producers

Producers are a highly variable group, both in their financial sophistication and in their fiscal resources. Some producers are geographically diversified within the region. This pattern is less characteristic of the smallest producers. This pattern is truer for producers whose primary income is from nursery crops, and the very largest producers.

The insurance is viewed favorably by lenders. The importance of agriculture in the regions where nursery crops are commonly produced, and the success of agricultural enterprises, have had a substantial effect on the general attitude of agricultural lenders. Of course, loan underwriting is enormously influenced by individual credit history as well as insurance-based

guarantees, and these credit histories are highly variable because of the diverse characteristics of the operations that produce nursery crops.

Risks

Weather is the major cause of loss under the Nursery Program, although some losses result from periodic outbreaks of insects that cannot be controlled. Producers with a greater variety of types and species within types are more likely to suffer losses from weather perils, but the effects of these losses on the financial condition of the operation are mitigated by the plant diversity. It is unusual to lose all the plants in a diversified operation. The only incidence of this described by stakeholders was a loss to wildfire wherein the operation was “burned to the ground.” Maintenance practices can influence the ability of the nursery crops to tolerate perils.

Perils that concern growers of nursery crops that are not covered by existing RMA-facilitated insurance products include labor shortage and varietal changes. Producers also perceive improper requirement for rehabilitation and requirement to insure rehabilitating stock as substantial risks to their financial success. None of these are insurable perils, but the issues related to rehabilitation requirements can be addressed by better aligning the rehabilitation requirements with normal business practices in the industry.

Moral Hazard

Since the indemnities are triggered by weather events, the losses that result from poor management practices are generally obvious. However, a weak nursery plant is less likely to survive a weather peril. Consequently, these multi-factoral losses are more difficult to attribute to a single cause. Due to the complexity of the nursery program, it is possible to game the system. While substantial underwriting standards limit the effectiveness of these games, the complexity of the operations and of the Nursery Program itself work against total elimination of abuse of the program. The opportunity for information asymmetry in such a complex framework is simply too great. However, while egregious incidents of abuse and even of fraud have been reported, program-wide the abuse does not appear to be substantively different from that occurring under other crop insurance programs.

Participation

Participation has been declining both in terms of insured liability and of policies earning premium. Many producers have dropped the insurance after suffering an unindemnified loss. There is no question the complexity of the Nursery Program has led insureds to believe they had coverage they did not have. There is some anecdotal evidence that agents are suggesting potential coverage that exceeds actual coverage. There is also evidence the loss adjustment process has not been perceived as fair to the insureds. These two issues have contributed substantially to a reduced demand for the insurance. While the provisions have been changed several times to address some of these issues, the issues have not been resolved to the satisfaction of producers. This program could be made more attractive to producers, which should result in increased participation, especially at buy-up levels.

SECTION VI. EVALUATION COMPONENT ANALYSIS

This section of the evaluation report addresses the requirement that:

“The sixth section of the report shall contain the findings of the Evaluation Components analysis. Themes developed while investigating these topics will be described as will the potential or probable impact upon the crop program’s performance. Data contained in this section must be highly summarized. Discussions shall focus on the meaning of the data and not upon describing the numbers. More detailed tables, maps and graphs will be included in an Appendix. All conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within and among the documents should be thoroughly documented.”³⁸

This section further incorporates a review of a sample of policy files documenting the implementation of the various requirements.

VI.A. Insurance Components

The components of the insurance addressed herein include the insurance dates, the crop provisions, three endorsements (the Peak Inventory Endorsement, the Rehabilitation Endorsement, and the Pilot Nursery Growers Price Endorsement), the Special Provisions of Insurance, the Nursery Crop Insurance Underwriting Guide, and the Nursery Loss Adjustment Standards Handbook. The nursery crop program is complex and seemingly convoluted. While the program appears to be well conceived and the components well articulated to address a complex industry, there are a number of contradictions and omissions within and among documents. If this program is continued, a substantial revision of the documents should be undertaken to provide greater clarity and eliminate conflicts.

Insurance Dates

Pursuant to the requirements of the Program Review Handbook, this section of the report provides a discussion of the applicability of the insurance dates for the Nursery Program. There are no “natural events” such as a determinable planting period for nursery as there are for most crops. Instead, the major risk periods provide a basis to define sales closing and other dates.

There are three major risk periods: the winter months, when freezing temperatures can damage the plant tissue; the early spring and summer months, when windstorms and hail can have devastating impacts; and the hurricane season between June and November.³⁹ A sales closing date that occurs when these perils are at a minimum is appropriate to avoid adverse selection and administrative issues.⁴⁰

In addition, the normal business cycle of nurseries should be considered in establishing a sales closing date. Some nurseries produce primarily indoor and tropical plants for exterior use in the southern United States. Others produce trees and shrubs for landscaping. Still other nurseries

³⁸ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 12.

³⁹ The official Atlantic Basin Hurricane Season runs from June 1 through November 30. The Atlantic Basin includes the Caribbean and the Gulf of Mexico. Peak hurricane activity is from about mid-August to mid-October. However, tropical systems have been known to develop outside the official season (NOAA, undated, <http://www.srh.noaa.gov/images/hgx/tropicalwp/OfficialHurricaneSeason.pdf>, accessed November, 2011).

⁴⁰ The hurricane peril was cited by FCIC as the reason to change the crop year from October 1 through September 30 to the current June 1 through May 31. See 70 FR 37225.

are heavily involved with producing bedding and garden vegetable plants. Nurseries listed in the first category are most likely year-round operations that produce plants of various years of growth. These nurseries will always have inventory on hand. Nurseries listed in the second category, but in areas with severe winter weather, are also most likely year-round operations that produce plants of various ages and sizes. However, the rhythm of their operations places the greatest demands on the producers in a window bracketing the current sales closing date. The nurseries producing bedding and vegetable plants have more seasonal production pattern with a peak of inventory in the late winter and significant shipments occurring in the early spring. Consequently, from region to region and among the various types of operations, the busiest time of year for staff is quite variable. Perhaps offering sales closing dates that vary by region, as is currently done in other national programs, would mitigate these issues.

Sales Closing Date

The sales closing date was a topic of discussion whenever more than one producer was commenting on the Nursery Program. There is a defined sales closing date of May 1 included in the Special Provisions. Insurance attaches on June 1 for applications or requests for change in coverage submitted on or before May 1. In general, few producers indicated there was a logical connection between their business cycle and the defined sales closing date. Most had a date they felt their business year began, a (potentially different) date when they could construct a reasonable PIVR, and a date their risks began. There was a consensus that any defined sales closing date was not the “correct” date, but no consensus of what an appropriate sales closing date might be. For one producer it was in January. For another it was in July. For yet another it was in late November or early December. Allowing policies to renew on the anniversary of the first application might be an alternative. This effectively allows each producer to customize the crop year to the specific needs of the operation. With regard to the need to define a crop year for statistical purposes, etc., the approach of the Standard Reinsurance Agreement could be considered. The crop year for those purposes would consist of all policies that begin or renew during a specific period.

It should be noted, the Crop Provisions impose a mandatory minimum 30-day waiting period from the date of initial application or a request for change in insurance coverage before insurance attaches. This provision makes it impossible to predict a specific weather event that may be the source of damage to an insured crop, regardless of when the application is made. The Crop Provisions permit sales during an extended timeframe for the initial year of coverage or at any time a break in coverage occurs.

This first sales closing date and the waiting period are reasonable considering the nature of the crop, the risk periods, and the business cycle. The required waiting period assures the purchase occurs before any forecasts of imminent freezing weather, hurricane, violent thunderstorms, or other weather event that may lead to damage.

Acreage Report Date

The acreage report date, May 1, is when the PIVR is due. For applications made after May 1, the PIVR is due on the date the application is submitted. From an insurance perspective, this date is reasonable, in part because the insured has the opportunity to submit up to two revised PIVR to increase liability during the insurance period (section 6(g) of the Crop Provisions). In addition,

the Crop Provisions have a further delay insurance attachment until 30 days after the receipt of the PIVR and associated paperwork. Hence, a delay by the insured in submitting the PIVR delays the date insurance attaches but does not extend the end of the insurance period. This provides an element of protection to the insurer relative to the liability actually insured and the period of insurance. However, a late submission of the PIVR may trigger a reduction in premium.

Again, few producers indicated there was a logical connection between their business cycle and the date the PIVR was due. Most had a date they felt they could construct a reasonable PIVR. No one indicated that date was May 1. By that point either they were shipping inventory, had yet to decide what they would produce, or were fully engaged in production and could not take the time to produce a PIVR. For a small minority, the year was divided into three production cycles. For this group, a single PIVR due date was totally illogical since their production was based on contracts that were signed throughout the year. They didn't know if their August-to-November crop would be roses or ornamental grasses until months after the PIVR was due.

Insurance Period Dates

The insurance period begins June 1 or 30 days after submission of the application or the required supporting documentation are submitted. The insurance period ends the following May 31. These dates are reasonable since protection is provided during the entire period that damage may occur once the insured has complied with the terms of insurance. However, considering the concerns producers had about the sales closing date and the acreage report date, producers who cannot meet those may have no insurance during risky periods

Other Dates

The initial and final planting dates do not apply for the Nursery Program. Acquisition of inventory can occur for much of the calendar year.

The production reporting date does not apply. Section 3(a) of the Crop Provisions exempts nursery from the requirements to report production. This provision is required by the Basic Provisions whenever a production report is not applicable.

The reinsurance date is defined by the Standard Reinsurance Agreement (SRA). The Nursery Program is included under the SRA that ends on the June 30 after the sales closing date. All sales that occur during the crop year (new insureds) also will be included under the same SRA since coverage under the SRA is defined by the published sales closing date. This is an administrative date for the purpose of aggregating liability under a particular SRA. It has no particular meaning for performance of the Nursery Program. There is no reason to deviate from the norm that has been established for defining the aggregation of liability under the SRA.

The billing date, previously established as the March 1 following the first sales closing date for the 2011 crop year, is also an administrative date. Traditionally, crop insurance has established the billing date near the end of the insurance period. This date for the Nursery Program has been consistent with that practice. Section 508 (d) (4) of the Food, Conservation, and Energy Act of 2008, changed the billing date to August 15 beginning with the 2012 crop year.

The contract change date is January 31. This also is an administrative date. The Basic Provisions (Section 4(c)) state the insured will be provided a copy of any changes to the insurance offer not later than 30 days prior to the cancellation date. By tradition, the contract change date has been established earlier than this minimum, typically three to four months prior to the sales closing date which normally also is the cancellation date. This provides the AIP with the opportunity to distribute the information as required by section 4(c). In the case of the Nursery Program, the contract change date is three months prior to the sales closing date and four months prior to the cancellation date. This is consistent with the normal practice for crop insurance.

The cancellation/termination dates are May 31. This differs from most crops for which the sales closing and cancellation/termination dates are the same. As noted in the earlier discussion, the sales closing date for the Nursery Program precedes the cancellation/termination dates to provide a period of time that makes it impossible to predict potential damaging events between the date of application or renewal and the attachment of insurance. This does not create issues with respect to termination for debt because Section 2(f)(2) of the Basic Provisions explicitly addresses the matter of termination when the sales closing date precedes the termination date. Termination is effective as of the sales closing date.

In summary, while all the dates in the Nursery Program are reasonable in relation to the nature of the crop and the risk period, it is notable that producers in every region indicated the sales closing date and the insurance period did not reflect the business cycle of nurseries.

Crop Provisions

Pursuant to the requirements of the Program Review Handbook, this section provides a section-by-section review of the Crop Provisions. The content is discussed briefly with an assessment of potential vulnerabilities that may exist. Particular attention will be placed upon an assessment of whether the program provisions appropriately meet the needs of the nursery industry and the crop insurance system. RMA advised the Contractor that the thrust of the review was intended to identify alternatives to the current program design. Accordingly, the thrust of this assessment under the Program Review Handbook will focus on those aspects of the program that are likely to be a feature of any replacement program. The Contractor will identify those that are believed to need improvement whether the current program is continued in a slightly modified form or if a new program is devised.

The Nursery Program differs materially from the norm for crop insurance programs. It is substantially more complex than most programs, and the Crop Provisions reflect this fact. There are other somewhat similar programs, such as Florida Fruit Trees, Texas Citrus Trees, and Hawaii Tropical Trees. Although all these programs are designed to establish the percentage of plant damage and to provide funds for replacement or rehabilitation of damaged plants, the Nursery Program is far more complex than the others mostly due to the sheer numbers of distinct plant types and values. In addition, the insured objects in those other programs are immobile.

The program has even greater complexity since significant revisions have been made to the Crop Provisions by means of statements in the Special Provisions. These statements have changed definitions and added new features to the program such as an over-report factor, a term not

mentioned in the Crop Provisions. This review will flag those instances in which changes have been made to the Crop Provisions and evaluate the impacts. The Contractor notes that the order of control of program documents allows the Special Provisions to control the Crop Provisions. However, the primary purpose of the Special Provisions is to provide information specific to a county and not to serve as a vehicle to substantively modify the Crop Provisions without following the requirements of the Administrative Procedures Act. The Contractor acknowledges extreme circumstances do require use of the “control” language on occasion.

Briefly, the Nursery Program is based on a valuation per plant at specifically defined stages (age or size), type and size of container if container grown, and growth media (container or field-grown). In contrast to the tree programs, where the insured object is fixed in place, nursery inventory in containers is mobile. Stock is subject to sale and replacement during an insurance period. Nursery is an inventory coverage program wherein the inventory and its value may change during an insurance year. This fact inserts a complicating factor into any design of a nursery insurance program.

The premise of the program with regard to establishing insurance is that the insured files a PIVR on or before the sales closing date or the date of application, whichever is later. This document is comparable to an acreage report, i.e., it contains the information needed to establish liability and to determine premium. Since the inventory may fluctuate during a crop year, the insured is given two opportunities to revise the PIVR, but only to increase liability. The limit of two revised PIVR during a crop year⁴¹ was imposed as an administrative measure to reduce the workload imposed on AIPs.⁴² Policies with additional coverage for a practice (container or field-grown) also may increase liability with the PIE. The premium for the increased PIVR value is calculated from the month the increase is effective until the end of the insurance year while the premium for the PIE is calculated for the months the Endorsement is effective.

The PIVR must be accompanied by two copies of the insured’s wholesale catalogs or price lists. The prices of plants for insurance purposes may not exceed the lesser of the prices established by the insured via the catalog or price list or the uniform national values contained in the Plant Price Schedule (PPS) issued by RMA. RMA established the PPS as the reference for maximum prices because “A number of public oversight agencies found that FCIC was exposing the nursery program to potential abuse and litigation when it allowed individual nurseries to set their own prices.”⁴³ The PIVR must report the total value of the inventory of each of up to 16 insurable plant types (applies to all coverage types). At the request of the AIP, the insured must supply extremely detailed records to support the PIVR.

A confusing element of the Crop Provisions is the term “basic unit.” Section 2 allows the basic unit for a practice to be divided into additional basic units by plant type. The first reference to basic unit in the previous sentence refers to all the insurable plants included in the practice in the county in which the insured has either a 100 percent interest or a partial interest with another

⁴¹ Actually, there can be more than two under specific circumstances. However, these are not cited in the Crop Provisions as will be noted later.

⁴² 70 FR 37232: “Language is added to section 6(g) to limit the number of inventory revisions during the crop year to two. This is to reduce the administrative burden on reinsured companies and growers to track an unlimited amount of changes during the crop year.”

⁴³ 63 FR 50967.

party, as defined in the Basic Provisions. The second reference to basic unit in that sentence refers to the inventory of insurable plants of a defined plant type, again by share.

Consider the usage of this term in the Crop Provisions. For example, the definition of “Field Market Value A” states “This allows the amount of insurance under the policy to be divided among the individual units ...” This statement implies that Field Market Value A pertains to the basic unit as defined by the Basic Provisions. The definition of “Field Market Value B” states “This is used to determine the loss of value for each individual unit...” This statement implies Field Market Value B refers to basic units by type of plant if such division has been made by the insured. The definition of “loss” defines the term as the result of subtracting Field Market Value B from Field Market Value A. But, as indicated previously, the two definitions appear incompatible. At the very least, there is nothing in the Crop Provisions that addresses how the “amount of insurance under the policy” is to be divided among the individual basic units if such division has occurred.

The Nursery LASH also does not address the issue of dividing the “amount of insurance under the policy” among basic units by type. The only example contained therein pertains to a situation wherein a plant type (a basic unit) is unreported. In this example, the Field Market Value A for the unreported type is allocated pro-rata to the Field Market Value A for the two basic units that were reported. This procedure is consistent with normal procedure that governs unreported units.

The Contractor examined the history of the Nursery regulation (7 CFR 457.114) to determine the background of this apparent discrepancy. Prior to the 99-073 Crop Provisions, a basic unit was defined in terms of distance: all locations within a five-mile radius were a basic unit. The 99-073 Crop Provisions revised this definition to the common definition of basic unit and allowed optional units by plant type. Those provisions contained these limitations: “Although the basic unit may be divided into optional units in accordance with sections 2(b) and 2(c), you will still be considered to have a basic unit that will be used to establish the amount of insurance, crop year deductible, under report factor, premium, and the total amount of indemnity payable under this policy. ... If you elect optional units, your amount of insurance will be divided among optional units in relation to the actual value of plants in each optional unit.”

FCIC published a proposed rule at 69 FR 48166 ff. that amended the unit provisions to eliminate optional units by plant type and converted these to basic units by plant type. Basic units by plant type could be further divided into optional units under this proposal. The proposed rule continued the provision that the amount of insurance and the other policy parameters would be calculated at the basic unit level as defined by the Basic Provisions. The proposed rule did not contain the language regarding allocation of the amount of insurance among units. The reason for the change from optional to basic units was specified as “... it was discovered that it was possible for growers to receive coverage in excess of the coverage level selected because most calculations still occurred at the basic unit level even though optional units were selected. In some cases, growers were able to obtain coverage that exceeded the amount permitted in the Act.”⁴⁴ In response to a comment, FCIC further stated “...it is difficult to ascertain how the

⁴⁴ 70 FR 37224-37225.

amount of insurance, premium rates, deductibles determined at the basic unit level will apply to optional units. This level of complexity will make it difficult for agents to explain the policy to growers and reinsured companies to defend the policy provisions. For these reasons and those stated below, FCIC has elected to remove optional units from the policy ...⁴⁵ The provisions regarding calculation of the amount of insurance and other policy parameters at the basic unit level as defined by the Basic Provisions also were deleted.

The Contractor believes certain language contained in the 06-073 Nursery Crop Provisions should have been deleted when the unit provisions were revised as described previously, and will interpret the Crop Provisions with this understanding. For example, the definition of “Field Market Value A” still contains the following sentence: “This allows the amount of insurance under the policy to be divided among the individual units in accordance with the actual value of the plants in the unit at the time of loss to determine whether you are entitled to an indemnity for insured losses in the basic unit.” This sentence was appropriate when the amount of insurance was calculated at the policy basic unit level and then was allocated to the individual units. It is not appropriate under the present Crop Provisions. The review will consider each section of the Crop Provisions in order.

Definitions (Section 1)

Amount of Insurance – The term is clearly defined but section 3(e) modifies the definition. In addition, section 7 (Premium) uses the term to determine the amount of premium. Which amount of insurance? Should calculation of premium use the term as defined or the term as modified by section 3(e)? In addition, the definition does not include CAT coverage. The Contractor suggests the term be defined as “For the purpose of calculating premium, the result of multiplying the basic unit value by your selected coverage level and by your share. For the purpose of determining the amount of any indemnity, the result of multiplying the basic unit value by your selected coverage level and by your share minus any indemnities paid under these Crop Provisions” and that section 7 be modified slightly as recommended later in this review.

Basic Unit Value – The term is used repeatedly in the Crop Provisions, usually with a phrase such as “including any revision” or “including the Peak Inventory Endorsement if elected.” To simplify the Provisions, basic unit value can be defined as “The value of all insurable plants in a basic unit as declared on your original or revised PIVR and, if applicable, a Peak Inventory Endorsement.” In this manner, the definition includes all the qualifying phrases used in conjunction with the term.

Container Grown – The definition uses the term “pot” which is a specific FCIC size name for one identified standard container. It is the smallest standard container, equivalent to ANSI Standard Class SP3. The term “pot” instead should be “standard container.” Inclusion of a definition for the term “practice” is different from most if not all other crops. That definition can be deleted by modifying the definition of “container grown” to read: “A nursery production practice in which plants are grown in standard nursery containers ...”

⁴⁵ 70 FR 37228.

Crop Year Deductible – The definition uses the phrase “sum of all plant inventory values for each basic unit.” This term subsumes the definition of basic unit value. This potentially creates confusion since the reader must stop and ask if the value included by this definition differs from the basic unit value. Accordingly, the definition can be simplified as follows: “The basic unit value multiplied by the deductible percentage minus the amount of any previously incurred deductible if you have timely reported each loss to us.” The present definition also states that any loss under the Rehabilitation Endorsement is not considered a loss. This is not needed with the revised definition since payments under the Rehabilitation Endorsement do not affect the deductible.

Deductible Percentage – The term is not needed since the term deductible is defined in the Basic Provisions in the same manner.

Field Grown – Inclusion of a definition for the term “practice’ is different from most if not all other crops. That definition can be deleted and the definition of “field grown’ modified to read: “A nursery production practice in which plants are grown in the ground ...”

Field Market Value A – The present definition is wordy and confusing. It can be simplified as follows: “Our determination of the value of all insurable plants in the basic unit immediately prior to the occurrence of a loss event. This value will be determined in accordance with the requirements of section 6 of these Crop Provisions.”

The definition states the value of undamaged liners will be reduced to reflect a survival factor. No similar provision is contained in the definition of Field Market Value B. Unless all liners are totally destroyed, the value of liners as determined for Field Market Value A will be relatively less than the value determined for Field Market Value B, which reduces the loss. There is no provision in section 6 (PIVR) that reduces the value of liners. Since the over-report factor is basic unit value divided by Field Market Value A, this tends to create an over-report factor greater than 0.000 which, as stated in the Special Provisions, will affect the indemnity.⁴⁶ The producer also will pay more premiums since the value of liners reported on the PIVR is greater than the amount that is counted for Field Market Value A.

The Contractor notes Field Market Value A has been redefined in the Special Provisions, but only to incorporate an over-report factor in addition to the under-report factor. This does not affect the overall assessment of the definition.

Given the recommended modification to the definition so it includes a reference to section 6 to determine values, the Contractor believes these discrepancies can be easily rectified by including a provision in section 6 to state that value of liners will be multiplied by the survival factor. This will automatically correct the quantity determined for basic unit value (and premium) and Field Market Values A and B, addressing the discrepancy.

Field Market Value B – Similarly, the present definition is confusing and can be simplified. It contains a sentence stating losses will be determined for each unit. Section 12 states that an

⁴⁶ The Contractor notes there is a ten percent allowance in the determination of the over-report factor.

under-report factor will be determined for the basic unit. The sentence in the definition is superfluous. The definition further states the value will be determined from the PPS or the insured's catalog "plus" any reduction in value due to uninsured causes. The definition does not clearly state the catalog price or the PPS price will be adjusted to reflect any determined amount of damage. It can be simplified as follows: "Our determination of the value of all damaged and undamaged insurable plants in the basic unit following the occurrence of a loss event. This value will be determined in accordance with the requirements of section 6 of these Crop Provisions with an adjustment for the amount of damage we determine the plants have sustained."

Liners – The definition refers to containers that are greater than or equal to one inch in diameter but less than three inches in diameter. The word diameter refers to a line passing through the center of a circle. By definition, a container having the shape of a square or a rectangle must have a smaller dimension than either one inch or three inches if it fits within a circle of a specified diameter. This most likely is the reason that the EPL PPS has the following definition: "Size of the cell is based on the inch diameter for round cells or the inch dimension of the longest side for square or rectangular cells." The definition would be more precise if it were worded "have a minimum dimension greater than or equal to one inch and a maximum dimension of less than three inches." The term dimension can be defined as "the diameter for round standard containers or the length of a side for square or rectangular standard nursery containers." In addition, the definition states that liners are "standard nursery containers" which is a term defined in a different manner than as used in the definition of liners. This definition is revised in the Special Provisions to state the minimum diameter is 5/8 inch.

Loss – This word "loss" is used mostly in the generic sense in the Crop Provisions ("causes of loss," "your loss," etc.). There are two instances where the word as defined is used: in the definitions of the over- and under-report factors. In both cases, it is modified by the phrase "as adjusted by any previous under-report factor or over-report factor." Incorporating this phrase into the definition of loss would eliminate the need to use it repeatedly elsewhere in the Crop Provisions.

In addition, the term also is modified in the Crop Provisions with the sentence "Payments made under the Rehabilitation Endorsement will not be considered a previous loss when calculating the (under-) over-report factor." This can be reduced to stating "Payments made under the Rehabilitation Endorsement are not considered to be a loss" as part of the definition of loss.

Marketable – The definition is less than precise. The definition uses the term "it" but does not provide an antecedent for the term. The definition uses the term market but does not indicate if the term refers to usual and customary market channels employed by the nursery operation or is a secondary market where lesser values prevail. The LASH defines the term to mean a plant that can be sold for any amount of money irrespective of its undamaged value. The definition would be more precise if worded "A plant that can be sold for any non-zero value."

Monthly Proration Factors – The definition states these factors are used when "... you do not insure the nursery plants for an entire year." This implies the factors apply when all nursery plants are not insured for the entire crop year. The definition would be more precise if the phrase "all or part of" was inserted between the words "insure" and "the."

Occurrence Deductible – The first sentence is not needed as part of a definition. If the sentence is not deleted, the term “inventory value” should be replaced by “Field Market Value A.”

This term also has been redefined on the Special Provisions to include reference to the over-report factor. Otherwise, the definition is unchanged from that contained in the Crop Provisions.

Over-report Factor – (from the Special Provisions) Most of the extensive words following the term are not a definition but instead are an explanation of how the factor is used. The explanation more properly belongs in section 15 (Examples). The factor can be defined as “The result of subtracting the total of all previous losses from the basic unit value, dividing this difference by Field Market Value A, and subtracting 1.100.”

Plant Price Schedule – The definition states the subject schedule establishes the “maximum” insurable value. However, the Pilot Nursery Growers Price Endorsement (06-073c) allows higher prices. A more descriptive term would be “highest value accepted for insurance purposes unless otherwise allowed by the policy or an endorsement to the policy.”

Practice – This definition is not deemed necessary in the Basic Provisions for all other crops. The slight modification to the definitions of field grown and container grown renders this definition unneeded.

Sales Closing Date – The definition references a 30-day waiting period before commencement of coverage as specified elsewhere in the Crop Provisions. The referenced sections contain more provisions than the 30-day waiting period. The definition would be more precise if it were worded “All applications, including those for amended coverage, are subject to the terms of sections 3(d) and 9(a) of these Crop Provisions.” The word “new” is not needed.

Standard Nursery Containers – The definition uses the word “diameter.” See the discussion under “liners.” This definition also is revised in the Special Provisions to allow a minimum diameter of 5/8 inch.

Survival Factor – The term is described in terms of the date of insurance attachment. However, since the date of insurance attachment may be unknown, more precise terminology would be “A value specified in the Special Provisions that denotes the expected percentage of such plants that will be marketable.”

Under-report factor – See the discussion under “over-report factor.”

The Contractor’s observations and recommendations with regard to section 1 are intended to clarify terms to avoid potential misinterpretations and conflict. The recommendations also would simplify the Crop Provisions such that the intent is more clearly communicated. The observations and recommendations do not constitute any findings of specific vulnerabilities.

The Basic Provisions (05-BR and 11-BR)⁴⁷ state that the term “harvest” shall be as defined in a Crop Provisions for the “... purpose of determining the end of the insurance period.” The Crop Provisions specify the provisions in section 9 of the Crop Provisions are “in addition to” the provisions of section 11 of the Basic Provisions which include harvest as a condition for the end of the insurance period. No such definition is contained in the Nursery Crop Provisions. The Contractor recommends a definition of harvest be included for this purpose. For example, the conditions specified in sections 9(b)(ii) and (iii) could be included in a definition of harvest. The review of the policy documents indicates some simplification and clarification can be achieved by defining some additional terms. These include:

Catalog – Any document issued by your nursery used to advise actual and potential buyers of the amount you will charge for purchases of each plant included in the inventory and offered for sale. Such documents may be issued by season, by plant type, or other basis consistent with your business practices. The documents can be in any form, but must meet the following minimum standards:

- (1) Be type-written and legible;
- (2) Show an issue date on the cover page (may be handwritten);
- (3) Contain the name, address, and phone number of your nursery;
- (4) Be provided to customers and used in the sale of your plants; and
- (5) List each plant’s name (scientific or common), plant or container size, and wholesale price.

With this definition, section 6(k) of the Crop Provisions can be deleted and references to catalog or price list can be shortened to catalog.

Lowest Price – The lower of the minimum price stated in your catalog or the price contained in the Plant Price Schedule for a plant and size. The minimum value in your catalog is the lowest price at which you will sell that plant and size to any buyer including all discounts for volume or any other factor.

With these definitions, significant simplifications can be made. For example, “The price for each plant and size listed on your PIVR will be the lower of the Plant Price Schedule price or the lowest wholesale price in your nursery catalog or price list submitted in accordance with section 6(k)” can be stated as “The inventory value you report on your PIVR must be based on the lowest price for every plant included in the inventory.”

Section 2 Unit Division

The Basic Provisions define a basic unit as “All insurable acreage of the insured crop...” Section 2(a) states “If you elect additional coverage for a practice, a basic unit, as defined in section 1 of the Basic Provisions...” may be divided into additional basic units by plant type. In other words, the Nursery Crop Provisions make a production practice equivalent to a crop. Further, each plant type can be a basic unit. The reason for this treatment is not intuitive. There is no difference in the total premium if basic units by plant type are elected (assuming same coverage level for all plant types). There is no difference in the requirements to establish

⁴⁷ See the definition of second crop.

insurance. The insured is required to establish the value of the inventory by type on the PIVR within practice irrespective of the choice of unit (policy or by plant type). The terms can be simplified by stating a basic unit is established by practice for CAT coverage and for each plant type within practice for additional coverage.

An outcome of the manner in which a policy basic unit is defined is that policyholders who choose CAT are eligible for at least two units – container practice and field grown practice – for nursery. For most insurable commodities, CAT policyholders are restricted to one unit within share.

Section 2(b) names each insurable plant type. Types normally are specified in the actuarial documents. The purpose of doing so in the Crop Provisions is not clear, especially since the type names and codes are included in the Special Provisions. The text does not clearly designate whether basic units by type must be elected for all insurable types included on the PIVR or whether a basic unit by type may be elected for one type while several other types can be included in another basic unit. References to types may be removed, simplifying the provisions and making them consistent with other programs (which stipulate the insurable types in the actuarial documents).

Section 3 Insurance Guarantees, Coverage Levels, and Prices for Determining Indemnities

Section 3(e) states the amount of insurance will be reduced by the amount of any indemnity. This condition is not included in the definition. If this definition as well as the definition of basic unit value is modified as recommended, section 3(e) is not needed.

Section 3(f) states the amount of insurance may be increased if the nursery is restocked. Restock is not a defined term in the Crop Provisions. It is defined in the Peak Inventory Endorsement. Since it is used in both documents, the definition should be in the Crop Provisions. The difference between the provision in section 3(f) and the two increases in the PIVR allowed by section 6 is not clear. Is a revised PIVR for restock allowed in addition to the two increases authorized by section 6? If not, the provision is superfluous. If yes, there should be language specifying this exemption. This exception is contained in the LASH. This is not the appropriate vehicle for policy language.

Section 4 Contract Changes

The Contractor has no comments.

Section 5 Cancellation and Termination Dates

The Contractor has no comments.

Section 6 PIVR

Section 6(a) overrides section 6 of the Basic Provisions in its entirety. The requirement of section 6(b) of the Basic Provisions to file a “zero acreage report” (or zero PIVR) is not included in section 6 of the Nursery Crop Provisions.

Section 6(b)(1) does not contain a date certain by which the insured must be notified if the inventory or the catalog or price list is not acceptable. Most crop provisions that have a

provision allowing the AIP to reject coverage identify the timeframe for notice to the insured if the insurance will not attach.

Section 6(b)(2) states insurance will not attach until “30 days” after receipt of the required documents if such documents are not timely filed. Again, the LASH contains policy language that interprets “30 days” to mean that 30 full days must elapse before insurance attaches, i.e., insurance does not attach until the “31st day” after receipt of the application and required documents. The Crop Provisions should provide similar specificity.

Section 6(c)(2) contains a provision that the insured must be able to “... properly obtain and maintain nursery stock...” “Stock plants” is a defined term. Section 8(i) excludes stock plants from insurance. The term “insured plants” would be a more appropriate in section 6(c)(2).

Section 6(e)(1) states the price for each plant and size “listed on your PIVR” must meet certain criteria. However, section 6(c)(1) requires the PIVR to contain only the plant inventory values for each plant type. Section 6(e)(1) instead should state the price for each plant and size used to calculate the inventory valuation reported on the PIVR for each plant type must meet the criteria specified in that section.

Section 6(e)(2) is not needed. The previous section adequately limits the price that will be insured. In addition, the insured price can be increased under a Nursery Grower’s Price Endorsement.

Section 6(e)(3) begins with the statement “If you have previously made a claim and ... plant was damaged prior to the submission of the PIVR for the current crop year ...” The provision then states it will be insurable for the lesser of the PPL or the catalog or price list value if the loss adjuster is unable to determine when the damage occurred. However, the value can be reduced [presumably, by us] at any time the extent of the damage is discovered. Section 6(h) states insurable plants damaged before insurance attaches must be insured at a reduced value. The Contractor is unable to determine the purpose of section 6(e)(3). If damaged plants must be included in the inventory value at a reduced price (section 6(h)), the inability of the loss adjuster to determine when the damage occurred should not be a factor. Section 6(e) should contain the provision that reduces the value for plants damaged before insurance attached. As it currently reads, the value of the plants is the lesser of the PPS or the catalog.

In addition, section 6(e)(3) refers to the “Eligible Plant List price.” The defined term is Plant Price List. The defined term is used in sections 6(e)(1) and (2).

Section 6(f) contains certain provisions affecting practices for which the Catastrophic Risk Protection Endorsement has been elected. Among these is a requirement that the PIVR contain the “actual inventory value on the date insurance attaches.” It is not clear how this differs from the requirements of section 6(e), which requires the PIVR to “...reflect your insurable nursery plant inventory value by basic unit.” This raises the question of what values are to be included on the PIVR – the value of a plant as it is in the inventory on the date the PIVR is prepared or the value at which the nursery anticipates inventory will be sold. The insurance includes a full 12 month period. Plants are growing continuously and changing value as growth accrues. The size

and value of a plant on June 1 likely differs from the size and value of the same plant on April 1 of the following year. The Crop Provisions merely state that the value cannot exceed certain parameters but are silent (with the exception of CAT coverage) as to the appropriate value at the date the PIVR is prepared. Section 14 of the Underwriting Guide expands on this provision to state that all PIVR (CAT and additional coverage) must be reflective of the actual value on the date submitted. The Underwriting Guide is not part of the policy.

Section 6(f)(1) requires the insured to produce adequate documentation upon demand of the AIP. The information contained in this provision is essentially the same as that contained in section 6(c)(2). A definition could simplify the Crop Provisions.

Section 6(f)(3) is identical to section 6(c)(3). There appears to be no reason for this since section 6(c)(3) applies regardless of the chosen coverage level whereas section 6(f) applies only to CAT coverage.

Due to the similarities or identical content of section 6(f) compared to section 6(c), a minor change in section 6(c)(2) to make that section mandatory for CAT and permissive for additional policies would eliminate the need for section 6(f) in its entirety.

Section 6(g) allows the insured to submit two revised PIVR "... prior to 30 days before the end of the crop year." This phrase is not needed since section 6(g)(4) states the revised PIVR will not be effective earlier than 30 days after its receipt. Clearly, the inventory value cannot be increased for any part of a crop year if the revised PIVR is received on or after the 30th day before the end of that crop year since insurance will not attach until the 31st day after submission.

Section 6(g)(1) requires the revised PIVR to contain the same information as required in section 6(c). It appears that section 6(e) also applies. Section 6(g)(1) instead should state that the revised PIVR must meet all the requirements of an original PIVR.

Section 6(g)(1) also contains a statement that the limitations on changes to the coverage level specified in section 3(d) do not apply when a new plant type is added. Section 3(c)(1)(iv) already advises the insured that a coverage level must be selected when a new plant type is added. The statement in section 6(g)(1) is not needed. The sentence regarding limitations on changes to the coverage level if plants are added to an already reported plant type also is not needed.

Section 6(g)(2) states that an inspection will be performed whenever the total of all basic unit values included on the PIVR increases by 50 percent or more due to a revised PIVR. However, the insured can file a Peak Inventory Endorsement to increase the amount of insurance by 200 percent with no mandatory inspection requirement. An increase of 200 percent in the amount of insurance means the sum of the basic unit values increases by more than 200 percent. It is not intuitively obvious why an increase in insured value that is less than one-quarter of that allowed by the Peak Inventory Endorsement should trigger a mandatory inspection.

Section 6(g)(3) states that an inspection by the AIP is discretionary whenever the revised PIVR increases the total of the basic unit values by less than 50 percent. Section 21 of the Basic

Provisions contains detailed information regarding access to the insured crop and records. The reason for this additional language is not clear.

Section 6(g)(5) states that the requested increase will be denied if a loss occurs within 30 days after the request has been received. However, insurance does not attach until 30 days after the request has been received. Any loss during those 30 days before insurance attaches is an uninsured loss. The provision is not necessary.

Section 6(h)(2) states the "... plants will be removed from the PIVR ..." Only the basic unit value by plant type is listed on the PIVR. Plants are listed in the supporting documentation. The provision instead should read "... the value of such plants will be removed from the basic unit value reported on the PIVR ..."

Section 6(i) states that the insured "... must report the full unit value..." As noted previously, the basis to be used to develop the basic unit values is not defined anywhere in the Crop Provisions except with regard to CAT coverage. However, the primary intent of this section is to advise the insured that any claim may be reduced in accordance with section 12(d). This notice should be included in section 6(e). Section 6(i) appears to be in lieu of section 6(f) of the Basic Provisions although this is not stated. Section 6(f) allows the AIP to determine the insurable acreage and assess premium or to deny liability. The Nursery Crop Provisions deny liability in all instances. No discretion is granted to the AIP.

Section 6(k) establishes standards of acceptability for the catalog or price list. This information should be included in a definition as recommended since the term is used frequently in the Crop Provisions.

Elimination of the unnecessary or overly complex language in this section could offer both meaningful improvements to the clarity of the program and reduce redundancy.

Section 7 Premium

Section 7(a) states that the premium will be calculated using the amount of insurance. As noted previously, the term amount of insurance is defined but then is modified by section 3(e). The Contractor recommended a modification to the definition for the purpose of defining the amount on which premium is based. In addition, section 7(a) must be modified to state the procedure stated therein applies to additional coverage, and that the result of that calculation will be further multiplied by 0.55 if CAT coverage is elected.

Section 7(a) states the premium will be determined by multiplying by the monthly proration factor, if applicable. There is a proration factor included on the actuarial documents for every month of the year. A proration factor thus always is applicable.

Section 7(b)(2) states the premium will be prorated if the insured submits a revised PIVR "... to report an increase in inventory value ..." Section 6(g)(6) prohibits the filing of a revised PIVR to reduce the inventory value. The clause in section 7(b)(2) is not needed.

Section 7(c) states that the premium will be charged for the entire month "... if your premium is prorated..." The clause is not necessary since the remainder of this provision adequately describes the calculation of premium for a partial month.

Section 7(d) must be modified via a statement on the Special Provisions for the remaining life of the 08-073 Nursery Crop Provisions because Section 508 (d) (4) of the Food, Conservation, and Energy Act of 2008 changed the billing date to August 15 beginning with the 2012 crop year.⁴⁸ However, the entire provision is not clearly stated. Presumably, section 7(d)(1) refers to April 1st of the crop year not the April 1st preceding the crop year. Section 7(d)(3) appears to apply only when the application is submitted on or after April 1st of the crop year since 7(d)(1) states the premium will be billed on the date contained in the Special Provisions. Section 7(d)(3) is a provision in lieu of section 7(a) of the Basic Provisions and thus appears to apply to all premiums owed for the crop year. This provision should be incorporated into 7(d)(2) as another sentence.

Section 8 Insured Crop and Plants

The introductory language in section 8 refers to the Eligible Price List. Although this should be Eligible Plant List, the term is not needed since section 8(a) contains the requirement that the plants be on the Eligible Plant List. The section as worded conveys an impression that insurance may be elected for plants and plant types whereas section 3 states that all plants in a practice must be insured. This in part is due to the multiple layering of clauses. The introductory material can be simplified by deleting the words "contained on the Eligible Price (Plant) List," moving the phrase "in which you have a share" to subsection (a), and re-designating the existing subsections. This is the normal placement of the share requirement.

Section 9 of the Basic Provisions defines insurable acreage. Those provisions clearly do not apply to nursery. However, the Nursery Crop Provisions refer to inspections to determine if the nursery is acceptable. No standards to define an acceptable nursery are contained in the Crop Provisions, a condition that would be analogous to the description of insurable and uninsurable land. It seems appropriate that the Crop Provisions should contain a section that describes an insurable nursery. Since such inspections are required in some circumstances, standards for making such determinations must exist.

Section 9 Insurance Period

Section 9(b) of the Crop Provisions does not contain a provision that ends insurance on any plant when it is removed from the nursery or from its growing medium. Section 9 of 05-BR also does not contain language that ends insurance on part of a unit upon the occurrence of a certain event. The Basic Provisions 11-BR do end insurance on part of a unit upon the occurrence of an event; however, those provisions reference "harvest" as the condition that ends the insurance period. If the Nursery Crop Provisions are updated to 11-BR the Contractor recommends the term "harvest" be defined in the context of the nursery program as recommended earlier in this evaluation.

⁴⁸ Due to contract change dates, the provision first applies to nursery for the 2013 crop year.

Section 10 Causes of Loss

The Contractor has no comments regarding this section.

Section 11 Duties in the Event of Damage or Loss

The Contractor has no comments regarding this section.

Section 12 Settlement of Claim

The Contractor has no comments regarding this section.

Section 13 Late and Prevented Planting

The Contractor has no comments regarding this section.

Section 14 Written Agreements

Section 14(c) provides an exemption to the requirements of section 14(a). The two sections can be combined into 14(a).

Section 15 Examples

The examples provided in section 15 would have greater benefit if it followed the calculation steps stated in section 12 and if more explanation were included. For example, the example for the single unit case states the “plant inventory value” reported by you is \$100,000. This should be identified (perhaps parenthetically) as the “basic unit value” to conform to the defined terms. Step (2) of the example is Field Market Value A minus Field Market Value B whereas this is step (c) in section 12. The example omits the step in section 12 wherein the occurrence deductible is calculated. The example would be better phrased if it were worded as “our loss adjuster determines that the value of the inventory immediately before the loss (Field Market Value A) was \$125,000 and the value after the loss (Field Market Value B) is \$80,000. These small adjustments would enhance the effect of the example. Similar changes would enhance the example of the Peak Inventory Endorsement.

Review of the Peak Inventory Endorsement

The Peak Inventory Endorsement allows the insured to temporarily increase the value of the insured inventory. This Endorsement is useful for nurseries that have significant seasonality of inventories such as one that grows a significant number of poinsettias or similar plants typically associated with specific holidays. Bedding plants are another example of inventory with significant seasonality. The Endorsement limits the responsibility to pay premium to the period of time when the seasonal plants are contained in the inventory.

Only one Endorsement may be purchased for each basic unit unless a loss has occurred and the insured restocks the nursery. In that event, one additional Endorsement may be purchased for each loss/restock event.

Section 1 Definitions

Peak Amount of Insurance – The definition states that this term applies “for each basic unit.” Under the Nursery Crop Provisions, a basic unit may exist by practice or by plant type within practice. The definition would be more precise if it were worded “for each basic unit established by you under the Nursery Crop Provisions.”

Peak Inventory Value Report – The definition references the “value of insurable plants ... on the PIVR.” Since there may be more than one PIVR, the definition should refer to “the original or most recently revised PIVR.” The definition needs a verb at the beginning of the last clause, such as “and meets the other requirements ...”

Peak Inventory Premium Adjustment Factor – The definition contains the phrase “... for the month in which coverage commenced.” The defined term is coverage commencement date. Hence, the phrase should read “... for the month containing the coverage commencement date.”

Section 2 Eligibility

Section 2(c)(1) states “... each plant type basic unit will be considered a separate Peak Inventory Endorsement.” This statement should be qualified such that basic units by plant type must have been elected under the Crop Provisions.

Section 2(c)(2) does not contain a specific date by which the AIP must reject the Peak Inventory Value Report.

Section 3 Coverage

The Contractor has no comments regarding this section.

Section 4 Peak Insurance Period

Section 4 establishes a peak insurance period that is the same as the defined term “coverage term.” The section seems unnecessary since section 3(a) states the amount of insurance is increased for the coverage term. It is not clear what the intent of this section had been.

Section 5 Premium

The Contractor has no comments regarding this section.

Section 6 Reporting Requirements

The Contractor has no comments regarding this section.

Section 7 Liability Limit

Section 7 limits the peak amount of insurance to 200 percent of the amount of insurance established under the Nursery Crop Provisions. Since the amount of insurance can change (as discussed previously), this would be worded more precisely if it stated “the amount of insurance in effect under the Nursery Crop Provisions on the date the Peak Endorsement is submitted” or “the amount of insurance established under the originally submitted PIVR” or some other description of the exact amount of insurance that is meant.

Review of the Rehabilitation Endorsement

The Rehabilitation Endorsement is an optional coverage for field grown nursery plants. The endorsement compensates the insured for the usual and customary costs for labor and materials associated with pruning and righting of damaged plants. The endorsement pays the actual costs multiplied by the underreport factor whenever the actual costs exceed the lesser of 2.0 percent of Field Market Value A or \$5,000 but not to exceed 7.5 percent of the value of the damaged plants multiplied by the underreport factor, coverage level, and share. The maximum amount payable

in any crop year is 7.5 percent of the basic unit value multiplied by the underreport factor, coverage level, and share.

The loss adjuster must determine: 1) there is a reasonable expectation of recovery of the damaged plants, and 2) rehabilitation is practical, i.e., the cost of rehabilitation will not exceed the value of the plant. These determinations are based on the type and extent of the damage.

Section 1 Eligibility

Section 1(a) is not necessary. Section 11 of the Catastrophic Risk Protection Endorsement (09-CAT) excludes all endorsements and options that extend the coverage available under any crop policy offered by FCIC.

Section 1(b) does not use terms defined in the Crop Provisions. It should state that all plants reported under the field grown practice on the PIVR must be insured. The second sentence should state that plants reported under the container practice are not covered by the endorsement.

Section 1(c) seemingly is written with an expectation that once insurance is elected for a practice the insurance will be continuously in force on that practice. However, the Crop Provisions allow the insured to change coverage (CAT to additional or vice versa) each year.

Section 2 Coverage

The last sentence in section 2(d)(2) is not needed since the section already states the values will be determined in accordance with section 6 of the Crop Provisions.

Sections 2(d)(2) and (e) should state the maximum payments are 7.5 percent of the Field Market Value A [of the rehabilitated plants or of all plants, as appropriate] multiplied by the underreport factor, coverage level, and share. The language in the endorsement is vague.

Section 3 Cancellation

The Contractor has no comments regarding this section.

Review of the Pilot Nursery Growers Price Endorsement

The Price Endorsement is an optional coverage that allows the insured to place values greater than those established by the PPS on selected plants. The greater value must be less than or equal to the price established by the insured's catalog or price list. This endorsement is intended to respond to assertions that the PPS is an imperfect representation of the range of prices that exist in the marketplace for nursery plants.

The endorsement introduces new terminology and modifies the Crop Provisions. Although the Special Provisions have been modified to introduce an over-report factor with associated changes to the definitions of Field Market Values A and B and of occurrence deductible, those changes are not compatible with the Pilot Nursery Grower's Price Endorsement. The changes are not compatible because the definition of over-report factor and the revised definitions for other terms limit the allowable price to the lesser of the PPS or the catalog or price list.

The Contractor believes the endorsement can be significantly simplified with a few modifications. For example, the endorsement can contain a provision such as the following:

“In lieu of the provisions of section 6(e)(1) of the Crop Provisions, the price applicable to each plant and size included in the insurable inventory shall be:

- (i) the lesser of the value in the Plant Price Schedule or the lowest price included in your catalog or price list; or
- (ii) for plants you designate and we accept, a price greater than that shown on the Plant Price List but equal to or less than the price contained in your catalog or price list at which you have made the greatest quantity of sales during one of the most recent three crop years as measured by the number of plants sold.”

The Contractor already had recommended section 6(e)(2) of the Crop Provisions be deleted because it is not needed. The above change enables many simplifications to the terms of the endorsement, as follows.

Section 1 Definitions

Field Market Values A and B – The Contractor earlier had recommended revision of these terms to refer to section 6 of the Crop Provisions for the pricing information presently contained in those definitions. The recommended change to the endorsement modifies section 6 such that the revised definitions remain appropriate. Hence, these definitions can be deleted from the endorsement.

PIVR – The definition in the Crop Provisions is adequate with appropriate changes in the endorsement.

Upgraded Plant, Upgraded Plant Price, Upgraded Plant List – These definitions are not needed with appropriate changes in the endorsement.

Verifiable Sales Records – The Crop Provisions require “...acceptable records of sales and purchases of plants for the three previous crop years in the amount of detail we require ...Acceptable records must contain the name and telephone number of the purchaser or seller, as applicable, names of the plants, the number of each plant sold or purchased, and the sales price for each plant.” The only substantive difference between the requirements in the Crop Provisions versus the definition in the endorsement is that records must be available for past three years (Crop Provisions) versus most recent year (endorsement). If a definition is needed, it should be in the Crop Provisions.

Section 2 Eligibility

Sections 2(a) and 2(b) require an “upgraded plant report” which serves as the application for the endorsement. The report identifies those plants for which a higher insurance price is requested and the amount of the higher price. The basic unit value reported on the PIVR is based on the higher price. The Crop Provisions require documentation upon request that contains the name of all plants in the inventory and the amount of the price being established for insurance. It should be possible to create a flag that identifies those plants for which the higher price is requested rather than requiring the insured to prepare two separate lists of plants to support the PIVR.

Section 2(b)(4) requires the insured have the upgraded plant prices “approved by us” at the time of application or the time of loss. It does not seem reasonable to believe a businessperson will enter into a contract of insurance and owe premium based on an unknown approval. Yet, the provisions require documentation at the time of application if the upgraded price exceeds the PPS by 50 percent or more or at the time of loss if the increase is less 50 percent. This provision no doubt was intended to reduce the amount of paperwork required at the time of application. This provision seems contrary to good business practice on the part of both the insured and the AIP since both are subject to uncertain outcomes with regard to liability. There is no provision regarding the amount of premium owed if one or more plants on the upgraded plant list are rejected, which can occur “at time of application or time of loss.”

Section 3 Upgraded Plant Prices

Much of section 3 contains procedures for valuing plants under defined circumstances and basically is procedural in nature. It appears the same principles apply to the valuation of any plant, whether upgraded or not, whose value is included in the determination of the basic unit value. It is conjectural as to whether these procedures should be included in the specifics of the Endorsement or should be relegated to another format for presentation to the producer (such as the PPS, which is included within the definition of the contract). The information is out of place in this document.

Section 4 Coverage

Section 4(d) states that the upgraded plant prices will not be used to calculate Field Market Values A and B if using those values would cause the under-report factor to be less than 0.50 for that loss event. It is not clear how use of the upgraded prices would “cause” the under-report factor to be less than 0.50. The revised definitions of Field Market Values A and B state that the upgraded prices will be used to determine those values. Since the upgraded price is included in both the numerator and the denominator, there is no reason to expect inclusion of those prices will reduce the under-report factor.

Section 5 Reporting Requirements

The Contractor has no comments on this section.

Review of the Special Provisions of Insurance

The Contractor reviewed randomly selected documents from the 2012 crop year actuarial materials and chose the Special Provisions for Autauga County, Alabama as representative of the information provided for insureds.

The Special Provisions are intended primarily to provide information unique to a particular locality or that is subject to relatively frequent changes. This provides an alternative to the lengthy, involved processes under the Administrative Procedures Act. That being said, the Special Provisions also can be used when necessary to modify terms of the policy that have proven to be problematic or inadequate. This is possible because the order of precedence places the Special Provisions in control of the Crop Provisions.

The Special Provisions were amended for the 2011 crop year to include an over-report factor and to make changes in the definitions of Field Market Value A, under-report factor, and occurrence

deductible to accommodate this revision. The over-report factor is defined as the ratio of the basic unit value minus previous losses divided by Field Market Value A, with 1.10 subtracted from this quotient. For the 2012 crop year, the definition was modified to be the basic unit value minus previous losses divided by Field Market Value A plus previous sales with 1.10 subtracted from this quotient.⁴⁹

The change in the denominator for 2012 has no effect if there are no previous sales. When comparing the examples included in the Special Provisions, the only change is to include \$10,000 of previous sales in the denominator for the 2012 Special Provisions. Doing so increases the indemnity by \$8,250 compared to the example used for crop year 2011.⁵⁰

In both years, the definition of over-report factor does not limit the factor to 0.00. This means that the over-report factor can be a value between 0.00 and -0.10 whenever the basic unit value is greater than Field Market Value A plus previous sales up to the point where it is 1.10 times that denominator. The factor would be as large as -0.10 if the basic unit value equals Field Market Value A (ignoring previous losses and sales) since that ratio would result in 1.00 minus 1.10. Table 3 illustrates the effect of failing to include this limitation in the definition. The data and steps included in Table 3 are the same as in the Special Provisions, but previous sales are increased from \$10,000 to \$24,000. If the factor were limited to 0.00, the indemnity would be \$24,000 with these data. However, the failure to include the limit results in an indemnity of \$28,600.

⁴⁹ The definition in the Special Provisions contains this arithmetic expression following the description in words: “(i.e., [(basic unit value – total of all previous losses as adjusted by any previous under-report factor or over-report factor)/(Field Market Value A + insured value of plants listed on the verified sales records)] – 1.100).

⁵⁰ See the Special Provisions for 2011 and 2012 crop years to compare the results.

Table 3. Illustration of Effect of Failing to Limit Over-Report Factor to 0.00

Assume the basic unit value = \$125,000, Field Market Value = \$100,000, and previous sales = \$24,000. The indemnity would be calculated as follows with the language in the Special Provisions:

- Step (1) Determine the over-report factor
 $(\$125,000 \div (\$100,000 + \$24,000)) - 1.10 = -0.092$;
- Step (2) Field Market Value A minus Field Market Value B
 $\$100,000 - \$50,000 = \$50,000$;
- Step (3) The result of 1.000 minus step (1) multiplied by the result of step (2)
 $\$50,000 \times (1.000 - (-0.092)) = \$54,600$;
- Step (4) Result of step (3) minus the occurrence deductible
 $\$54,600 - \$26,000 = \$28,600$; and
- Step (5) Result of step (4) multiplied by your share
 $\$28,600 \times 1.000 = \$28,600$ indemnity payment.
-

Assuming the same information, but with a limit of 0.00 imposed on the over-report factor, the indemnity would be calculated as follows:

- Step (1) Determine the over-report factor
 $\text{Max } (\$125,000 \div (\$100,000 + \$24,000)) - 1.10, 0) = 0.00$;
- Step (2) Field Market Value A minus Field Market Value B
 $\$100,000 - \$50,000 = \$50,000$;
- Step (3) The result of 1.000 minus step (1) multiplied by the result of step (2)
 $\$50,000 \times (1.000 - (0.000)) = \$50,000$;
- Step (4) Result of step (3) minus the occurrence deductible
 $\$50,000 - \$26,000 = \$24,000$; and
- Step (5) Result of step (4) multiplied by your share
 $\$24,000 \times 1.000 = \$24,000$ indemnity payment.
-

Source: The Contractor's Underwriting Department.

The over-report factor eliminates any indemnity fairly rapidly. If the net basic unit value exceeds the net Field Market Value A by 35 percent, the indemnity is reduced by 50.2 percent. If the ratio is 1.50, the indemnity is reduced by 87.4 percent. The purpose of this factor must be to reduce the incentives for over-reporting of inventories by those insureds choosing CAT for a practice. Since there is no premium paid by the insured for CAT coverage, there is no financial cost for over-reporting. However, introduction of this factor is indicative that the PPS and requiring recent sales records by CAT policyholders have not achieved the effect of limiting the over-reporting of inventories. Although the loss adjuster presumably would limit the amount of any indemnity appropriately, over-reporting by CAT policyholders introduces wasteful allocation of subsidy dollars in years that no indemnity is owed, increases the loss adjustment subsidy, and may increase underwriting gains or reduce underwriting losses under the SRA.

The remainder of this review of the Special Provisions will focus on those statements the Contractor believes have certain deficiencies or are duplicative of other terms of the policy. Since the provisions often are not identified with a title or other designation, the Contractor will attempt to provide enough description so the particular provision can be found.

The first special provision defines a procedure to determine the value of damaged plants that will fully recover at some time after damage. The procedure is a ratio of the months to recover divided by the months of growth needed to return to the stage immediately before damage. The complement of this ratio multiplied by the "insurable plant price" is the value of the damaged

plant. There is an omission in the procedure: it should state, if the result of 1.00 minus the ratio is less than zero, the plant has no value. Several pages later in the Special Provisions, there is a statement that a plant is considered destroyed if the number of months needed to achieve recovery equals or exceeds the age of the plant at the time of damage. This material should be consolidated. The term “insurable plant price” is not defined. A procedure is outlined in section 6 of the Crop Provisions to determine the allowable price for insurance (also in the Nursery Grower’s Price Endorsement).

The second special provision outlines a process to determine the value for a plant in a container for which a price is not listed in the grower’s catalog or price sheet but does have a price for other sizes. The procedure involves establishing a linear relationship of prices listed in both the catalog and the PPS and applying the ratio of those prices to the schedule price for the size not included in the grower’s catalog. This provision initially was added to the Special Provisions for the 2008 crop year and initially referenced only the nearest size for developing the price relationship. This was modified for the 2010 crop year for situations when there is more than one size nearest to the missing plant. This gives rise to a question the Contractor raised earlier. What is the relevant price for establishing inventory value? The price of the plant as it exists on the sales closing date or the price at which the grower expects to sell it? A missing size may be a plant the grower intends to transplant and sell in a larger container sometime during the crop year. In any event, it seems the information should be a part of the EPL PPS rather than contained in the Special Provisions.

The next special provision is a statement that the Eligible Plant List and Plant List (sic) Schedule are part of the actuarial documents. These documents are defined in the Crop Provisions and are referenced several times therein. The Basic Provisions define “policy” as “The agreement between you and us to insure an agricultural commodity and consisting of the accepted application, these Basic Provisions, the Crop Provisions, the Special Provisions, other applicable endorsements or options, the actuarial documents ...” Hence, the referenced documents are included in the policy by definition. The statement in the Special Provisions is not needed.

The next special provision deals with omitted plants, a statement that first was added for the 2008 crop year. These are plants in the inventory but are not listed on the grower’s catalog or price list. The statement also applies to plants in the inventory and listed on the catalog or price list, but for which there is no corresponding price. This sentence could be deleted if the parentheses around “by either common or botanical name” are deleted and the phrase “or a price is not listed” is inserted following that phrase.

The statement makes such plants uninsurable for the current crop year but advises the insured that the value of such plants will be included in Field Market Value B (thereby reducing any indemnity if the plants have greater than zero value after damage has occurred). The statement further provides that “If your nursery catalog/price list is not updated on an annual basis, you must submit a supplement to the nursery catalog/price list on or before the sales closing date.” The purpose of this statement is not clear since section 6(b) of the Crop Provisions requires the insured to submit “...two copies of your most recent wholesale catalogs or price lists ... on or before the sales closing date for each crop year following the year of application.” The statement further provides that if the omitted plants were acquired after the PIVR was submitted for the

crop year, a revised PIVR and price list must be submitted. However, the statement does not clarify if the revised PIVR is in addition to the two revised PIVR allowed for the crop year. This could be important if, for example, the insured had submitted two revised PIVR before the omitted plants were discovered. The statement requires a revised PIVR (must be submitted).

The section dealing with omitted plants further states that plants currently in inventory but that are not ready for sale and are for which a price is not published must be reported on a revised PIVR along with a supplement to the catalog/price list. Again, there is no indication as to whether this is in addition to the two allowable revisions. The requirements of a price list from the Crop Provisions (section 6(k)) are repeated with the exception of two changes: instead of being provided to customers the price list must be intended for use in the sale of the plants, and the plant size but not the container size is required.

The statement further repeats the limitation of section 6(g)(4) of the Crop Provisions but does not contain the right of the AIP to reject the proposed increase in inventory value.

The next special provision is table of data for FCIC container sizes and volumes. This information duplicates data contained in the EPL PPS.⁵¹ There is at least one difference between the Special Provisions and the EPL PPS. For FCIC Size Name Pot, the Special Provisions list a minimum volume of 0.08 gallon whereas the EPL PPS lists a volume of 0.038 gallon. The Contractor believes the EPL PPS is incorrect since this is the only volume entry to three decimals. The data have been contained in the Special Provisions since the 2000 crop year. The Contractor did not verify the first year the information is contained in the EPL PPS. It may be that the information first was included in the Special Provisions to correct the error. At the very least, the Special Provisions should state the information is in lieu of the information in the EPL PPS if this is the case.

The next special provision is inserted between terms of the provision dealing with the over-report factor and a description of the impact of that factor. The inserted provision modifies sections 6(c)(3) and 6(f)(3) as follows:

- a. The insured is made responsible for paying premium if documentation to support the PIVR is not provided when documentation is requested. The Crop Provisions only deny insurance for such units.
- b. Inadequate documentation does not result in denial of insurance as stated in the Crop Provisions. Under the Special Provision, this condition results in reduction of the indemnity instead. The special provision does not describe how the indemnity is to be reduced.

The next special provision appears to be in lieu of section 6(i) of the Crop Provisions although this is not stated. Section 6(i) states that failure to report the full value of the basic unit will result in a reduction of claim in accordance with section 12(d) (reduction by the under-report factor). The special provision modifies this to state that the value of unreported plants will be calculated separately and then prorated to the reported insured plants to determine Field Market Value A (under-report situations only). The purpose of this step with regard to unreported plants

⁵¹ Navigation: file, select Volume Calculator, select Round or Rectangular, select Size Definitions.

in a basic unit is unclear since Field Market Value A is defined as the value of all insurable plants in the unit prior to the loss. The result is the same whether Field Market Value A is determined for all insurable plants in the unit (reported and unreported) or whether the value of the unreported plants is allocated pro-rata to the reported plants. The extra complicating step does not change the determination of Field Market Value A. The special provision further states the unreported plants will be listed as undamaged in the Appraisal Worksheet. The Contractor interprets this to mean the plants will be included in Field Market Value B at the price listed in the EPL PPS. The language in the Special Provisions is information that likely communicates little to the insured.

This special provision continues to state that a revised PIVR and catalog/price list must be submitted if the plants were acquired after submitting the original PIVR for the crop year. Again, there is no indication if this requirement is in addition to the two allowed revisions. The 30-day delay in insurance attachment that is part of the Crop Provisions is repeated.

The next special provision deals with prohibited plants, which are any plant a state or county classifies as illegal to grow or sell in a county. Such plants may be listed in the EPL PPS but may be considered invasive in some parts of the country. The Contractor believes this provision more properly belongs under section 8 (Insured Crop and Plants) of the Crop Provisions. The provision continues with a header entitled "Required PIVR Revisions" which states that, if such plants are determined to be present, "...we will reduce the inventory value of any affected unit by the lesser of the value of the prohibited plants or the maximum amount possible that will not leave the under-report factor for the unit below 1.00." Nothing in the provision requires the insured to file a revised PIVR although these words are the header for the provision. The provision does not contain a disclaimer that the reduction of inventory value will occur only if the plants have been included for determining the basic unit value.

As stated earlier in this review, the definitions of liners and standard nursery containers are modified in the Special Provisions. This provision has a header of "liners" but refers to both liners and standard nursery containers. There is an addition to the definition of standard nursery container that follows information for determining damage to certain plants. This additional part of the definition should be included with the other parts of the definition so the user does not need to refer to multiple areas of the Special Provisions to obtain needed information.

In general, the Special Provisions can be better organized and more clearly written. Duplications with other parts of the policy should be avoided.

Review of the Nursery Crop Insurance Underwriting Guide (FCIC 24090-1 (02-2011))

This section of the evaluation considers the Underwriting Guide in accordance with the requirements of the Program Evaluation Guide. Comments and recommendations made by the Contractor with respect to the Crop Provisions, the various Endorsements, and the Special Provisions are incorporated by reference and will not be discussed further in this section.

The material in the Guide has brackets around certain material even though there is no apparent need for such punctuation. The instances principally or only involve references to sections of the Crop Provisions, etc. As an example, "Refer to [Section 11(C)(2)]for the insurable plant

types...” appears in one part of the document. This appears to be related to editing of the document that was not removed for issuance. The Contractor notes this condition and will not flag every instance in which it occurs.

Section 1 Purpose and Objective

The Contractor has no comments regarding this section.

Section 2 Cancellation

The Contractor has no comments regarding this section.

Section 3 Definitions

Crop Inventory Valuation Report – The definition is limited to a document created using the FCIC Nursery Inventory Software. The Crop Provisions require only that documentation be provided. The definition should contain a clause stating “or equivalent document” following the words Nursery Inventory Software.

Hardiness Zone Designations – The definition references Appendix A of the EPL. This information may be in Appendix A of a hard copy of the document. The electronic version does not have an Appendix A although the information is contained in the software.

Omitted Plant – The definition does not include the condition wherein a plant is in the inventory, is listed on the catalog/price list, but no price is contained on the catalog/price list. See Special Provisions for this description.

Storage Keys – The definition references Appendix B of the EPL. This information may be in Appendix B of a hard copy of the document. The electronic version does not have an Appendix B although the information is contained in the software.

Section 4 Availability

The Crop Provisions define a nursery as “A business enterprise that grows the nursery plants and derives at least 50 percent of its gross income from the wholesale marketing of such plants.” The term “gross income” typically means the total of income from all sources. The last paragraph of section 4 states “Income from other operations including landscaping, chemical sales, other nursery related products, production of other crops or livestock or any other business enterprise not related to the nursery inventory are not to be included in this calculation.” This is the denominator for determining compliance with the 50 percent requirement. The definition of nursery accordingly should read “A business enterprise that grows nursery plants and for which at least 50 percent of its gross income from sales of plants is derived from transactions in the wholesale market. Income from ancillary services such as landscaping (not including associated sales of plants), sales of chemicals, of other nursery products, of other crops or livestock, or of any other product or commodity shall not be considered to be part of the gross income from sales of plants.”

Section 5 Important Dates

The last paragraph under section 5E states that “The 30-day waiting period does not include the date the required documentation is submitted or the date insurance attaches.” The Crop

Provisions state "... insurance will not attach until 30 days after all such documents have been received..." If the intent is that 30 full days must elapse after the documentation has been received, the Crop Provisions should state this condition clearly. The condition would be more clearly stated if worded "insurance will not attach until the 31st day after receipt..."

The paragraph under section 5F(1)(c) is indented as though it applies only to that subsection. It also applies to (b).

The paragraph states "The rate used to calculate premium will be the rate effective on the last date of the month." This is incorrect. The premium rate applies to the entire year. Premium for less than a year is prorated using the monthly proration factors.

Section 5F(2) states the administrative fee is due for each crop/practice. The Crop Provisions state "An administrative fee ... will be owed for each practice insured."

Section 5G states that insureds must request a transfer of a policy to a different AIP before the cancellation date. A transfer must be completed on or before that date, not just requested.

Section 5G further states "Any policy transferred after the SCD and prior to the cancellation date must have the same coverage levels, *plant types*, etc., that were effective on the SCD" (emphasis added). The Contractor earlier noted that several provisions in the Crop Provisions were not appropriate because coverage levels are chosen by practice, not plant type. Section 3(c)(1)(iv) allows a new plant type to be reported on a revised PIVR. Hence, there seems to no basis to restrict the transferred policy to the same plant types as were insured the previous year. What is not clearly stated in the Crop Provisions is whether a new practice can be added on a revised PIVR (see comments regarding the Crop Provisions, section 3).

Section 6 Coverage Levels

Section 6C(1) states that only one coverage level may be elected for each basic unit. Coverage levels must be elected by practice, which can be a basic unit. However, basic units also may be established by plant type.

Section 6(c)(2) states the price percentage is 55 percent for CAT coverage. However, the Crop Provisions do not define CAT coverage in any specific detail other than in section 12(f)(2) wherein the amount of a loss is multiplied by 0.55 to determine the indemnity for CAT coverage. The Contractor recommended alternative language for section 7(a) of the Crop Provisions for determining the amount of premium.

Section 7 Basis of Coverage

Section 7A(2)(a) states the EPL PPS establishes the maximum insurable plant prices. This is true only if the Nursery Grower's Plant Price Endorsement is not elected.

Section 7A(2)(c) and (e) state the EPL PPS assigns insurable hardiness zones. The defined term is hardiness zone designations.

Section 7B(1), in the final paragraph, states that an application from a new insured will be rejected if the catalog or price list is not submitted with the application. The Crop Provisions do not contain this requirement.

Section 7B(2)(a) states the catalog or price list must be neat. This adjective is not contained in the Crop Provisions.

Section 7B(3) does not contain a date by which the described actions must be taken.

Section 7B(6) is not clear. First, it seems to infer the PIVR may be updated when a seasonal catalog/price list is issued. For example, on May 1, 2012, the insured has a catalog for spring 2012 (expires May 2012) and one for fall/winter 2012-2013. The inference is that the PIVR may be updated when a catalog for spring 2013 is issued. However, the paragraph then states “The nursery catalog or price list in effect for the crop year on the date insurance attaches (for new insureds) or May 1 prior to the start of the crop year (for carryover insureds) will be used for purposes of the revised PIVR or Peak Inventory Endorsement.” The spring 2012 catalog is not in effect on the date insurance attaches.

Section 7C(10)(a) states that a plant valued on the EPL PPS under both the high/wide and caliper measurement systems “may be valued ...” The Special Provisions state that the plant “will be valued”

Section 8 Insurable Plants

Section 8(b) states that, in the event of a failure or loss of the irrigation equipment due to an uninsured cause of loss, “coverage will be denied.” The appropriate terminology is that an uninsured cause of loss appraisal will be performed. Coverage continues to exist for any other insured cause of loss.

The ordering of the text in section 8C(1) needs improvement. It starts by stating a size between listed sizes is rounded with the exception of (a), then moves to (b) which refers to larger sizes. It should be organized as (1) Field grown plant sizes are listed on the Base Price Table of the EPL PPS. (a) Plants smaller than the smallest size listed are not insurable (do not round up). (b) Plants with a size between the listed sizes are rounded to the nearest size to determine the price. (c) Plants larger than the largest size listed ...

Section 8H contains a listing of insurable plants and plant types. However, it is not complete. For example, the requirement of the Crop Provisions that the plants “...meet all the requirements for insurability ...” is not stated. Other requirements imposed by the Crop Provisions also are omitted. The list either should be complete or the user should be referred to the Crop Provisions.

Section 9 Cause of Loss Limitations

Section 9B states the insurable plants grown without over-winterization protection are insured for all causes of loss except cold temperatures. This should state plants grown without the appropriate over-winterization protection are insured. The insured might provide protection but the protection does not meet the minimum requirements of the EPL PPS.

The list of uninsured conditions contained in the Crop Provisions is much more extensive than the information contained in the Guide. The benefit of this section is that it includes information from the Special Provisions. But, since the user is referred to the Crop Provisions for more information about uninsurable causes of loss, the Contractor recommends this section either be expanded to be inclusive of the Crop Provisions or be limited to the content from the Special Provisions with a referral to the Crop Provisions for the remaining uninsurable causes of loss.

Section 10 Conditions of Acceptance

Section 10 essentially sets forth an inspection and review protocol for nurseries and the documentation behind the PIVR. Although the Crop Provisions contain reference to only one mandatory inspection (when a revised PIVR increases liability by more than 50 percent), the Guide imposes multiple required inspections. The section also sets forth standards a nursery must meet before insurance will be accepted. In the review of the Crop Provisions, the Contractor noted an absence of a section for Insurable Nurseries that would parallel the Insurable Acreage section of most policies.

Section 11 Unit Division

The Contractor has no comments on this section.

Section 12 Amount of Insurance

The lead information for the section lists all uses of the amount of insurance except determination of the amount of premium.

Section 12A states “For liners, the amount of insurance is also multiplied by the survival factor shown on the Special Provisions of Insurance.” The Contractor noted the absence of the survival factor for certain calculations and recommended that section 6 of the Crop Provisions be amended to include a provision that the value of liners would be multiplied by the survival factor for determining the basic unit value reported on that document. The statement in section 12A of the Guide could be misinterpreted since only the value of the liners that is included on the PIVR is multiplied by the survival factor.

Section 12C has duplicative information included. The insured is required to list the total value of all plants by plant type on the PIVR regardless of whether a policy level basic unit is elected or basic units by plant type are elected. Thus, the calculation of premium is the same regardless of the choice of unit structure. The sentence regarding total value of liners is not a part of premium calculations.

Section 13 Penalties for Misreporting

Section 13A states the reported inventory value must at least equal the actual inventory value at the time of loss determination. In the comments regarding the Crop Provisions, the Contractor noted that this document does not contain any specific guidance regarding the basis for the inventory value to report. Is the inventory value to be based on the plants and sizes that exist on the sales closing date, or is it to be based on the expected sizes at the time of sale?

The terms defined in the Crop Provisions should be used in the Guide. Rather than state “value of the inventory at the time of loss determination,” the Guide should use the term Field Market

Value A. At the very least, this term should be in parentheses following the word determination. As stated, the description is very imprecise. Does value of the inventory at the time of loss determination refer to Field Market Value A or to Field Market Value B? Both determinations are made at the time of loss adjustment.

Section 13C contains language relating to the pro-rata allocation of the value of unreported plants. As the Contractor noted earlier, Field Market Value A is defined as the value of undamaged insurable plants prior to the loss, not the value of undamaged insured plants. The total of Field Market Value A is the same if the value of all insurable plants is determined or whether the value of unreported insurable plants is determined separately and allocated pro-rata to the reported plants.

Section 14 PIVR

Section 14C(2) states “The PIVR must be reflective of the actual inventory on date submitted.” The Crop Provisions only limit the PIVR to 110 percent of actual inventory for CAT coverage. There is no condition stated for accuracy of the PIVR as of a specific date for additional coverage stated in the Crop Provisions. The Contractor noted this condition earlier.

Section 15 Written Agreements for Unlisted Plants

Section 15A(2) describes a condition that does not require a written agreement. Hence, it is misplaced.

Section 16 Peak Inventory Endorsement

The Contractor has no comments on this section.

Section 17 Nursery Grower’s Price Endorsement

The Contractor has no comments on this section.

Section 18 Rehabilitation Endorsement

Section 18A does not state the endorsement is continuous.

Section 18C states the maximum rehabilitation payment per loss occurrence. It does not state the maximum payment for a crop year.

Section 19 Deductibles

The Contractor has no comments on this section.

Exhibit 1 PIVR

REPORTING BY PRACTICE – For CAT only – The text states “In addition to reporting the inventory values for each plant type, CAT policies must report for each practice insured ...”

This should be worded to pertain to policies that chose the CAT level of protection for a practice. A policy may have additional protection for one practice and CAT for the other.

REPORTING BY BASIC UNIT on page 47 – The text states “The survival factor if the basic unit is liners multiplied by...” If the insured chooses basic unit by share or chooses CAT for the practice, liners will be one line entry for the basic unit, it will not constitute the basic unit.

REPORTING BY BASIC UNIT on page 47 – The text states “The Coverage Level (one level per crop/county) multiplied by...” This appears to be a reference to the column labeled “Coverage Level” on the form. Regardless, the parenthetical expression applies only to CAT or to basic units by share.

REPORTING BY BASIC UNIT on page 47 – The instructions appear to be an agglomeration of original PIVR and revised PIVR with little or no distinguishing information.

UNDERSTANDING BY INSURED on page 48 – The purpose of this information is not clear. It does not appear on the form in this format. Some of this language is on the form, some is not.

EXAMPLE INVENTORY RECORD SUBMITTED on page 48 – The purpose of this statement is not clear. There is no inventory record.

EXAMPLE: Reporting plant inventory values under basic units by share on page 48 – Some data are included under this heading. However, the examples omit the 1.00 price factor for additional coverage. The examples would have greater benefit if these were included on a completed form. In addition, an example of a completed form for basic units by plant type would be useful.

Exhibit 2 – Peak Inventory Endorsement

Statement on page 52: “No more than one endorsement may be purchased for each basic unit in a crop year unless a loss occurred and the loss was to inventory covered by the Peak Inventory Value Report.” This statement does not contain the condition that the nursery must have been restocked.

Statement on page 53: “Peak Inventory Coverage Commencement Date – (May be any date within the crop year selected by the insured.) This will be date coverage begins. Statement does not include limitation that this date must be at least the 31st day after the form has been received by the AIP.

Exhibit 3 – Nursery Underwriting Inspection Report

A high degree of knowledge of the nursery business is required to adequately complete this report.

Exhibit 4 – Minimum and Maximum Plant Sizes by Plant Type

The Contractor has no comments on this Exhibit.

Exhibit 5 – FCIC Container Sizes

The Exhibit reproduces information contained in the EPL PPS.

Exhibit 6 Nursery Catalog / Price List Checklist

The Checklist is a form for the AIP reviewer to document that the standards contained in section 6(k) of the Crop Provisions are met.

Review of the Nursery Loss Adjustment Standards Handbook (FCIC-25750)(1-2011)

Comments and recommendations made by the Contractor with respect to the Crop Provisions, the Endorsements, and the Underwriting Guide are incorporated by reference.

Section 1 Introduction

The Contractor has no comments.

Section 2B(4) Definitions

Amount of Insurance – The definition provided herein differs from both the Crop Provisions and the Underwriting Guide.

Marketable – The definition expands the original definition contained in the Crop Provisions by adding a definition of “market.” The insured has no access to this information. The information also is not contained in the Underwriting Guide.

Nursery – The Underwriting Guide expands on the income to count in determining the 50 percent threshold.

Section 3 Insurance Contract Information

Section 3A(2) contains the statement “If the insured selects basic units by plant type and submits a revised PIVR to add a new plant type basic unit that was not reported on the initial PIVR, the revised PIVR is not considered one of the two allowable revisions.” This expands on the Crop Provisions. It also is not contained in the Underwriting Guide. The LASH is not part of the policy as defined by the Basic Provisions. Accordingly, it is not appropriate to use it to establish policy terms. The Contractor noted earlier that numerous references to mandatory revisions of the PIVR are contained in the policy materials but there was no indication whether these were constrained by the policy language restricting the number of PIVR revisions.

Section 3A(3) does not mention the right of the insured to submit an electronic version of the catalog or price lists as authorized by the Underwriting Guide.

Section 3B(7) states “(It is not practical if the cost of rehabilitation is greater than the value of the plant prior to being damaged).” The Rehabilitation Endorsement and the Underwriting Guide state “(It is not practical if the costs of rehabilitation are greater than the value of the plant).” The LASH is not part of the policy as defined by the Basic Provisions. Accordingly, it is not appropriate to use it to establish policy terms. Admittedly, the terminology in the Rehabilitation Endorsement is vague and ambiguous. What value? What value when? Suppose a plant has a market value of \$10 prior to loss and an appraised value of \$5 after loss. According to the LASH, if the cost of rehabilitation exceeds \$10, it is not practical to rehabilitate. However, incurring a cost of \$10 to rehabilitate a \$10 plant seems unreasonable when the indemnity would be, at most, \$2.50.⁵² Moreover, according to section 2(d)(2) of the Rehabilitation Endorsement, the maximum rehabilitation payment is 7.5 percent of the value, based on insurable plant prices determined in accordance with section 6 of the Crop Provisions, of the plants that were rehabilitated. Suppose the basic unit consists of 10,000 plants worth \$10

⁵² Assuming a 75 percent coverage level.

each determined in accordance with Section 6. The maximum rehabilitation payment is \$7,500 (7.5 percent of \$100,000) multiplied by coverage level, or a maximum of \$0.5625 per plant. Since the policy limits the maximum payment to such a small amount, it seems unreasonable to state that \$10 per plant is a reasonable amount to determine practicability of rehabilitation.

Section 3C(1) states in several places that the under-report factor contained in the Crop Provisions is used in determining the amount of the maximum rehabilitation payment. The Rehabilitation Endorsement more correctly states that the under-report factor described in the Crop Provisions is used.

Section 3D(2) states that the EPL PPS software cannot be used to create the “Rehabilitation Payment Report.” No such report is described in the LASH or any other documents for the Nursery Program. The statement may be referring to the Rehabilitation Payment Worksheet depicted on page 17 of the LASH.

Section 4E does not contain a sub-section detailing the standards that apply to the form.⁵³

Section 4E Item 4 directs the loss adjuster to enter the basic unit number from the PIVR. The instruction normally directs entry of this information “after it is verified to be correct.”

Section 4E Item 6 refers to Peak Inventory Value Report(s). Only one Peak Report can be in effect at any time.

Section 4E Item 11 references adjustment of the previous losses by the over-report factor. This variable is not referenced in section 4C of the LASH (Maximum Rehabilitation Payment) or in the Rehabilitation Endorsement. Both of these citations reference only the under-report factor. In addition, the Special Provisions for 2012 do not contain references to adjusting previous losses by the over-report factor for the purpose of establishing the maximum rehabilitation payment.

Section 4E Item 11 directs the loss adjuster to enter the under-report factor for the unit which is defined as the Reported Basic Unit Value minus previous losses adjusted for any under-report factor divided by Fair Market Value A. The term Reported Basic Unit Value appears to refer to Reported Basic Unit Amount, which is an entry in Item 6. The form does not contain the information related to previous losses or previous under-report factors.

The Contractor completed the form on page 17 and found the entries to be correct.

Section 5 Peak Inventory Value Report Information

The Contractor has no comments on this section.

Section 6 Nursery Grower’s Price Endorsement Information

The Contractor has no comments on this section.

⁵³ The Contractor notes that Appraisal Worksheets and other documents illustrated in other Loss Adjustment Standards Handbooks have a section detailing the form standards that apply to each of the forms used in determining the amount of an appraisal or any payment.

Section 7 Nursery Appraisals

Section 7A(1) contains three duties that are identified as being “in addition to” those duties enumerated by Section 14 of the Basic Provisions. All three are enumerated in the Basic Provisions – section 14(a)(1), 14(a)(2), and 14(a)(4). Section 14(a)(4) has more specific duties than those identified in the LASH.

Section 7A(2) contains restrictions upon the insured with regard to any damaged plants. These restrictions are the same as those contained in section 14(b) of the Basic Provisions.

Section 7D(1) first states: “When a covered loss occurs, an inventory must be conducted of the damaged and undamaged plants to determine the amount of the loss. All plants within the damaged basic unit must be accounted for.” It also states: “If the number or appropriate value of UNDAMAGED plants is not known or is questionable at the time of the loss, they must also be inventoried.” However, the first two sentences already state that all plants, damaged or undamaged, must be inventoried. The last sentence only serves to confuse.

Section 7G(8) describes a process for pro-rating the value of unreported plants to the value of reported plants. The Contractor earlier observed that the result of this pro-rata allocation is the same as that obtained by including all plants, reported and unreported, in the determination of FMV A. The definition of FMV A states it is the value of undamaged insurable plants. The plants are insurable even if not reported. The section then proceeds to an example which allocates the value of unreported plants in one basic unit pro-rata to another basic unit. This example is appropriate if the entire unit were unreported and is consistent with normal loss procedures in that case.

Sections 7H(3) and (4) essentially state the same thing but include a conflict. Both state the value of a damaged plant remains at the appraised value until the end of the recovery period. This treatment is not included in the definitions of Field Market Values A and B. Both definitions state the value of a plant is the lower of the EPL PPS or the catalog (in absence of NGPE). Subsection (3) states the value of the plant never changes during the recovery period, while (4) states it may be reduced further by subsequent damage.

Section 7H(5) contains the statement: “The FMV-A value for the 3-gallon *Hibiscus Syriacus* ‘Morning Star’ price for the February 1st loss event is \$5.74, which is equal to the previous FMV-B remaining value price.” As noted previously, this treatment is not consistent with the definition of Field Market Value A.

Section 9C Item 17b contains the statement: “If more than one price is listed in EPL PPS for the same plant (e.g., a price by both caliper and height), refer to the SP and the Nursery Underwriting Guide for determining which price and size entry to use.” Section 7E of the LASH contains detailed instructions for determining the applicable price.

Section 11E Item 18c contains a statement that the basic unit liability is the amount prior to reduction for price election percentage. Section 3(c) of the Crop Provisions states the price election percentage will be 100 percent. The premium is defined as the amount of insurance multiplied by a premium rate and any adjustment factors. Amount of insurance is defined as the

value from the PIVR multiplied by the coverage level percent. The indemnity (Section 12) is calculated at the full amount for 50 percent coverage and then reduced 45 percent in step 12(f)(2).

Summary

The nursery crop program is complex and seemingly convoluted. There are a number of contradictions and omissions within and among documents. Policy terms are included in documents that are not part of the contract as defined by the Basic Provisions. The Crop Provisions thus do not adequately establish the obligations of the insured and the insured does not have access to the information that establishes those obligations. For example, the LASH establishes an obligation that the basic unit value as documented on the PIVR will equal the actual value of the inventory on the date the PIVR is filed; the Crop Provisions establish this obligation only for CAT coverage. The Crop Provisions state that the insured may file not more than two revised PIVR; the LASH states that certain revisions are not considered to be included in the two allowable revisions. There are several other instances of lack of clarity in the Crop Provisions. If this program is continued, a substantial revision of the Crop Provisions should be undertaken to provide greater clarity so the obligations of the insured are better defined. Given the potential litigation exposure the current inconsistencies may permit, the Contractor believes revisions merit a high priority.

VI.B. Policy File Review

The Contractor was provided access to a sample of randomly selected files for policies covered under the Nursery Program. The policies represented production insured in California, Florida, Maryland, North Carolina, Oregon, and Texas during the 2010 crop year. Not surprisingly, the majority of the files documented insurance of production in Florida. Each file was carefully examined for content, structure, and consistency with Nursery Program underwriting rules. Nine files contained useful information for review. One file contained a letter indicating the policy was no longer active and no materials were available for the 2010 crop year. The longest policy file incorporated more than 400 pages of documentation. The typical file length was closer to 50 pages.

Most of the files the Contractor reviewed documented coverage at the CAT level. Insurance documents for operations with only container production, only field-grown production, and with both practices were reviewed. It was interesting to note when both practices were documented for a single operation, the proportions of production managed under each practice were not balanced (i.e., the production was distributed with 99 percent field grown production and 1 percent containerized production or 99 percent containerized production and 1 percent field grown production).

Files reviewed documented operations with as few as a single insurable type and as many as 14 insurable types. Most of the catalogues were for the 2009 calendar year with a few for 2010. There was one 2011 catalogue apparently misfiled with the 2010 policy materials. The operations whose insurance documents were reviewed had catalogues as short as a single page (2 operations with 10 and 22 plant variety/size entries, but with total plant inventories between \$2 million and \$5 million) and as long as 52 pages (approximately 3,200 plant variety/size entries with a total plant inventory value of almost \$23 million).

Documentation of onsite inspections was included in half of the policy files. The remaining policies appeared to be continuing policies and documentation of the management practices may have been incorporated into the prior years' files. Of the maps and/or aerial photographs documenting the nursery locations, several were on a scale that limited their utility in identifying the location and structure of the nursery. These appear to have been downloaded from internet mapping sites. In the copies provided to the Contractor, the precise location and boundaries of the nursery was not evident.

The Contractor observed occasional updates on policy documents. Some of these changes were not initialed by the insured, as required under the CIH. Generally these updates were changes made in pen to printed documents. It seems likely these changes were made prior to the insured signing the document; while this approach may reflect an effort by the agent to limit the paperwork burden on the insured, it should be avoided. There is a risk to not carefully documenting the acceptance of the change by the insured.

The Contractor was pleased to note one AIP had caught an improper Federal tax ID in a policy file (the nursery was incorporated with multiple owners, but an individual Social Security number had been provided by the insured and accepted by the agent/agency). The Contractor also approved the careful documentation of uninsured damage in a second policy file.

The largest policy had several issues of concern. The policy materials included an enterprise unit endorsement. The policy (or policies) had been transferred between two AIP's. There were nurseries in five counties. One AIP managed the insurance as five separate policies, while the second treated the production as a single operation. This was further complicated because one of the locations was identified as both a nursery and a distribution center. Therefore, it appeared harvested production was being moved between locations and was being treated as insurable following the move.

In one file, damaged plants were listed in the Crop Inventory Valuation Report (CIVR). The price for these plants was the same as that listed for the variety/size in the producer's catalogue. It appeared that either the CIVR value was too high or the producer was selling damaged merchandise without identifying it as such. The Contractor believed this price attribution should have had better documentation in the policy file.

Finally, in one policy file that included documentation of an adjusted claim, a set of sales receipts was used to account for discrepancies in the PIVR inventory and the FMV A inventory. Some of the receipts included no address or phone number for the purchaser of the plants; it appears "regular" customers whose address and phone number were known to the seller were identified on the receipt by name only. This illustrates an inconsistency between what is reasonable behavior for the business (treating well known customers familiarly) and what is required for the insurance (full documentation of the identity, address, and contact information of purchasers of all inventory that has left the premises). In the case of a large operation, it is possible that hundreds or perhaps even thousands of receipts might be required to document sold inventory.

The sample of policy files provided to the Contractor by RMA demonstrates an appropriate level of rigor in meeting the complex record-keeping requirements of the Nursery Program. While there are occasionally issues that merit attention, these issues do not appear to be either systemic or wide-spread.

SECTION VII. UNPUBLISHED DATA REPORT

This section of the evaluation report addresses the requirement that:

“The seventh section of the report shall contain the results of the Unpublished Data Report findings detailing the statistical analysis of the performance of the crop program.”⁵⁴

The body of the report contains a high-level summary of the Summary of Business (SOB) data. Detailed data are contained on a disc that accompanies this evaluation. This section further incorporates a high-level review of the rating approach used for the Nursery Program.

VII.A. Insurance Experience

This section includes findings detailing the statistical analysis of the performance of the crop program as described in the Program Evaluation Handbook:

“The Insurance Experience tables based on the Summary of Business (SOB) data ... reveal trends, patterns and unique circumstances that should be analyzed further. The data, e.g. numbers of insurance policies, participation, liabilities, premiums, indemnities, and loss ratios should be analyzed over ...and further analyzed if changes were made to the program during the evaluation period. Patterns of losses should be analyzed further, including causes of loss and differences between counties or regions. Similarly, differences in participation, buy up rates, and loss ratios between counties, or regions and states, or between different sizes of policy units should be determined and explanations pursued. Recent experience should be compared to analogous data for other crop policies to identify anomalies, if any. Participation in the insurance program by type and level (CAT, RBUP) should be analyzed.”⁵⁵

Aggregate Experience 1999-2011

Nursery constitutes a small part of the total crop insurance program for all insurance parameters but one: its share of the total liability. Between 1999 and 2010, nursery averaged 6 percent of the total program liability, but only 0.3 percent of policies earning premium, 0.2 percent of units earning premium, and 1.2 percent of premiums earned. Nursery’s share of total premium was much lower than its share of total liability because the average earned premium rate was so much lower – only about one-fifth of the average earned premium rate for all other crops. This was due to two factors: a very high percentage of business at the CAT level of coverage and a much lower overall premium rate structure, further exacerbated by the lack of availability of optional units, which garner higher premiums.

Nursery also had a very small share of the indemnities paid by the crop insurance program in total. Less than 0.1 percent of policies and units earning premium were indemnified. Nursery indemnities constituted 1.6 percent of all indemnities paid by the program between 1999 and 2010.

⁵⁴ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 12.

⁵⁵ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 15.

Tables 4, 5, and 6 contain the summary of business data for all nursery practices, container grown nursery practice, and field grown nursery practice, respectively.⁵⁶ These data represent all years of experience since the Crop Provisions were revised to include both practices.

⁵⁶ A small amount of the limited level of coverage is included in the total for additional coverage.

**Table 4. Summary of Business Data by Coverage Type for All Practices Nursery
1999 through 2011 Totals and Summary Information**

Coverage Type	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Additional	13,935	36,672	2,342	6,020	9,925,789	348,294	603,211	0.035	1.732	0.061
CAT	32,458	34,956	589	593	31,188,583	415,653	127,371	0.013	0.306	0.004
Total	46,393	71,628	2,931	6,613	41,114,371	763,946	730,583	0.019	0.956	0.018

Source: The Contractor's Underwriting Department after RMA insurance experience data.

**Table 5. Summary of Business Data by Coverage Type for Container Practice Nursery
1999 through 2011 Totals and Summary Information**

Coverage Type	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Additional	11,124	28,525	1,880	4,909	6,836,405	263,193	403,871	0.038	1.535	0.059
CAT	24,557	25,296	306	307	17,718,228	265,069	53,048	0.015	0.200	0.003
Total	35,681	53,821	2,186	5,216	24,554,633	528,261	456,919	0.022	0.865	0.019

Source: The Contractor's Underwriting Department after RMA insurance experience data.

**Table 6. Summary of Business Data by Coverage Type for Field Grown Practice Nursery
1999 through 2011 Totals and Summary Information**

Coverage Type	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Additional	5,491	9,753	719	1,159	3,089,384	85,101	199,340	0.028	2.342	0.065
CAT	14,690	15,120	324	327	13,470,354	150,584	74,323	0.011	0.494	0.006
Total	20,181	24,873	1,043	1,486	16,559,739	235,685	273,664	0.014	1.161	0.017

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Most (approximately 70 percent) of policies earning premium chose the CAT level of coverage. These results are about the same for both container and field grown practices. The container practice was the most frequently insured practice, with nearly 36,000 policy-years of experience.⁵⁷ The loss ratio (dollar weighted) was less than 1.00 for the entire program, but varied between the two practices. The loss ratio for the field grown practice was over 1.00.

The average earned premium rate was lowest for the field grown practice even though it had the worst experience for this period. The loss cost ratio of additional coverage for field grown practice was only marginally higher than for container practice, but the earned premium rate was substantially lower, causing a higher loss ratio for the field grown practice. It is worth noting the additional coverage has had relatively high loss ratios under both practices.

The reader may notice that the sum of the counts of policies and units in Tables 5 and 6 exceed the numbers contained in Table 4. This occurs because the practices are separately insurable – one practice may be insured and the other not insured, both may be insured with additional coverage or CAT coverage, or one may be insured with CAT coverage and the other with additional coverage, or the nursery may have only one practice. Policies and units are separately counted according to the insured practice in the two detailed tables but are counted at the aggregate level for the summary table. Dollar amounts do sum to the total.

Liability per policy was about one-third larger for CAT policies even though the coverage level is lower than for additional coverage policies along with a substantially lower percentage of the price.⁵⁸ Said another way, the larger the nursery operation, the greater the probability the insurance was at the CAT level. Consistent with most other crops and the aggregate performance of the crop insurance program, the loss ratio and loss cost ratio for CAT policies was only a small percentage of the equivalent parameters for additional coverage. Liability, premium, and indemnity per policy and per unit are included in Tables 7 and 8, respectively.

⁵⁷ The sum of the policies insured and with a loss is greater than the total included in Table 4 because some policies insured both container and field grown practice. Hence, those policies are counted only once in the aggregate but are counted separately by practice.

⁵⁸ Although the insurance prices are not reduced to 55 percent as is the case with other crops, the total liability at the 50 percent coverage level is reduced by 45 percent for CAT protection.

Table 7. Liability, Premium, and Indemnity per Policy Earning Premium Nursery 1999 through 2011

Coverage Type	All Practices			Container Practice			Field Grown Practice		
	Liability	Premium	Indemnity	Liability	Premium	Indemnity	Liability	Premium	Indemnity
	(1,000 dollars)								
Additional	712.3	25.0	43.3	614.6	23.7	36.3	562.6	15.5	36.3
CAT	960.9	12.8	3.9	721.5	10.8	2.2	917.0	10.3	5.1
Total	886.2	16.5	15.7	688.2	14.8	12.8	820.6	11.7	13.6

Source: The Contractor’s Underwriting Department after RMA insurance experience data.

Table 8. Liability, Premium, and Indemnity per Unit Earning Premium Nursery 1999 through 2011

Coverage Type	All Practices			Container Practice			Field Grown Practice		
	Liability	Premium	Indemnity	Liability	Premium	Indemnity	Liability	Premium	Indemnity
	(1,000 dollars)								
Additional	270.7	9.5	16.4	239.7	9.2	14.2	316.8	8.7	20.4
CAT	892.2	11.9	3.6	700.4	10.5	2.1	890.9	10.0	4.9
Total	574.0	10.7	10.2	456.2	9.8	8.5	665.8	9.5	11.0

Source: The Contractor’s Underwriting Department after RMA insurance experience data.

Table 9 provides an overview of the concentration of business for additional coverage, CAT, and combined by year. The volume of business peaked in 2007 in terms of policies and units earning premium and liability. Business has been decreasing since those years and currently is at the lowest level for the history of the program in terms of policies earning premium and liability for the program. Additional coverage remains at a higher level than early in the program while CAT is lower. Prior to the 2006 Crop Provisions, a basic unit by practice could be divided into optional units by plant type for additional coverage policies. The 2006 Crop Provisions allowed a basic unit by practice to be split into basic units by plant type. This action reduced the amount of premium for unit division and appears to have encouraged more units. Note the significant increase in the number of units in 2006.

Table 9. Distribution of Liability, Policies Earning Premium, and Units Earning Premium by Year, 1999 through 2011

Year	Liability			Policies Earning Premium			Units Earning Premium		
	Additional	CAT	Combined	Additional	CAT	Combined	Additional	CAT	Combined
	(percent)								
1999	2.5	6.8	5.8	3.2	6.9	5.8	1.3	6.5	3.9
2000	4.1	6.2	5.7	4.6	8.3	7.2	2.1	7.9	4.9
2001	4.8	6.8	6.3	5.8	8.5	7.7	2.7	8.1	5.3
2002	5.7	7.8	7.3	7.3	8.9	8.4	3.3	8.7	5.9
2003	7.0	8.3	8.0	7.7	9.2	8.8	3.5	9.0	6.2
2004	8.0	9.0	8.8	8.4	9.4	9.1	4.1	9.4	6.7
2005	9.9	9.3	9.5	9.4	9.7	9.6	4.6	9.8	7.1
2006	9.7	8.7	8.9	9.7	8.4	8.8	13.0	8.6	10.8
2007	12.9	8.8	9.8	12.3	7.8	9.1	16.8	8.2	12.6
2008	13.2	8.7	9.8	11.4	7.6	8.7	16.5	7.7	12.2
2009	8.4	7.6	7.8	7.9	5.8	6.4	12.6	6.2	9.5
2010	7.5	6.6	6.8	6.6	5.2	5.6	10.3	5.4	7.9
2011	6.2	5.4	5.6	5.6	4.2	4.6	9.1	4.5	6.8

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Summary of business data by year are included in Table 10. The average earned premium rate has increased over time, from 1.8 percent early in the experience period to 2.0 - 2.2 percent in recent years. The average earned rate was substantially lower for the 2006 crop year since it was a shortened year due to the change in crop year from October 1 – September 30 to June 1 – May 31. The premium was prorated for that year according to the proration factors included on the actuarial documents for late applications, revised PIVR, and Peak Insurance Endorsement periods. This also happened to be the highest loss year in the entire experience period. If the average earned premium rate for that year had been 1.8 percent as it was in the immediately preceding years, the loss ratio for that year would have been 3.89, not 5.80. Alternatively, an average earned premium rate in 2006 at the level of the succeeding years (2.2 percent) would have reduced the loss ratio for that year to 3.09.

Table 10. Summary of Business Data for Nursery 1999 through 2011 All Practices Crop Years and Summary Information

Crop Year	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
1999	2,695	2,763	43	47	2,367,529	29,994	6,171	0.013	0.206	0.003
2000	3,347	3,535	188	363	2,356,727	43,989	47,101	0.019	1.071	0.020
2001	3,556	3,809	238	485	2,599,386	47,199	42,073	0.018	0.891	0.016
2002	3,898	4,243	94	240	3,006,447	53,897	9,175	0.018	0.170	0.003
2003	4,061	4,460	161	466	3,282,964	59,840	26,138	0.018	0.437	0.008
2004	4,241	4,794	431	843	3,597,695	64,032	83,503	0.018	1.304	0.023
2005	4,462	5,117	465	1,241	3,888,377	68,760	137,168	0.018	1.995	0.035
2006	4,093	7,763	598	1,596	3,673,547	43,576	252,719	0.012	5.799	0.069
2007	4,243	9,048	248	408	4,010,257	89,184	43,351	0.022	0.486	0.011
2008	4,047	8,745	83	155	4,036,440	89,820	5,838	0.022	0.065	0.001
2009	2,988	6,784	138	287	3,192,935	65,032	34,584	0.020	0.532	0.011
2010	2,615	5,675	185	361	2,791,903	58,833	38,897	0.021	0.661	0.014
2011	2,147	4,892	59	121	2,310,164	49,790	3,865	0.022	0.078	0.002
Total	46,393	71,628	2,931	6,613	41,114,371	763,946	730,583	0.019	0.956	0.018
Simple Average	3,569	5,510	225	509	3,162,644	58,765	56,199	0.019	1.053	0.017

Source: The Contractor's Underwriting Department after RMA insurance experience data.

The average earned premium rate also was low in 1999 relative to the other years in the experience period. The experience for that year represents a summation of the final year of the previous container-only insurance program and the first year of the new combined program. Most of the experience for 1999 was accrued under the new program. The earned premium rate was only 0.88 percent for that program because 90 percent of the premium was at the CAT level in 1999. In 2000, the CAT premium represented only 60 percent of the total, resulting in a higher average earned premium rate.

The loss ratio has been less than 1.00 on a dollar weighted basis but exceeded 1.00 on a simple average basis when the effects of the short 2006 crop year are not considered. Adjusting the premium to reflect this non-structural aspect of the program reduces the dollar weighted loss ratio to 0.930 and the simple average loss ratio to 0.907 if the average premium rate is assumed to be 1.8 percent. With a premium rate of 2.2 percent, the dollar weighted loss ratio would have been 0.91 and the simple average loss ratio would have been 0.85.

The loss ratio was quite high for the 2006 crop year even if the premium rate is adjusted to eliminate the effects of the shortened crop year. This was due to hurricane activity and the result is not abnormal. For example, the loss ratio for citrus trees for the 2005 crop year was 3.45 with an earned premium rate of 2.3 percent. These crop years include the same risk period for hurricanes: for orange trees, the crop year was November 21, 2004 to November 20, 2005 while for nursery the crop year was June 1, 2005 through May 31, 2006. The hurricane risk period of June 2005 through October 2005 falls within these crop year definitions. Virtually all indemnities for the 2006 nursery crop year were due to hurricane and virtually all were paid in Florida (see the section on Review of Cause of Loss for more detail). Hurricane indemnities were \$233 million and represented 92 percent of total indemnities for that year. The high loss ratio for nursery thus is consistent with the weather events for the 2006 crop year.

The frequency of loss, measured as the units indemnified divided by units insured, varied from 1.8 percent (2008) to 24.3 percent (2005) and averaged 9.2 percent. This outcome is an artifact of the structurally induced increase in unit count in 2006, when this measure of loss frequency was lower but indemnities, the loss ratio, and the loss cost ratio were much higher. Using number of policies indemnified as a measure of severity results in a range from 1.6 percent (1999) to 14.6 percent (2006) and an average of 6.3 percent.

The same patterns emerge when the data are examined by practice (Tables 11 and 12). Business peaked in the middle of the decade of the 2000s and has declined significantly since. The substantially lower average premium rate in 1999 was due to the field grown practice. This was the first year of insurance for the practice and most producers who elected to insure chose the CAT level. The earned premium rate for both practices declined in 2006 due to the short crop year, and the percentage of decline was nearly the same (-33 percent for container and -32 percent for field grown).⁵⁹ This is to be expected since the proration factors were the same for both practices.

⁵⁹ These percentages are calculated from un-rounded numbers, not the rounded data included in the table.

**Table 11. Summary of Business Data for Container Practice Nursery
1999 through 2011 Crop Years and Summary Information**

Crop Year	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
1999	2,266	2,282	35	37	1,136,033	21,700	4,186	0.019	0.193	0.004
2000	2,691	2,713	164	310	1,358,965	28,565	28,866	0.021	1.011	0.021
2001	2,870	2,910	208	424	1,552,917	32,059	37,701	0.021	1.176	0.024
2002	3,102	3,142	79	211	1,805,923	37,138	8,643	0.021	0.233	0.005
2003	3,193	3,235	125	412	1,995,805	41,073	20,842	0.021	0.507	0.010
2004	3,278	3,379	303	633	2,110,588	42,856	42,982	0.020	1.003	0.020
2005	3,410	3,499	414	1,067	2,255,018	45,415	114,978	0.020	2.532	0.051
2006	3,091	5,923	466	1,274	2,143,224	28,769	166,725	0.013	5.795	0.078
2007	3,175	7,052	99	193	2,440,198	63,816	11,328	0.026	0.178	0.005
2008	3,006	6,742	60	116	2,429,946	62,355	3,870	0.026	0.062	0.002
2009	2,170	5,111	73	172	2,010,105	44,616	6,410	0.022	0.144	0.003
2010	1,889	4,199	117	263	1,778,674	42,638	8,690	0.024	0.204	0.005
2011	1,540	3,634	43	104	1,537,237	37,261	1,697	0.024	0.046	0.001
Totals	35,681	53,821	2,186	5,216	24,554,633	528,261	456,919	0.022	0.865	0.019
Simple Average	2,745	4,140	168	401	1,888,818	40,635	35,148	0.021	1.006	0.018
Percent of All Nursery	77	75	75	79	60	69	63	115	96	106

Source: The Contractor's Underwriting Department after RMA insurance experience data.

**Table 12. Summary of Business Data for Field Grown Practice Nursery
1999 through 2011 Crop Years and Summary Information**

Crop Year	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
1999	759	765	12	12	1,231,497	8,294	1,985	0.007	0.239	0.002
2000	1,316	1,320	36	57	997,761	15,424	18,235	0.015	1.182	0.018
2001	1,436	1,441	46	62	1,046,469	15,139	4,371	0.014	0.289	0.004
2002	1,637	1,654	21	29	1,200,524	16,759	532	0.014	0.032	0.000
2003	1,793	1,821	48	57	1,287,159	18,767	5,295	0.015	0.282	0.004
2004	1,918	1,951	178	222	1,487,107	21,176	40,521	0.014	1.914	0.027
2005	2,094	2,138	114	182	1,633,359	23,346	22,190	0.014	0.951	0.014
2006	1,869	2,560	228	360	1,530,322	14,807	85,994	0.010	5.808	0.056
2007	1,938	2,807	160	225	1,570,059	25,368	32,023	0.016	1.262	0.020
2008	1,843	2,762	25	40	1,606,494	27,465	1,968	0.017	0.072	0.001
2009	1,410	2,205	77	120	1,182,829	20,416	28,174	0.017	1.380	0.024
2010	1,212	1,900	81	103	1,013,229	16,196	30,207	0.016	1.865	0.030
2011	956	1,549	17	17	772,927	12,529	2,168	0.016	0.173	0.003
Totals	20,181	24,873	1,043	1,486	16,559,739	235,685	273,664	0.014	1.161	0.017
Simple Average	1,552	1,913	80	114	1,273,826	18,130	21,051	0.014	1.188	0.016
Percent of All Nursery	44	35	36	22	40	31	37	77	113	94

Source: The Contractor's Underwriting Department after RMA insurance experience data.

The two practices differ in terms of the behavior of the loss ratio. Since the most likely causes of loss for each practice have some unique characteristics, this is to be expected. The field-grown practice has markedly worse loss ratios in 2004, 2007, 2009, and 2010, and better loss ratios than container practice in 2001 and 2005. The experience of the two practices is similar in the other years, even including the extreme loss year of 2006. To facilitate comparisons, Table 13 presents the loss ratios side-by-side along with a restatement with adjusted premium rates for 2006 using the 2005 premium rates. With the adjustment, the dollar weighted and simple average loss ratios for container practice are very nearly the same at about 0.85, but the two measures of the loss ratio continue to differ for field grown practice. Both measures of the loss ratio remain over 1.00 for that practice.

Table 13. Loss Ratio Comparison by Practice by Year

Crop Year	Actual		2006 Adjusted	
	Container	Field Grown	Container	Field Grown
1999	0.193	0.239	0.193	0.239
2000	1.011	1.182	1.011	1.182
2001	1.176	0.289	1.176	0.289
2002	0.233	0.032	0.233	0.032
2003	0.507	0.282	0.507	0.282
2004	1.003	1.914	1.003	1.914
2005	2.532	0.951	2.532	0.951
2006	5.795	5.808	3.863	3.932
2007	0.178	1.262	0.178	1.262
2008	0.062	0.072	0.062	0.072
2009	0.144	1.380	0.144	1.380
2010	0.204	1.865	0.204	1.865
2011	0.046	0.173	0.046	0.173
Dollars Weighted	0.865	1.161	0.842	1.127
Simple Average	1.006	1.188	0.858	1.044

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Experience by State 1999 through 2011

This section of the data analysis begins to drill into the data to gain a better understanding of the insurance experience. Nursery insurance was in force in 49 of the 50 states between 1999 and 2011. At least one policy earned premium in nearly every state each year. Indemnities were paid in 36 states although 96 percent of indemnities were paid in only 4 states.

Table 14 presents the summary of business data for the top eleven states ranked in terms of liability. Eleven states are included since the total liability for the tenth and eleventh place was very nearly the same. These 11 states represented most of the liability and premium and nearly all the indemnities. Florida alone represents 28 percent of the liability, 55 percent of the premium, and 86 percent of the indemnities for the nursery program. Although the earned premium rate in Florida is double the national average, the loss ratio still is about 1.50. Four states – Florida, Tennessee, Texas, and North Carolina – account for nearly all the indemnities.

Table 14. Top 11 States: Summary of Business Data by for All Practices Nursery 1999 through 2011 Totals and Summary Information

State	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Florida	11,397,304	419,964	627,585	0.037	1.494	0.055
California	5,673,427	46,825	1,430	0.008	0.031	0.000
Oregon	4,355,501	44,602	-	0.010	0.000	0.000
Tennessee	2,532,946	26,984	56,735	0.011	2.103	0.022
Texas	2,084,946	44,522	8,222	0.021	0.185	0.004
North Carolina	1,645,482	25,071	8,338	0.015	0.333	0.005
Illinois	1,423,354	13,612	16	0.010	0.001	0.000
Georgia	1,219,743	17,176	543	0.014	0.032	0.000
South Carolina	1,006,451	15,784	133	0.016	0.008	0.000
Michigan	974,213	9,377	741	0.010	0.079	0.001
Ohio	973,797	9,011	180	0.009	0.020	0.000
Total	33,287,163	672,927	703,924	0.020	1.046	0.021
Grand Total	41,114,371	763,946	730,583	0.019	0.956	0.018
All Other States	7,827,208	91,019	26,659	0.012	0.293	0.003

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Data by practice are shown in Tables 15 and 16. The results are essentially the same as those included in Table 14. The same states are included, with only Minnesota being different from Table 14. Minnesota occupies the tenth place for field grown practice in terms of cumulative liability. The top 10 states in each practice accounted for 91 to 99 percent of the indemnities. One factor is evident; the loss ratio for all other states for field grown practice is considerably higher than the loss ratio for all other states for container practice. This may be indicative of an imbalance in rating not just in a few states, but across the board. Data for all states are included on the data disc.

**Table 15. Top 10 States: Summary of Business Data by for Container Practice Nursery
1999 through 2011 Totals and Summary Information**

State	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Percent of all Indemnities	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Florida	8,101,839	319,333	432,178	0.946	0.039	1.353	0.053
California	3,930,018	33,303	970	0.002	0.008	0.029	0.000
Oregon	2,266,581	25,621	0	0.000	0.011	0.000	0.000
Texas	1,813,096	39,985	7,005	0.015	0.022	0.175	0.004
North Carolina	890,792	14,299	1,686	0.004	0.016	0.118	0.002
South Carolina	678,368	11,437	129	0.000	0.017	0.011	0.000
Georgia	647,656	11,026	543	0.001	0.017	0.049	0.001
Michigan	584,581	5,743	0	0.000	0.010	0.000	0.000
Tennessee	491,226	5,888	10,294	0.023	0.012	1.748	0.021
Ohio	472,067	4,463	0	0.000	0.009	0.000	0.000
Total	19,876,223	471,098	452,803	0.991	0.024	0.961	0.023
Grand Total	24,554,633	528,261	456,919	1.000	0.022	0.723	0.016
All Other States	4,678,409	57,163	4,116	0.009	0.012	0.072	0.001

Source: The Contractor's Underwriting Department after RMA insurance experience data.

**Table 16. Top 10 States: Summary of Business Data by for Field Grown Practice Nursery
1999 through 2011 Totals and Summary Information**

State	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Percent of all Indemnities	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Florida	3,295,466	100,632	195,407	0.714	0.031	1.942	0.059
Oregon	2,088,920	18,981	0	0.000	0.009	0.000	0.000
Tennessee	2,041,720	21,095	46,442	0.170	0.010	2.201	0.023
California	1,743,409	13,522	460	0.002	0.008	0.034	0.000
Illinois	1,020,477	9,380	4	0.000	0.009	0.000	0.000
North Carolina	754,690	10,772	6,652	0.024	0.014	0.618	0.009
Georgia	572,087	6,150	0	0.000	0.011	0.000	0.000
Ohio	501,730	4,548	180	0.001	0.009	0.040	0.000
Michigan	389,633	3,634	741	0.003	0.009	0.204	0.002
Minnesota	353,855	3,575	179	0.001	0.010	0.050	0.001
Total	12,761,984	192,289	250,065	0.914	0.015	1.277	0.019
Grand Total	16,559,739	235,685	273,664	1.000	0.014	1.161	0.017
All Other States	3,797,754	43,397	23,598	0.086	0.011	0.544	0.006

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Experience by County 1999 through 2011

Policies earned premium in 1,182 counties during this period. The average number of policies earning premium was less than one per year in 666 counties (56 percent). An average of 5 policies per year earned premium in 101 counties (8.5 percent), and an average of 10 or more policies per year earned premium in 53 counties (4.4 percent). Thus, although nursery policies

earned premium in slightly more than one-third of the counties nationwide, only a few counties accounted for the bulk of the liability, premium, and indemnities.

Data for the top 25 counties in terms of liability are included in Table 17. Seven of these counties are in Florida, seven are in California, four are in Oregon, three are in Tennessee, and Michigan, New Jersey, Ohio, and Oklahoma accounted for one each. These 25 counties accounted for slightly less than one-half of the liability, nearly 60 percent of the premium, and over 80 percent of the indemnities. Although the earned premium rate exceeded the national average, the loss ratio was 1.34 for the period (dollar weighted). Six counties – four in Florida and two in Tennessee – accounted for most of the indemnities. Data by practice are included in Tables 18 and 19. The results are the same as for the combined practice data. A few counties account for most of the indemnities and most counties have a favorable loss ratio for the entire period.

**Table 17. Top 25 Counties: Summary of Business Data by for All Practices Nursery
1999 through 2011 Totals and Summary Information**

State	County	Units Insured	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Florida	Miami-Dade 1/	12,320	4,453,531	212,633	395,410	0.048	1.860	0.089
Tennessee	Warren	2,248	1,242,962	12,001	28,767	0.010	2.397	0.023
Florida	Palm Beach	5,192	1,218,845	51,170	117,025	0.042	2.287	0.096
Oregon	Washington	242	1,205,394	12,525	-	0.010	0.000	0.000
Oregon	Clackamas	436	1,011,872	10,350	-	0.010	0.000	0.000
California	Kern	153	955,346	7,431	24	0.008	0.003	0.000
Oregon	Yamhill	116	922,537	9,634	-	0.010	0.000	0.000
Oregon	Marion	448	765,703	7,945	-	0.010	0.000	0.000
California	San Diego	438	703,692	5,718	569	0.008	0.100	0.001
Florida	Lake	1,257	670,692	18,366	3,206	0.027	0.175	0.005
California	Orange	1,603	576,078	4,882	-	0.008	0.000	0.000
Florida	Lee	223	570,627	15,659	14,513	0.027	0.927	0.025
Florida	Orange	1,092	507,728	14,639	4,962	0.029	0.339	0.010
California	Tulare	2,352	500,366	4,181	-	0.008	0.000	0.000
Michigan	Ottawa	90	440,441	4,315	-	0.010	0.000	0.000
California	Riverside	116	416,038	3,401	-	0.008	0.000	0.000
Tennessee	De Kalb	179	392,189	4,352	12,063	0.011	2.772	0.031
Tennessee	Franklin	772	390,138	4,973	4,121	0.013	0.829	0.011
California	Ventura	700	386,586	3,126	-	0.008	0.000	0.000
Florida	Hillsborough	244	370,556	10,183	521	0.027	0.051	0.001
Ohio	Lake	1,224	354,876	3,228	-	0.009	0.000	0.000
California	Los Angeles	120	353,391	3,092	-	0.009	0.000	0.000
Oklahoma	Cherokee	155	333,401	4,225	-	0.013	0.000	0.000
New Jersey	Cumberland	72	307,016	3,603	-	0.012	0.000	0.000
Florida	Martin	112	274,065	10,051	12,198	0.037	1.214	0.045
Total	25 Counties	31,904	19,324,072	441,684	593,378	0.023	1.343	0.031
All Other Counties			21,790,299	322,263	137,204	0.015	0.426	0.006

1/ Includes Dade County

Source: The Contractor's Underwriting Department after RMA insurance experience data.

**Table 18. Top 25 Counties: Summary of Business Data by for Container Practice Nursery
1999 through 2011 Totals and Summary Information**

State	County	Units Insured	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Florida	Miami-Dade 1/	11,758	3,395,758	173,865	299,523	0.051	1.723	0.088
Florida	Palm Beach	4,165	800,752	34,807	80,715	0.043	2.319	0.101
Oregon	Washington	172	708,883	7,975	-	0.011	0.000	0.000
Florida	Lake	1,472	633,718	17,340	2,801	0.027	0.162	0.004
California	San Diego	417	626,468	5,139	569	0.008	0.111	0.001
California	Orange	221	576,046	4,881	-	0.008	0.000	0.000
Oregon	Yamhill	77	554,214	6,256	-	0.011	0.000	0.000
Florida	Orange	2,309	496,634	14,367	4,835	0.029	0.337	0.010
Oregon	Marion	341	462,303	5,242	-	0.011	0.000	0.000
Oregon	Clackamas	342	433,464	4,989	-	0.012	0.000	0.000
California	Ventura	240	370,196	2,991	-	0.008	0.000	0.000
California	Tulare	54	368,849	3,111	-	0.008	0.000	0.000
California	Los Angeles	153	347,723	3,046	-	0.009	0.000	0.000
Oklahoma	Cherokee	61	329,721	4,189	-	0.013	0.000	0.000
Florida	Hillsborough	1,036	321,687	8,964	327	0.028	0.036	0.001
Tennessee	De Kalb	374	272,853	3,193	8,011	0.012	2.509	0.029
Michigan	Ottawa	100	265,779	2,642	-	0.010	0.000	0.000
Florida	Gadsden	128	258,481	4,688	236	0.018	0.050	0.001
Texas	Coke	69	247,248	5,007	-	0.020	0.000	0.000
California	Monterey	87	235,897	1,931	148	0.008	0.077	0.001
California	Solano	32	233,669	1,971	-	0.008	0.000	0.000
Texas	Cass	154	233,604	5,218	-	0.022	0.000	0.000
Georgia	Grady	76	231,841	3,948	-	0.017	0.000	0.000
California	San Joaquin	82	213,437	1,871	128	0.009	0.068	0.001
Texas	Fort Bend	115	196,515	5,179	75	0.026	0.014	0.000
Total	25 Counties	24,035	12,815,740	332,810	397,368	0.026	1.194	0.031
All Other Counties		29,786	11,738,893	195,451	59,551	0.017	0.305	0.005

1/ Includes Dade County

Source: The Contractor's Underwriting Department after RMA insurance experience data.

**Table 19. Top 25 Counties: Summary of Business Data by for Field Grown Practice Nursery
1999 through 2011 Totals and Summary Information**

State	County	Units Insured	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
Tennessee	Warren	1,861	1,112,627	10,394	27,196	0.009	2.617	0.024
California	Kern	120	899,940	6,937	24	0.008	0.003	0.000
Florida	Miami-Dade 1/	2,526	1,057,774	30,944	95,887	0.029	3.099	0.091
Oregon	Clackamas	294	578,408	5,361	0	0.009	0.000	0.000
Oregon	Washington	173	496,511	4,551	0	0.009	0.000	0.000
Florida	Lee	790	468,892	12,590	13,210	0.027	1.049	0.028
Florida	Palm Beach	1,411	418,093	16,363	36,310	0.039	2.219	0.087
Tennessee	Franklin	636	377,569	4,813	3,905	0.013	0.811	0.010
Oregon	Yamhill	95	368,324	3,378	0	0.009	0.000	0.000
Oregon	Marion	303	303,401	2,703	0	0.009	0.000	0.000
California	Riverside	48	275,715	2,118	0	0.008	0.000	0.000
North Carolina	Caldwell	348	215,731	3,275	3,540	0.015	1.081	0.016
Illinois	McHenry	210	193,016	1,780	0	0.009	0.000	0.000
Michigan	Ottawa	52	174,662	7,824	0	0.045	0.000	0.000
Tennessee	Grundy	367	171,041	1,673	4,448	0.010	2.658	0.026
Tennessee	Coffee	213	169,666	2,165	48	0.013	0.022	0.000
Ohio	Lake	66	169,331	1,567	0	0.009	0.000	0.000
New Jersey	Cumberland	71	168,453	1,493	0	0.009	0.000	0.000
North Carolina	Burke	332	167,607	2,055	1,951	0.012	0.949	0.012
Oregon	Multnomah	97	166,588	2,303	0	0.014	0.000	0.000
Illinois	Kane	97	154,518	1,475	0	0.010	0.000	0.000
Ohio	Clarke	32	138,159	1,427	0	0.010	0.000	0.000
California	Tulare	51	131,517	1,282	0	0.010	0.000	0.000
Tennessee	De Kalb	507	119,336	1,071	4,052	0.009	3.785	0.034
Maryland	Kent	36	118,495	1,159	0	0.010	0.000	0.000
Total	25 Counties	10,736	8,615,374	130,698	190,570	0.015	1.458	0.022
All Other Counties		14,137	7,944,365	104,987	83,093	0.013	0.791	0.010

1/ Includes Dade County

Source: The Contractor's Underwriting Department after RMA insurance experience data.

These results differ from the norm for crop insurance. Normally, areas with the greatest concentration of liability tend to have better insurance performance than do areas with smaller volumes of business. With nursery, even with geographic dispersion (Tennessee and southern Florida) and diverse growing conditions (container versus field grown), the loss ratios are worse in the regions with the greatest concentration of liability. This clustering of loss was one of the reasons these areas were singled out as targets for listening sessions.

Experience by Reporting Organization 1999 through 2011

This section concludes the overall review of the crop insurance experience by considering the relative performance of individual reporting organizations. This review is required by the Program Evaluation Handbook. A total of 34 reporting organizations are included in the data for this period. However, very few were involved for all years.

Table 20 categorizes reporting organizations by length of sales activity and by recent activity. Four organizations had policies earning premium in all years of the experience period, accounting for about 70 percent of liability and premium and 84 percent of indemnities. One of the four had very little business. Of the other three, one had a loss ratio greater than 1.00 and the other two were under that threshold.

Table 20. Summary of Business Data by Reporting Organization for All Practices Nursery 1999 through 2011

Reporting Organization	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
All Years										
MJ	16,266	21,809	1,132	2,753	15,645,181	301,041	396,821	0.019	1.318	0.025
OW	11,549	19,477	737	1,336	11,858,343	225,736	191,714	0.019	0.849	0.016
HL	3,688	5,483	228	446	1,471,303	30,331	24,854	0.021	0.819	0.017
HK	165	363	9	18	57,406	795	938	0.014	1.180	0.016
Total	31,668	47,132	2,106	4,553	29,032,233	557,903	614,327	0.019	1.101	0.021
Five or More Years Ending 2011										
UB	3,173	7,461	214	443	3,092,490	53,590	25,630	0.017	0.478	0.008
SU	2,149	4,349	209	468	1,857,227	33,905	23,769	0.018	0.701	0.013
PL	594	1,038	15	27	400,012	5,395	4,229	0.013	0.784	0.011
HS	310	734	36	52	344,609	3,308	12,963	0.010	3.919	0.038
LU	361	766	22	31	306,560	12,929	3,628	0.042	0.281	0.012
AX	111	585	7	13	127,327	2,419	8,074	0.019	3.337	0.063
TH	43	43	-	-	33,403	374	-	0.011	-	-
UF	65	122	5	5	20,781	275	552	0.013	2.009	0.027
Total	6,806	15,098	508	1,039	6,182,409	112,194	78,845	0.018	0.703	0.013

Table 20: Summary of Business Data by Reporting Organization for All Practices Nursery 1999 through 2011 (Continued)

Reporting Organization	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
No Experience Since 2006										
MN	1,706	1,759	16	26	1,734,548	17,026	696	0.010	0.041	0.000
PS	952	1,224	21	21	1,175,107	11,322	2,784	0.010	0.246	0.002
YH	2,082	2,290	186	831	1,169,509	26,292	22,652	0.022	0.862	0.019
PW	712	738	11	15	469,579	5,484	225	0.012	0.041	0.000
KT	414	416	9	9	212,952	6,522	869	0.031	0.133	0.004
UT	367	368	6	6	173,550	3,388	579	0.020	0.171	0.003
MM	124	133	-	-	120,180	1,052	-	0.009	-	-
XL	350	354	2	2	119,025	2,883	28	0.024	0.010	0.000
OG	201	202	3	3	106,329	1,513	20	0.014	0.013	0.000
SX	145	147	3	3	26,354	894	961	0.034	1.075	0.036
CA	66	66	-	-	9,172	290	-	0.032	-	-
PK	5	5	-	-	6,128	54	-	0.009	-	-
XU	16	16	-	-	4,846	51	-	0.010	-	-
IF	7	11	-	-	1,877	65	-	0.034	-	-
SE	2	3	-	-	263	3	-	0.011	-	-
OK	1	1	-	-	11	0	-	0.010	-	-
Total	7,150	7,733	257	916	5,329,429	76,837	28,814	0.014	0.375	0.005
All Other										
MB	417	889	46	86	319,528	5,394	4,417	0.017	0.819	0.014
BM	210	476	5	8	196,512	10,155	519	0.052	0.051	0.003
HB	103	214	7	9	39,685	1,243	3,612	0.031	2.906	0.091
BF	7	15	-	-	7,379	132	-	0.018	-	-
DH	31	70	2	2	5,554	77	47	0.014	0.616	0.009
IF	7	11	-	-	1,877	65	-	0.034	-	-
ET	1	1	-	-	1,643	12	-	0.007	-	-
Total	776	1,676	60	105	572,178	17,077	8,596	0.030	0.503	0.015

Source: The Contractor's Underwriting Department after RMA insurance experience data.

A second group entitled “five or more years ending in 2011” is intended to capture those organizations that have been active in recent years and that have established a longer term presence in the nursery insurance business. There are eight such organizations. This group accounts for about 15 percent of premium and liability and 11 percent of indemnities. As a group, the loss ratio is favorable although three smaller organizations had losses exceeding premium.

A third group entitled “no experience since 2006” is intended to capture those organizations that no longer are active in sales of nursery insurance. There are 16 such organizations. This does not mean the organizations no longer sell crop insurance – the Contractor cannot determine if these organizations continue to hold a Standard Reinsurance Agreement – but only that the organizations have not had a policy earning premium in recent years. This group accounted for the majority of the remaining premium, liability, and indemnities.

The final group entitled “all other” represents the seven organizations that did not fit into one of the other three groups. This group consists of organizations that have not had a policy earning premium since 1999 and those that may have had one or two years of activity in recent years. As a group, these organizations only represent one to two percent of premium, liability, and indemnity.

Considering the first two groups, three organizations (HS, AX, and UF) have loss ratios considerably higher than the all-industry average. All three are relatively small with total premium for the three being less than one percent of the total for the nursery program.

Experience by Coverage Level 1999 through 2011

Experience by coverage level for all nursery practices is included in Table 21. As demonstrated previously, most of the business for these years is at the CAT level, which has demonstrated good insurance experience in terms of a low loss ratio. The loss ratio at every additional coverage level exceeds 1.00. This is somewhat perplexing in the case of the 50 percent coverage level since the loss procedures calculate the indemnity as though the coverage were at the 50 percent coverage level and then multiply that amount by 0.55 to determine the CAT indemnity. Even so, the loss ratio at the 50 percent coverage level is more than triple the loss ratio at the CAT level. Based on the much higher potential indemnities, producers with 50 percent buy-up policies have greater incentives to report losses, but the occurrence of an event that causes a 50 percent loss of inventory would very likely be reported in any event.

Table 21. Summary of Business Data by Coverage Level for All Practices Nursery 1999 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
CAT	32,458	34,956	589	593	31,188,583	415,653	127,371	0.013	0.306	0.004
0.50	4,290	11,508	362	780	2,667,625	50,807	55,419	0.019	1.091	0.021
0.55	544	1,391	61	109	414,617	10,983	14,935	0.026	1.360	0.036
0.60	3,040	7,966	453	1,241	2,210,507	65,792	107,996	0.030	1.641	0.049
0.65	2,408	5,052	392	904	1,375,788	60,423	73,063	0.044	1.209	0.053
0.70	2,247	5,800	610	1,647	2,248,672	116,793	259,451	0.052	2.221	0.115
0.75	2,388	5,166	557	1,343	1,008,581	43,497	92,347	0.043	2.123	0.092
Total	47,375	71,839	3,024	6,617	41,114,371	763,946	730,583	0.019	0.956	0.018

Source: The Contractor's Underwriting Department after RMA insurance experience data.

The reader may note that the count of policies for additional coverage levels does not sum to the total contained in Table 4. This occurs because the insured can elect different coverage levels among plant types (basic units) for additional coverage. Hence, a policy may have a unit at the 50 percent coverage level and another unit at the 75 percent level. The policy will be counted twice when segregated into coverage level choices. All other data are not affected by this condition.

Data by practice are included in Tables 22 and 23. The results differ somewhat in that the loss ratio performance differs among coverage levels. Field grown practice is not uniformly worse than container practice even though the overall loss ratio is higher. Contrary to a widely held concept, insureds do not seem to be taking advantage of a premium rate that appears unduly low. Although the data imply the field grown practice has been consistently under-rated during the experience period, a greater percentage of the liability for that practice is at the CAT level (81 percent versus 72 percent). In addition, only 8.2 percent of the liability is at the 65, 70, and 75 percent coverage levels as compared to 13.3 percent for the field grown practice.

Table 22. Summary of Business Data by Coverage Level for Container Practice Nursery 1999 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
CAT	24,557	25,296	306	307	17,718,228	265,069	53,048	0.015	0.200	0.003
0.50	3,219	8,726	235	536	1,743,803	34,991	19,741	0.020	0.670	0.013
0.55	434	1,038	43	79	308,198	8,904	13,059	0.029	1.467	0.042
0.60	2,417	6,273	376	1,038	1,507,922	47,276	88,349	0.031	1.869	0.059
0.65	2,100	4,210	346	762	1,066,333	50,029	57,922	0.047	1.158	0.054
0.70	1,817	4,503	488	1,347	1,593,142	90,961	161,967	0.057	1.781	0.102
0.75	1,813	3,775	457	1,147	617,007	31,031	62,834	0.050	2.025	0.102
Total	36,357	53,821	2,251	5,216	24,554,633	528,261	456,919	0.022	0.865	0.019

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Table 23. Summary of Business Data by Coverage Level for Field Grown Practice Nursery 1999 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
CAT	14,690	15,120	324	327	13,470,354	150,584	74,323	0.011	0.494	0.006
0.50	1,755	3,213	168	247	923,822	15,815	35,678	0.017	2.256	0.039
0.55	225	390	24	32	106,418	2,078	1,876	0.020	0.903	0.018
0.60	1,249	2,055	137	213	702,584	18,515	19,647	0.026	1.061	0.028
0.65	661	965	86	147	309,455	10,394	15,141	0.034	1.457	0.049
0.70	834	1,513	184	311	655,530	25,832	97,484	0.039	3.774	0.149
0.75	959	1,617	141	209	391,574	12,467	29,513	0.032	2.367	0.075
Total	20,373	24,873	1,064	1,486	16,559,739	235,685	273,664	0.014	1.161	0.017

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Experience of Optional Coverage 1999 through 2011

Three optional coverage plans are offered under the nursery program: the Peak Endorsement, the Nursery Grower's Price Option, and the Rehabilitation Endorsement. The data capture processes for each of these suffer deficiencies that do not permit specific evaluation of the performance of the option. These deficiencies will be explained when the data pertaining to those policies that elected an option is considered.

Peak Endorsement

The Peak Endorsement allows the insured to increase the liability by up to 200 percent of the originally reported amount for a specified period of time. Only one Peak Endorsement may be established on a unit per crop year unless a loss has occurred and the nursery is restocked.

The Data Acceptance System (DAS) is structured such that an individual data record is processed to establish premium for an original Plant Inventory Value Report (PIVR), a revised PIVR, or a Peak Endorsement. Each of these records contains only the amount of insurance relevant to that report. The liability and premium associated with a Peak Endorsement can be determined.

However, when the amount of a loss is determined, the loss adjuster establishes the full value of the plants on the unit before the loss event (Field Market Value A) and the value of the plants after the loss event (Field Market Value B). The amount of loss is Field Market Value A minus Field Market Value B.⁶⁰ Both values are based on the actual inventory present at loss. The amount of insurance serves only as an upper limit on the amount of the indemnity. There is no way to determine whether the plants involved in the loss were those added by a Peak Endorsement. The amount of the indemnity is determined at the unit level irrespective of the source of the liability – an original PIVR, a revised PIVR, or a Peak Endorsement.

The Contractor will consider the data for the Peak Endorsement in two distinct approaches. First, the liability added by the Endorsement will be evaluated. Table 24 contains the aggregate summary of business data for the Peak Endorsement and Tables 25 and 26 contain the data by practice.

⁶⁰ Some adjustments such as an under- or over-report factor can be introduced but this expression embodies the conceptual basis of the loss adjustment process.

Table 24. Summary of Business Data by Coverage Level for All Practices with Peak Endorsement Nursery 1999 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.5	271	495	16	30	121,113	969	1,623	0.008	1.675	0.013
0.55	67	240	4	10	27,349	293	377	0.011	1.288	0.014
0.60	420	731	45	106	254,934	2,794	4,616	0.011	1.653	0.018
0.65	357	429	27	53	105,284	1,786	1,071	0.017	0.600	0.010
0.70	456	824	87	235	334,152	7,077	12,171	0.021	1.720	0.036
0.75	398	568	35	100	137,976	2,268	1,161	0.016	0.512	0.008
Total	1,969	3,287	214	534	980,809	15,187	21,019	0.015	1.384	0.021
Percent of SOB Total Values for All Coverage	4.2	4.6	7.1	8.1	2.4	2.0	2.9	83.3	144.7	120.6

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Table 25. Summary of Business Data by Coverage Level for Container Practice with Peak Endorsement Nursery 1999 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.5	222	423	12	23	102,375	873	585	0.009	0.323	0.003
0.55	48	179	3	8	21,865	249	158	0.011	0.289	0.003
0.60	339	611	38	92	233,174	2,561	1,634	0.011	3.050	0.034
0.65	299	369	23	49	91,271	1,575	926	0.017	1.273	0.022
0.70	400	753	82	225	272,570	6,271	3,696	0.023	3.057	0.070
0.75	319	480	34	99	95,896	1,738	873	0.018	2.804	0.051
Total	1,627	2,815	192	496	817,151	13,268	7,871	0.016	2.579	0.042
Percent of SOB Total Values for All Coverage	3.4	3.9	6.3	7.5	2.0	1.7	1.1	87.4	269.7	235.6

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Table 26. Summary of Business Data by Coverage Level for Field Grown Practice with Peak Endorsement Nursery 1999 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.5	49	72	4	7	18,738	96	1,038	0.005	10.832	0.055
0.55	19	61	1	2	5,484	43	219	0.008	5.054	0.040
0.60	81	120	7	14	21,760	232	2,983	0.011	12.843	0.137
0.65	58	60	4	4	14,014	212	145	0.015	0.686	0.010
0.70	56	71	5	10	61,582	806	8,475	0.013	10.515	0.138
0.75	79	88	1	1	42,080	531	288	0.013	0.543	0.007
Total	342	472	22	38	163,658	1,920	13,148	0.012	6.849	0.080
Percent of Total Values for All Coverage	0.7	0.7	0.7	0.6	0.4	0.3	1.8	63.1	716.2	452.1

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Rehabilitation Endorsement

The Rehabilitation Endorsement is available only for the field grown practice. It can be likened to replanting coverage offered by many crop insurance policies. It is a salvage operation intended to compensate the grower for certain costs that may result in avoidance of all or part of an indemnity. As is the case with replanting, a payment under this Endorsement is not considered an indemnity for the purpose of determining the maximum indemnity that may be paid for a crop year.

The data seemingly indicate that seven policies earning premium under container practice had the Rehabilitation Endorsement in effect at some point in the 1999 to 2011 period. This most likely is an artifact of the data structure. Most likely, a policy with both container and field grown practice chose the Endorsement on or before sales closing and the option code was included in all records pertaining to that policy. The Data Acceptance System for 2010 does indicate that the common option code RH is to be used only with practice 007. The Contractor will assume that these seven policies were incorrectly coded. In any event, no amount is included in the indemnity field.

The data also indicate that one policy at the CAT level had a Rehabilitation Endorsement in effect for one year during the experience period. Again, the Contractor will assume this policy had CAT on the container practice and additional coverage on the field grown practice. Hence, the Endorsement was valid at the policy level.

Table 27 contains the experience data by coverage level for policies with the field grown practice that had the Rehabilitation Endorsement in effect at some point in the experience period. Almost ten percent of the policies earning premium had the Endorsement in effect. The share of liability was slightly smaller. The share of units earning premium, premium, and indemnities is considerably larger. The earned premium rate also is much higher than the average for the field grown practice. The reason is that 73 percent of the liability under the Endorsement and 86 percent of the premium arose from policies in Florida. Referring to Table 14 demonstrates that the average earned premium rate in Florida was much greater than the average for all states. The data for the Rehabilitation Endorsement are over-weighted to that state.

Table 27. Summary of Business Data by Coverage Level for Field Grown Practice with Rehabilitation Endorsement Nursery 1999 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.5	623	1,365	63	94	362,812	7,609	10,620	0.021	1.396	0.029
0.55	72	142	7	8	34,582	796	636	0.023	0.798	0.018
0.60	505	978	47	69	268,962	7,539	9,100	0.028	1.207	0.034
0.65	179	369	20	50	135,737	5,113	7,438	0.038	1.455	0.055
0.70	329	792	69	123	265,204	12,550	63,512	0.047	5.061	0.239
0.75	234	571	38	60	73,567	2,573	3,720	0.035	1.446	0.051
Total	1,942	4,217	244	404	1,140,864	36,181	95,026	0.032	2.626	0.083
Percent of Field Grown	9.5	17.0	22.9	27.2	6.9	15.4	34.7	222.8	226.2	504.0

Source: The Contractor's Underwriting Department after RMA insurance experience data.

The loss ratio for all policies with field grown practice in Florida was 1.94 compared to 2.63 for this group of policies. The maximum rehabilitation payments that could have been made are 7.5 percent of the liability. If the assumption that the liability on loss units was proportional to the ratio of loss units to the units insured is accepted, the liability on loss units would be approximately \$109 million. The maximum rehabilitation payments would be \$8.2 million, leaving approximately \$86.8 million of indemnities for losses. The loss ratio under this set of assumptions is 2.40. Clearly, the Endorsement either was adversely selected or it failed to accomplish the desired goal of reducing the severity of losses.

Nursery Grower's Price Endorsement

The Price Endorsement allows nursery growers to establish an insurance price greater than that allowed by the PPS. The Endorsement must be selected on or before the sales closing date. The grower is required to identify those plants for which the price is to be increased and include the total value of all plants in a unit, including those with normal pricing, on the PIVR. The grower is required to provide an upgraded plant list, but this document is not included with the electronic data. From the perspective of the data, the only distinguishing characteristic is the PO common option code. All individual plant prices remain in the insured's file with the AIP. Hence, the data may be analyzed only at an aggregate level. There is no way to determine the percentage increase in the amount of insurance due to the Endorsement.

Summary of business data for policies that elected the Endorsement are contained in Tables 28, 29, and 30 for all practices, the container practice, and the field grown practice, respectively. Only about two percent of policies earning premium elected the Endorsement, most of which were insured under container practice. Ninety-eight percent of the liability on container practice was from policies earning premium in Florida, as was 53 percent of the liability on field grown practice. Most of the remaining liability on field grown practice was from policies earning premium in Washington. The relatively high average earned premium rate reflects the concentration of business in Florida.

Table 28. Summary of Business Data by Coverage Level for All Practices with Price Endorsement Nursery 2006 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.5	195	784	11	23	108,856	2,924	917	0.027	0.314	0.008
0.55	24	72	0	0	37,902	1,642	-	0.043	0.000	0.000
0.60	180	745	25	63	135,319	6,300	1,596	0.047	0.253	0.012
0.65	205	688	29	79	215,923	13,848	2,703	0.064	0.195	0.013
0.70	226	784	38	122	216,389	17,387	4,423	0.080	0.254	0.020
0.75	58	194	16	39	22,481	2,424	511	0.108	0.211	0.023
Total	888	3,267	119	326	736,870	44,527	10,150	0.060	0.228	0.014
Percent of Total	1.9	4.6	4.1	4.9	1.8	5.8	1.4	325.2	23.8	77.5

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Table 29. Summary of Business Data by Coverage Level for Container Practice with Price Endorsement Nursery 2006 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.5	186	771	11	23	106,886	2,879	917	0.027	0.319	0.009
0.55	24	72	0	0	37,902	1,642	-	0.043	0.000	0.000
0.60	175	736	24	62	132,254	6,191	1,500	0.047	0.242	0.011
0.65	188	666	26	76	206,929	13,668	2,550	0.066	0.187	0.012
0.70	223	776	38	122	216,263	17,381	4,423	0.080	0.255	0.020
0.75	53	189	16	39	22,056	2,405	511	0.109	0.212	0.023
Total	849	3,210	115	322	722,290	44,166	9,901	0.061	0.224	0.014
Percent of Total	2.4	6.0	5.3	6.2	2.9	8.4	2.2	284.2	25.9	73.7

Source: The Contractor's Underwriting Department after RMA insurance experience data.

**Table 30. Summary of Business Data by Coverage Level for Field Grown Practice
with Price Endorsement Nursery 2006 through 2011**

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.5	9	13	0	0	1,970	46	-	0.023	0.000	0.000
0.55	0	0	0	0	0	0	0	0.000	0.000	0.000
0.60	5	9	1	1	3,065	109	96	0.036	0.882	0.031
0.65	17	22	3	3	8,994	180	153	0.020	0.849	0.017
0.70	3	8	0	0	127	7	-	0.054	0.000	0.000
0.75	5	5	0	0	425	19	-	0.045	0.000	0.000
Total	39	57	4	4	14,581	361	249	0.025	0.690	0.017
Percent of Total	0.2	0.2	0.4	0.3	0.1	0.2	0.1	173.8	59.4	103.3

Source: The Contractor's Underwriting Department after RMA insurance experience data.

The performance of these policies with respect to loss ratio appears superior to the all policies. This appearance is due to two factors: the Endorsement has been available only since 2006 and the volume of business in 2006 was negligible. A more direct comparison of loss ratio performance is included in Table 31. The data are shown separately for container and field grown practices, for the combined data, and are compared against Florida for those same years. The simple average of the loss ratios provides the best comparison due to the differences in the dollar weighting of the data for the Endorsement relative to the data for all policies. As these data indicate, the loss ratio for policies with the Endorsement may have been slightly better than all policies in Florida for these years.

Table 31. Loss Ratio Comparisons for Policies with Price Endorsement Nursery 2006 through 2011

Year	Container			Field Grown			Combined	Florida
	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Loss Ratio	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Loss Ratio	Loss Ratio	Loss Ratio
2006	463	2,987	6.445	-	-	0.000	6.445	5.799
2007	8,969	963	0.107	104	112	1.078	0.118	0.486
2008	10,535	1,157	0.110	53	-	0.000	0.109	0.065
2009	7,181	1,940	0.270	86	-	0.000	0.267	0.532
2010	9,219	2,559	0.278	26	137	5.308	0.292	0.661
2011	7,798	295	0.038	92	-	0.000	0.037	0.078
Total	44,166	9,901	0.224	361	249	0.690	0.228	0.711
Average			1.067			1.011		1.190

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Peak Endorsement, Price Endorsement, and Rehabilitation Endorsement

A total of eight policies with nine units had all three Endorsements in effect between 2007 and 2010. Four such policies earned premium in 2007, one in 2008, one in 2009, and two in 2010. No such policy earned premium in 2011. The limited amount of experience of these policies is included in Table 32.

Table 32. Summary of Business Data by Coverage Level for Field Grown Practice with Peak Endorsement, Price Endorsement, and Rehabilitation Endorsement Nursery 2006 through 2011

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.50	1	1	0	0	138	3	0	0.024	-	-
0.55	-	-	-	-	-	-	-	-	-	-
0.60	3	4	0	0	785	18	0	0.022	-	-
0.65	-	-	-	-	-	-	-	-	-	-
0.70	4	4	0	0	12,841	510	0	0.040	-	-
0.75	-	-	-	-	-	-	-	-	-	-
Total	8	9	0	0	13,764	531	0	0.039	-	-

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Peak Endorsement and Rehabilitation Endorsement

A small number of policies representing 247 units chose this combination of Endorsements between 2006 and 2011. Most chose the highest coverage levels, which was where all the losses occurred. However, both the premium and the indemnity were less than \$100,000. The data are contained in Table 33.

**Table 33. Summary of Business Data by Coverage Level for Field Grown Practice
with Peak Endorsement and Rehabilitation Endorsement Nursery 2006 through 2011**

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.50	9	11	0	0	2,188	30	-	0.014	-	-
0.55	3	5	0	0	603	9	-	0.014	-	-
0.60	11	25	0	0	4,705	69	-	0.015	-	-
0.65	6	10	0	0	976	29	-	0.029	-	-
0.70	48	159	4	8	39,412	559	732	0.014	1.309	0.019
0.75	12	37	1	2	1,309	22	85	0.017	3.905	0.065
Total	89	247	5	10	49,193	717	817	0.015	1.140	0.017

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Peak Endorsement and Price Endorsement

The sole remaining group of policies with a combination of Endorsements was a group of container practice units with both the Peak Endorsement and the Price Endorsement. As in the other cases where Endorsements were combined, few policies and units were involved. The data for this group are included in Table 34. This particular combination first was reported in 2006, the first year the Price Endorsement was offered. Market penetration peaked in 2007 with 62 units and about \$54 million of liability. Business has decreased since, to 13 units in 2010 and 18 units in 2011. This group of policies accounted for very little premium or indemnity.

**Table 34. Summary of Business Data by Coverage Level for Container Practice
with Peak Endorsement and Price Endorsement Nursery 2006 through 2011**

Coverage Level	Policies Earning Premium	Units Insured	Policies Indemnified	Units Indemnified	Liability (1,000 dollars)	Premium (1,000 dollars)	Indemnity (1,000 dollars)	Earned Premium Rate	Loss Ratio	Loss Cost Ratio
0.50	5	12	1	1	619	5	8	0.008	1.600	0.013
0.55	4	4	0	0	6,270	209	0	0.033	0.000	0.000
0.60	10	29	0	0	7,255	173	0	0.024	0.000	0.000
0.65	18	56	1	1	10,616	293	78	0.028	0.267	0.007
0.70	47	93	2	3	118,403	6,600	30	0.056	0.005	0.000
0.75	3	11	1	1	245	9	10	0.037	1.140	0.042
Total	87	205	5	6	143,407	7,289	126	0.051	0.017	0.001

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Review of Causes of Loss

A total of 18 causes of loss were coded for indemnities paid to policyholders who insured the container practice (Table 35). Three causes – hurricane, freeze, and excess moisture in order of importance – constituted 86 percent of the policies indemnified.⁶¹ These three causes of loss accounted for 89 percent of the indemnities (Table 36). A fourth cause of loss – flood – accounted for only about three percent of policies indemnified but was nearly equal in terms of the amount of indemnities with excess moisture. Most of the flood indemnities were paid in 2001. Indemnities were paid for the other causes of loss nearly every year. One cause of loss, drought, does not appear reasonable for the container practice. Fortunately, the amounts of indemnities associated with drought are small.

⁶¹ A policy may have more than one cause of loss code associated with a loss event. Hence, the numbers of policies indemnified as reported in these tables do not conform to the numbers reported earlier.

Table 35. Number of Policies Indemnified by Year and Cause of Loss Container Practice Nursery 1999 through 2011

Cause of Loss	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Cold Wet Weather	-	-	-	-	9	1	1	-	3	-	-	-	-	14
Cold Winter	-	-	9	5	8	-	1	1	5	1	1	1	-	32
Drought	1	-	1	-	1	-	-	1	1	1	-	-	-	6
Excess Moisture	2	16	70	46	52	18	20	-	15	13	7	2	-	261
Failure Irrigation Supply	3	1	-	-	-	-	-	-	-	-	-	-	-	4
Fire	-	-	-	-	1	1	-	-	-	1	-	-	-	3
Flood	2	-	65	4	2	-	-	-	-	-	1	-	-	74
Freeze	11	1	73	16	46	2	3	16	59	32	50	107	42	458
Frost	-	1	1	1	10	1	-	1	13	2	1	-	-	31
Hail	2	4	2	1	6	2	3	-	3	-	1	7	-	31
Heat	4	1	2	3	2	-	2	-	1	3	-	-	-	18
Hurricane	8	147	6	1	3	276	396	449	1	-	14	-	-	1,301
Insects	1	1	-	1	1	1	2	-	-	1	-	-	-	8
Other	-	-	-	3	2	2	-	-	-	-	1	1	-	9
Plant Disease	3	1	5	6	7	3	3	-	4	6	2	1	-	41
Tornado	-	-	1	-	1	-	-	2	2	1	-	2	-	9
Wildlife	-	1	2	-	-	-	-	3	-	1	-	1	-	8
Wind	4	-	3	6	2	3	2	-	4	8	2	-	1	35
Total	41	174	240	93	153	310	433	473	111	70	80	122	43	2,343

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Table 36. Indemnities (\$1,000) by Year and Cause of Loss Container Practice Nursery 1999 through 2011

Cause of Loss	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Cold Wet Weather	-	-	-	-	335	6	48	-	1,465	-	-	-	-	1,854
Cold Winter	-	-	120	168	86	-	12	3	657	129	3	89	-	1,267
Drought	21	-	6	-	19	-	-	0	3	6	-	-	-	55
Excess Moisture	202	1,233	9,947	4,731	2,900	827	841	-	1,637	707	345	62	-	23,432
Failure Irrigation Supply	10	7	-	-	-	-	-	-	-	-	-	-	-	17
Fire	-	-	-	-	98	42	-	-	-	569	-	-	-	710
Flood	221	-	19,225	1,139	1,923	-	-	-	-	-	20	-	-	22,527
Freeze	1,402	-	6,814	617	2,819	17	40	10,471	5,811	1,560	2,600	7,045	1,599	40,796
Frost	-	1	163	15	2,039	8	-	1	359	16	123	-	-	2,726
Hail	155	190	73	15	6,746	464	468	-	664	-	27	861	-	9,664
Heat	501	22	60	17	3,213	-	18	-	97	6	-	-	-	3,935
Hurricane	1,286	27,371	938	76	53	41,250	111,943	154,912	101	-	3,166	-	-	341,097
Insects	14	21	-	104	134	-	1,553	-	-	56	-	-	-	1,882
Other	-	-	-	815	214	43	-	-	-	-	1	208	-	1,281
Plant Disease	350	17	136	263	167	177	30	-	270	378	65	39	-	1,894
Tornado	-	-	169	-	34	-	-	1,225	143	-	-	376	-	1,946
Wildlife	-	3	3	-	-	-	-	113	-	6	-	11	-	135
Wind	24	-	46	683	62	148	25	-	120	436	59	-	98	1,700
Total	4,186	28,866	37,701	8,643	20,842	42,982	114,978	166,725	11,328	3,870	6,410	8,690	1,697	456,919

Source: The Contractor's Underwriting Department after RMA insurance experience data.

As demonstrated in Table 15, Florida accounted for the majority of the indemnities for container practice, with Tennessee being the next highest, but a distant second. Table 37 includes the indemnities by year for the container practice for the state of Florida. Note that losses were coded to hurricane in all but four years and to freeze in all but one of these years. This exceeds the actual frequency of these events in the state. Nearly two-thirds of all indemnities in Florida were paid in 2005 and 2006, both of which were years of significant hurricane activity. Hurricane is easily the most frequently cited cause of loss in an indemnity scenario, which is interesting given the fact that hurricanes are generally restricted to limited regions of the country.

Table 37. Indemnities by Year and Cause of Loss Container Practice Nursery State of Florida 1999 through 2011

Cause of Loss	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Cold Wet Weather	-	-	-	-	297	6	48	-	1,465	-	-	-	-	1,816
Cold Winter	-	-	46	168	81	-	-	3	657	129	3	-	-	1,087
Drought	-	-	6	-	19	-	-	0	3	6	-	-	-	34
Excess Moisture	202	1,233	9,521	4,731	2,892	751	722	-	894	707	345	0	-	21,999
Failure Irrigation Supply	-	7	-	-	-	-	-	-	-	-	-	-	-	7
Fire	-	-	-	-	98	42	-	-	-	-	-	-	-	140
Flood	193	-	19,225	1,116	1,826	-	-	-	-	-	20	-	-	22,380
Freeze	31	-	6,756	565	2,819	13	25	9,874	2,172	1,547	2,569	7,001	1,599	34,970
Frost	-	1	163	15	1,586	8	-	1	359	16	123	-	-	2,273
Hail	-	22	47	-	3	-	-	-	345	-	-	26	-	444
Heat	0	22	-	-	2	-	-	-	-	-	-	-	-	24
Hurricane	940	27,371	938	-	6	41,097	111,007	154,912	101	-	2,466	-	-	338,838
Insects	-	21	-	104	134	0	1,553	-	-	56	-	-	-	1,868
Other	-	-	-	812	214	25	-	-	-	-	-	208	-	1,258
Plant Disease	350	17	136	263	167	173	3	-	270	378	2	-	-	1,760
Tornado	-	-	169	-	-	-	-	1,030	143	-	-	376	-	1,717
Wildlife	-	3	3	-	-	-	-	69	-	6	-	11	-	91
Wind	5	-	27	679	62	143	25	-	46	436	47	-	-	1,470
Total	1,721	28,698	37,037	8,454	10,206	42,258	113,384	165,890	6,455	3,282	5,574	7,622	1,599	432,178

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Tabular data for Tennessee will not be included herein. One-half of all indemnities were paid for hail as a cause of loss, with heat being in second place at 31 percent, and freeze in third place at 15 percent. About three-fourths of all indemnities for container practice were paid in 2003. No indemnities were paid in 2000, 2004, or 2008 to 2011. This pattern of loss experience appears more consistent with the expected nature of experience for a product with extensive management requirements.

The data for field grown practice are similar to those for container practice. Again, there were 18 causes of loss coded for these years. The only difference between field grown and container practices is the elimination of fire as a cause of loss and the introduction of hot wind. Again, three causes of loss – hurricane, excess moisture, and hail – accounted for more than 80 percent of the policies indemnified (84 percent, nearly the same percentage as container practice for the three most frequently entered loss codes). About 91 percent of the indemnities were paid under these three loss codes. The three primary loss codes accounted for nearly the same percentage of total indemnities. The data for field grown practice are included in Tables 38 and 39.

Table 38. Number of Policies Indemnified by Year and Cause of Loss Field Grown Practice Nursery 1999 through 2011

Cause of Loss	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Cold Wet Weather	-	-	-	-	2	-	-	-	1	-	-	-	-	3
Cold Winter	-	-	1	-	2	1	-	-	1	1	1	-	-	7
Drought	4	1	1	-	-	-	2	-	1	-	2	-	5	16
Excess Moisture	-	1	10	5	4	5	9	-	1	3	5	1	-	44
Failure Irrigation Supply	1	1	-	-	-	-	-	-	-	-	-	-	-	2
Flood	2	-	6	-	2	6	1	1	2	-	1	-	1	22
Freeze	3	1	21	9	10	2	-	11	143	10	43	72	9	334
Frost	-	-	1	-	2	-	-	-	-	-	-	-	-	3
Hail	1	1	7	4	19	5	16	34	9	4	3	7	2	112
Heat	3	-	-	-	1	1	-	-	-	7	3	1	-	16
Hot Wind	-	1	1	-	-	-	-	-	-	-	-	-	-	2
Hurricane	2	30	-	-	2	158	87	185	1	-	17	-	-	482
Insects	-	-	-	-	2	2	-	-	-	3	14	-	-	21
Other	-	-	-	1	-	-	-	-	-	2	-	-	-	3
Plant Disease	-	-	3	-	-	-	-	-	1	-	-	1	-	5
Tornado	-	-	-	-	1	-	-	-	-	1	1	-	-	3
Wildlife	-	-	2	2	2	2	1	1	-	-	-	1	-	11
Wind	1	-	1	1	-	5	1	-	4	1	6	-	-	20
Total	17	36	54	22	49	187	117	232	164	32	96	83	17	1,106

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Table 39. Indemnities by Year and Cause of Loss Field Grown Practice Nursery 1999 through 2011

Cause of Loss	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Cold Wet Weather	-	-	-	-	18	-	-	-	17	-	-	-	-	36
Cold Winter	-	-	11	-	12	1	-	-	10	167	3	-	-	203
Drought	138	4	9	-	-	-	35	-	108	-	27	-	925	1,246
Excess Moisture	-	484	421	130	612	349	298	-	24	37	9,074	1	-	11,431
Failure Irrigation Supply	-	29	-	-	-	-	-	-	-	-	-	-	-	30
Flood	402	-	401	-	112	468	3	35	54	-	89	-	18	1,583
Freeze	70	1	1,758	258	191	92	-	495	25,280	563	12,006	22,308	440	63,463
Frost	-	-	8	-	597	-	-	-	-	-	-	-	-	605
Hail	1,090	109	1,589	94	3,332	1,047	2,716	7,498	6,394	355	323	7,701	786	33,037
Heat	179	-	-	-	80	877	-	-	-	181	55	8	-	1,380
Hot Wind	-	3	32	-	-	-	-	-	-	-	-	-	-	35
Hurricane	101	17,604	-	-	19	36,603	19,083	77,965	11	-	2,158	-	-	153,544
Insects	-	-	-	-	256	125	-	-	-	407	4,133	-	-	4,921
Other	-	-	-	8	-	-	-	-	-	130	-	-	-	138
Plant Disease	-	-	96	-	-	-	-	-	20	-	-	186	-	303
Tornado	-	-	-	-	39	-	-	-	-	97	116	-	-	252
Wildlife	-	-	37	17	26	138	54	-	-	-	-	3	-	276
Wind	4	-	9	24	-	820	-	-	104	30	191	-	-	1,182
Total	1,985	18,235	4,371	532	5,295	40,521	22,190	85,994	32,023	1,968	28,174	30,207	2,168	273,664

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Florida again accounted for the majority of the indemnities for the practice and Tennessee again was second. Over three-fourths of the indemnities in Florida were for hurricane with freeze accounting for most of the remainder. There were fewer years with losses due to hurricane than was the case with container practice. Similar to the container practice, most of these indemnities were paid in 2004 to 2006 (Table 40).

Table 40. Indemnities (\$1,000) by Year and Cause of Loss Field Grown Practice Nursery State of Florida 1999 through 2011

Cause of Loss	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Cold Wet Weather	N/A	-	-	-	16	-	-	-	-	-	-	-	-	16
Cold Winter	N/A	-	11	-	-	-	-	-	10	-	-	-	-	21
Drought	N/A	4	9	-	-	-	4	-	-	-	-	-	-	16
Excess Moisture	N/A	-	421	97	572	-	108	-	24	25	8,685	1	-	9,934
Flood	N/A	-	401	-	15	-	-	-	-	-	-	-	-	417
Freeze	N/A	-	391	18	162	-	-	344	305	424	11,499	18,613	440	32,196
Frost	N/A	-	8	-	-	-	-	-	-	-	-	-	-	8
Hail	N/A	-	-	-	-	-	-	-	80	34	-	-	-	114
Hot Wind	N/A	-	32	-	-	-	-	-	-	-	-	-	-	32
Hurricane	N/A	17,604	-	-	-	34,802	18,838	77,965	-	-	2,148	-	-	151,357
Insects	N/A	-	-	-	256	-	-	-	-	244	-	-	-	499
Plant Disease	N/A	-	46	-	-	-	-	-	20	-	-	186	-	252
Tornado	N/A	-	-	-	-	-	-	-	-	97	-	-	-	97
Wind	N/A	-	9	24	-	303	-	-	89	-	24	-	-	448
Total	N/A	17,608	1,327	139	1,021	35,105	18,950	78,309	529	823	22,356	18,800	440	195,407

Source: The Contractor's Underwriting Department after RMA insurance experience data.

Summary of the Experience Analysis

Nursery constitutes a small part of the total crop insurance program except for its share of the total liability. During the period from 1999 to 2010, nursery averaged six percent of the total program liability, but only 0.3 percent of policies earning premium, 0.2 percent of units earning premium, and 1.2 percent of premiums earned. A very high percentage of business under the Nursery Program is at the CAT level of coverage. This pattern is similar for both container and field grown practices. The container practice was the most frequently insured practice, with nearly 36,000 policy-years of experience. The loss ratio for the entire program was less than 1.00, but the loss ratio for the field grown practice was over 1.00. Nonetheless, nursery also had a very small share of the indemnities paid by the crop insurance program in total. Less than 0.1 percent of policies and units earning premium were indemnified. Nursery indemnities constituted 1.6 percent of all indemnities paid by the crop insurance program between 1999 and 2010. Hurricane, freeze, and excess moisture accounted for 86 percent of the policies indemnified and 89 percent of the indemnity value. Flood accounted for only about three percent of policies indemnified but the amount of indemnities associated with flood was nearly equal to the indemnities paid for excess moisture. A Peak Inventory Endorsement, a Nursery Grower's Price Option, and a Rehabilitation Endorsement are offered under the Nursery Program. The volume of business under these optional plans is small, in part because of restrictions on their purchase.

VII.B. Rating Review

This section of the report provides a comprehensive premium rate review for the Nursery Program. Pursuant to the requirements of the Program Evaluation Handbook:

*"The focus of this evaluation component shall be on the adequacy and credibility of the premium rates relative to the insurance experience of the program and information regarding the inherent variability (risk of loss) for the crop, given the plan of insurance."*⁶²

The review compares the current premium rate structure to the historical loss experience. The container and field grown practices are considered separately.

Introduction

The analysis for this premium rate review evaluates what happened from 1999 through 2011 (i.e., the actual experience) as well as simulating what would have happened from 1999 through 2011 at 2012 premium rate levels (i.e., simulated experience). Historical loss ratios adjusted to 2012 premium levels are credibility weighted and recommendations for rate adjustments are provided on a practice and state-by-state basis. The Contractor recommends very modest (+/- 5 percent) adjustments to rate levels in most states. More substantial rate level increases (greater than ten percent) are indicated for five states for the container grown practice and nine states for field grown practice.

The next section of this report, Historical Performance provides a review of the Nursery Program experience data. A section entitled Regional Analysis includes a spatial evaluation of participation and indemnity patterns in the Nursery Program. Credibility and rate adjustment analysis as well as expected changes in program costs due to changes to the rate structure are

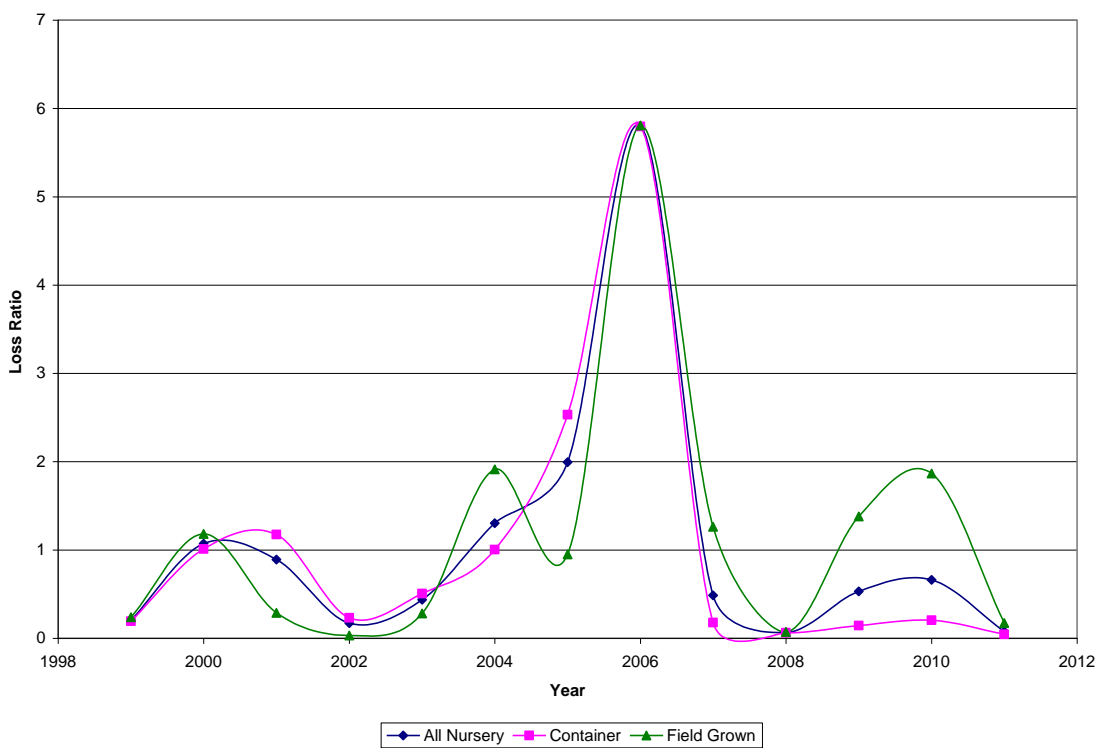
⁶² USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC-22010 (09-2005), p.19.

discussed in a section entitled Proposed Premium Rate Adjustments and a section entitled Effects on Program Costs, which demonstrates changes in costs that would be likely if proposed rate adjustments were adopted. A final section, Concluding Remarks, summarizes the premium rate sufficiency analysis.

Historical Performance

The historical program experience is discussed in the overall framework while evaluating any differences in experience between the field grown and container practices. Historical loss ratio, liability, earned premium rate, frequency of indemnity payments (policy level), and average severity of indemnity payments (policy level) are presented in Figures 1 through 5. Figure 1 provides the annual loss ratio for each nursery practice.

Figure 1. Annual Loss Ratio



Crop year 2006 was a large loss year driven by a hurricane event in Florida. The field grown practice has experienced loss ratios greater than those of the container practice in three of the past five years, and was much higher in all three of those years. The next two figures, Figure 2 and Figure 3, show annual liability and earned premium rate, respectively.

Figure 2. Annual Liability

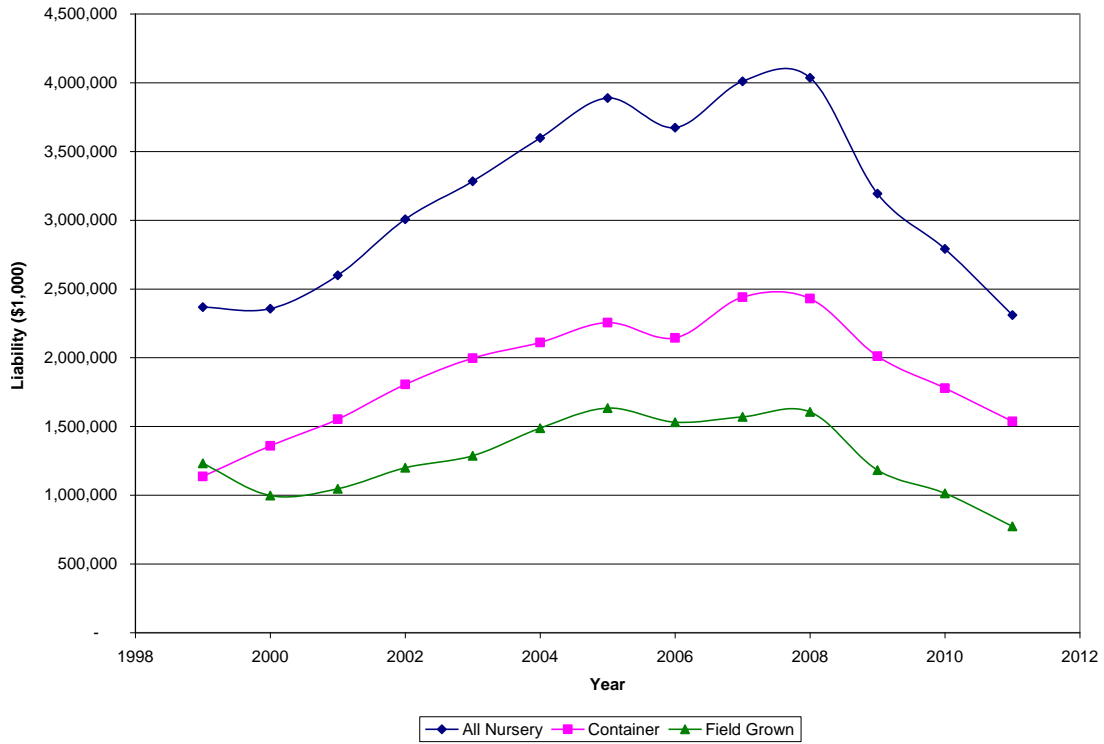
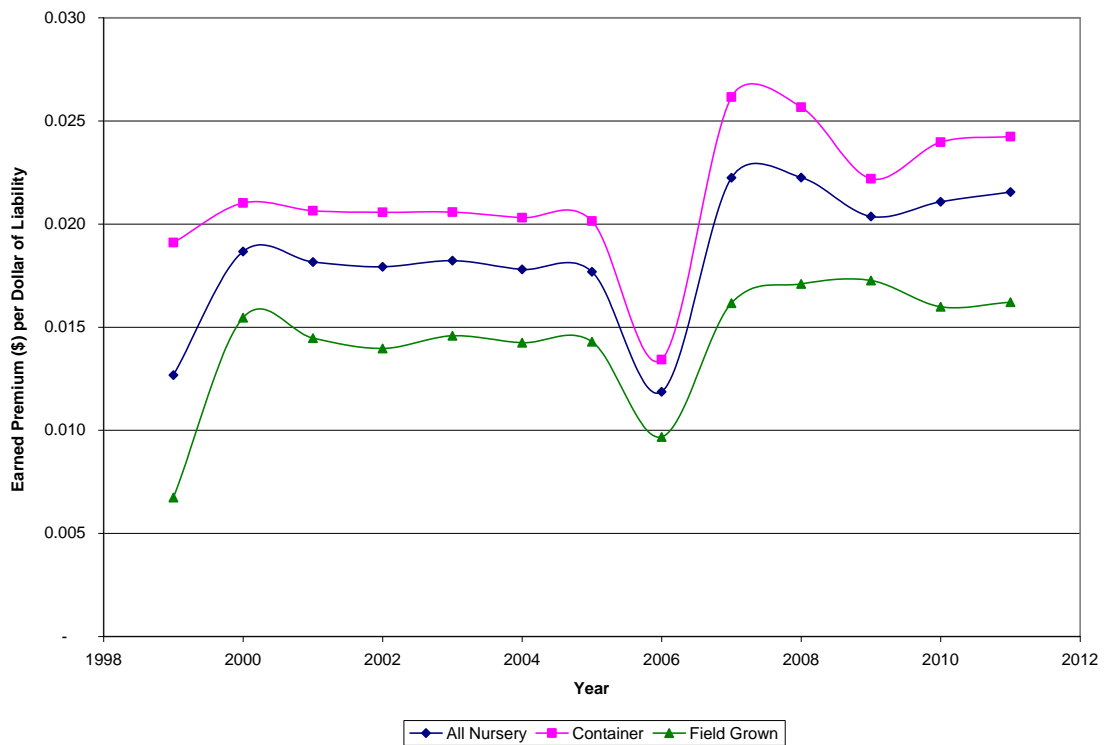


Figure 3. Annual Earned Premium Rate



The patterns in year-to-year changes in liability and earned premium rate are similar for field grown and container practices. Annual liability slowly increased from 1999 to 2008 and declined since 2008. Earned premium rates have been fairly constant (the dip in 2006 was due to a structural change in the Nursery Program) with a small increase for field grown starting in 2007 and a relatively larger increase for the container practice, also in 2007.

The next two figures depict the frequency and severity of indemnity payments per policy. Trends in either of these attributes may indicate underlying changes in the insured pool or changes to the nature of the insured risk.

Figure 4. Frequency of Indemnity Payments

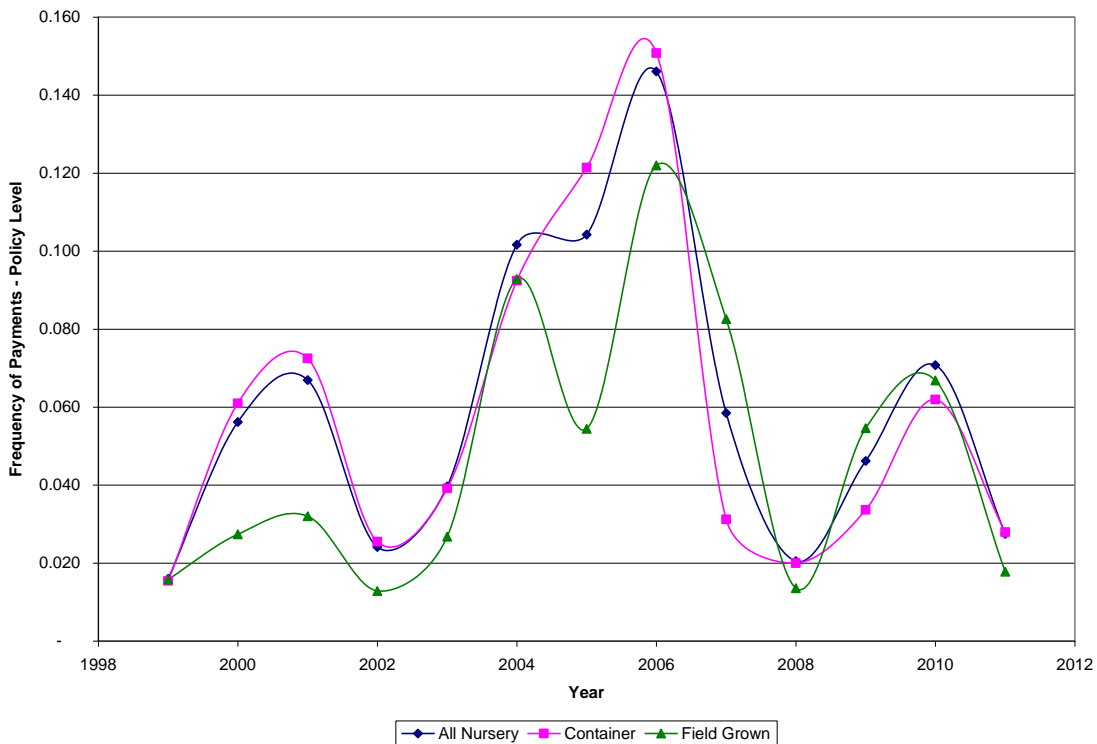
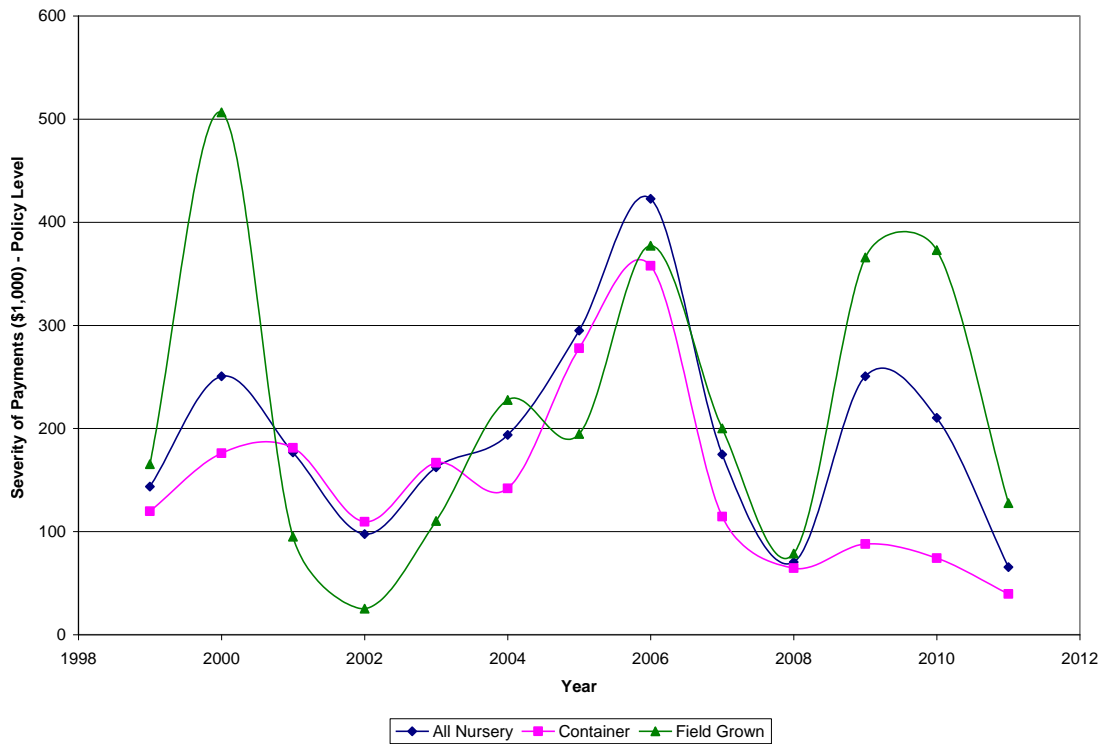


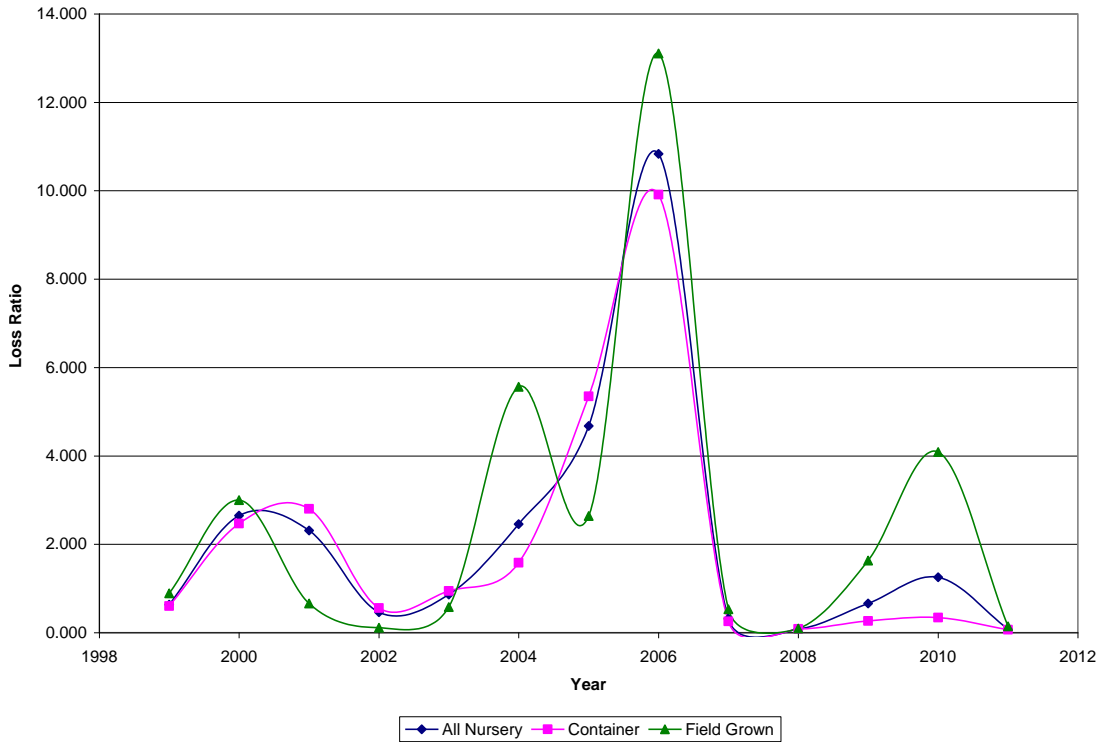
Figure 5. Average Severity of Indemnity Payments



The frequency and severity of indemnity payments do not demonstrate trend or indicate a change in the insured pool during the time period 1999 through 2011. Both fluctuate substantially from year to year, a characteristic that is to be expected in an insurance program of this nature (i.e., a program whose indemnities result primarily from infrequent major weather events).

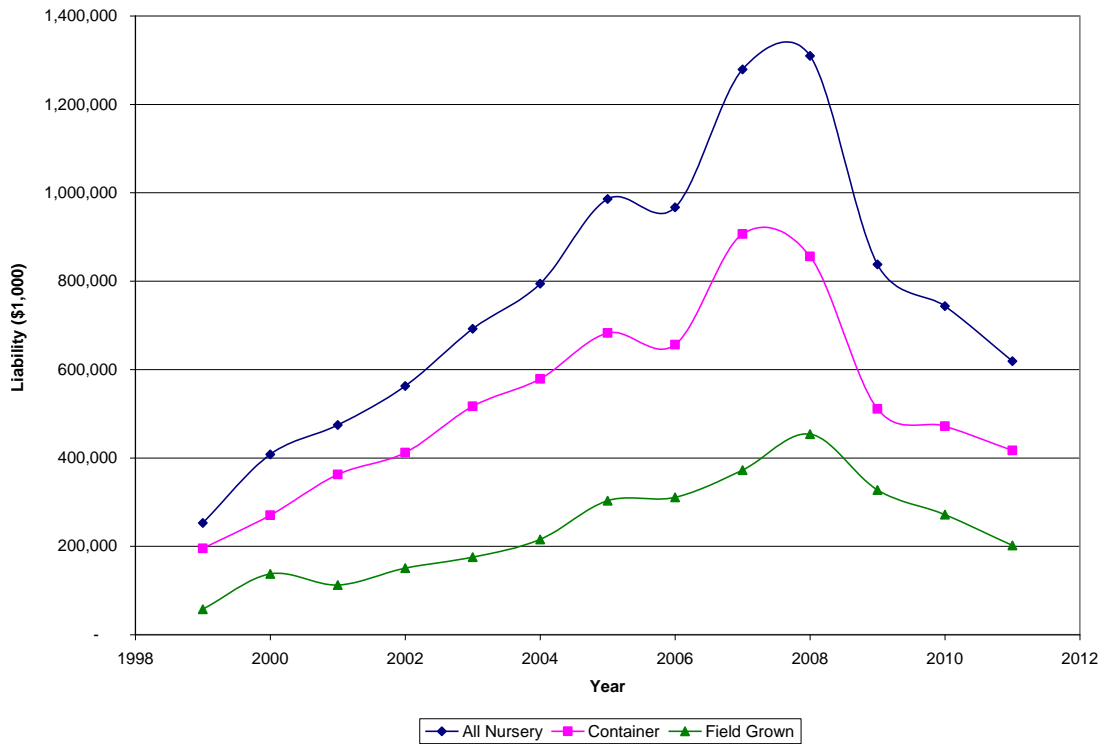
Participation in the Nursery Program at CAT coverage levels is substantial and may mask significant information about the performance of additional coverage. The following figures, Figures 6 through 10, show program experience at additional coverage levels from 1999 through 2011.

Figure 6. Annual Loss Ratio at Additional Coverage Levels



The loss ratios from 1999 through 2011 at additional coverage levels for the Nursery Program, field grown practice, and container practice are 1.73, 2.34, and 1.54, respectively. These loss ratios indicate an increase in rate levels may be warranted, a matter to be examined in more detail in a subsequent part of this section.

Figure 7. Annual Liability at Additional Coverage Levels



The extent of CAT coverage is shown in the magnitude of the difference of the y-axis in Figures 2 and 7. With CAT included (Figure 2) the 2011 total liability was roughly \$2.3 billion and liability at additional coverage levels in 2011 was roughly \$620 million. Container liability at additional coverage levels is as proportionally similar to field grown as it was when CAT coverage was included in the analysis. Additional liability increased from 1999 through 2008 and declined following 2008, following the same pattern exhibited by the total program.

Figure 8. Annual Earned Premium Rate at Additional Coverage Levels



A change in the relative level of rates for field grown and container practices occurred starting with the 2007 crop year. The difference appears to be due primarily to the introduction of the Nursery Grower’s Pilot Price Endorsement. Although the Endorsement had relatively small participation (see Table 28), it had significantly higher earned premium rates. Base premium rates published in the actuarial documents did not change materially between 2005 and 2007.⁶³ The Endorsement is the only major change that can explain this movement in the earned premium rates.

The frequency and severity of indemnity payments at the policy level are shown in Figures 9 and 10, respectively.

⁶³ The comparison is between 2005 and 2007 due to the artificially low earned premium rate for 2006.

Figure 9. Annual Indemnity Frequency at Additional Coverage Levels

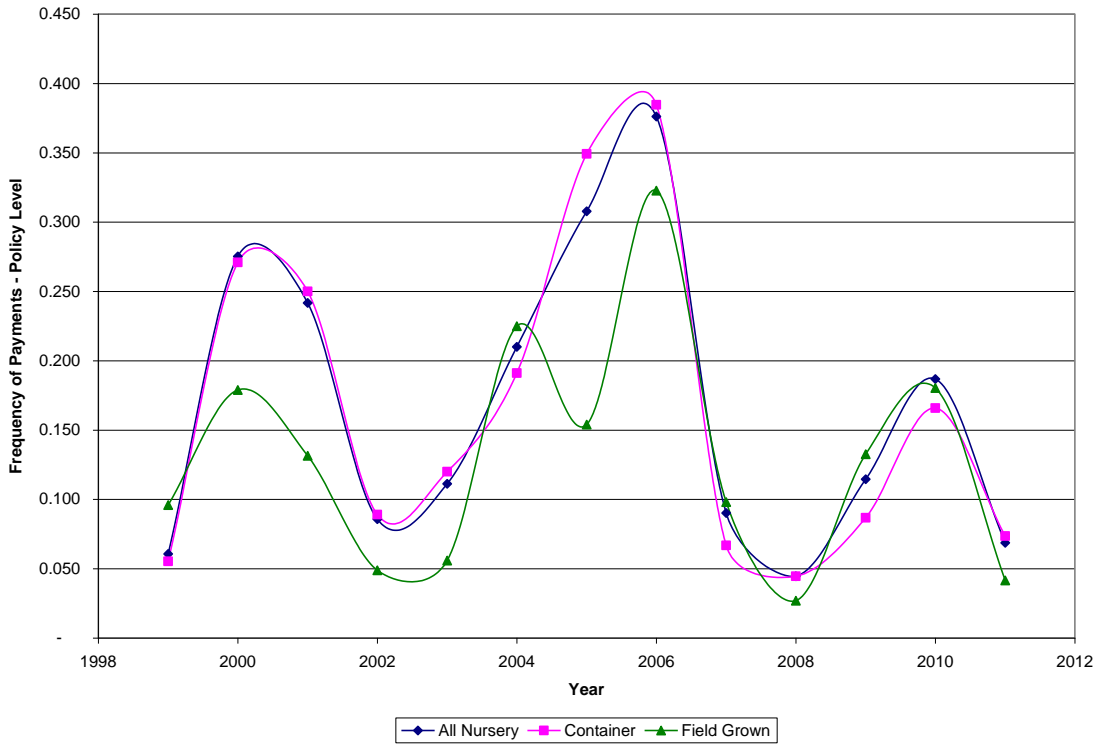
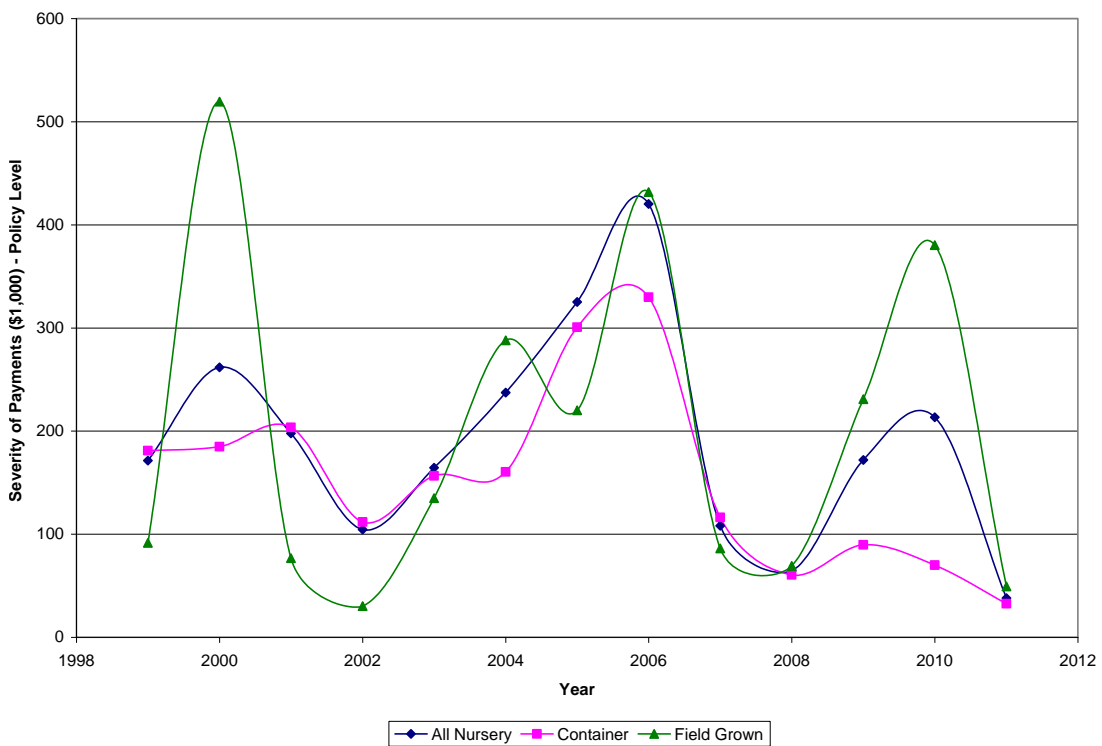


Figure 10. Annual Indemnity Average Severity at Additional Coverage Levels

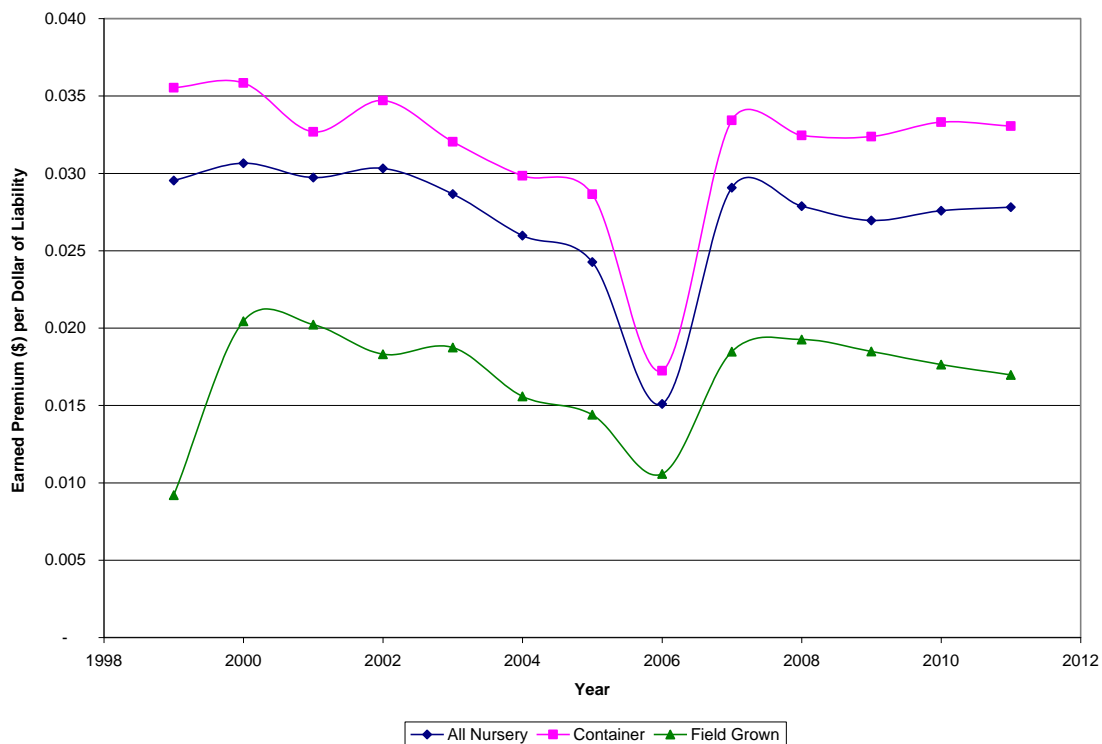


The frequency and severity of indemnity payments for policies purchasing coverage at additional levels do not show a trend or a structural change during the 1999 to 2011 time period.

The next group of figures, Figures 11 through 14, estimate the earned premium rates and loss ratios that would have been observed had the 2012 premium rate levels been in effect for the entire time period. An evaluation of the current premium rate structure requires the historical program premiums to be translated to current year values. In addition to restating the premium rates, historical loss ratios are re-calculated. Liability and indemnity payments are not adjusted.

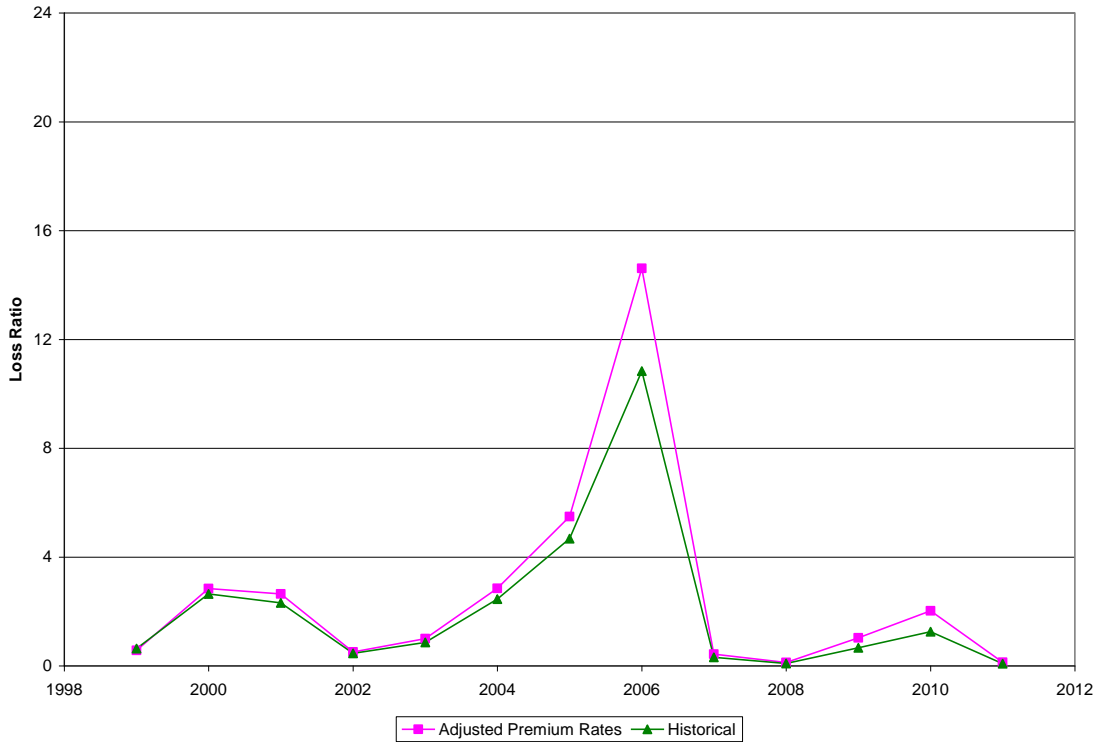
Figure 11 depicts re-stated earned premium rates and Figures 12 through 14 provide loss ratios restated to 2012 premium rate levels. The observed loss ratios are included for comparison.

Figure 11. Annual Earned Premium Rate at Additional Coverage Levels Restated to 2012 Premium Rate Levels



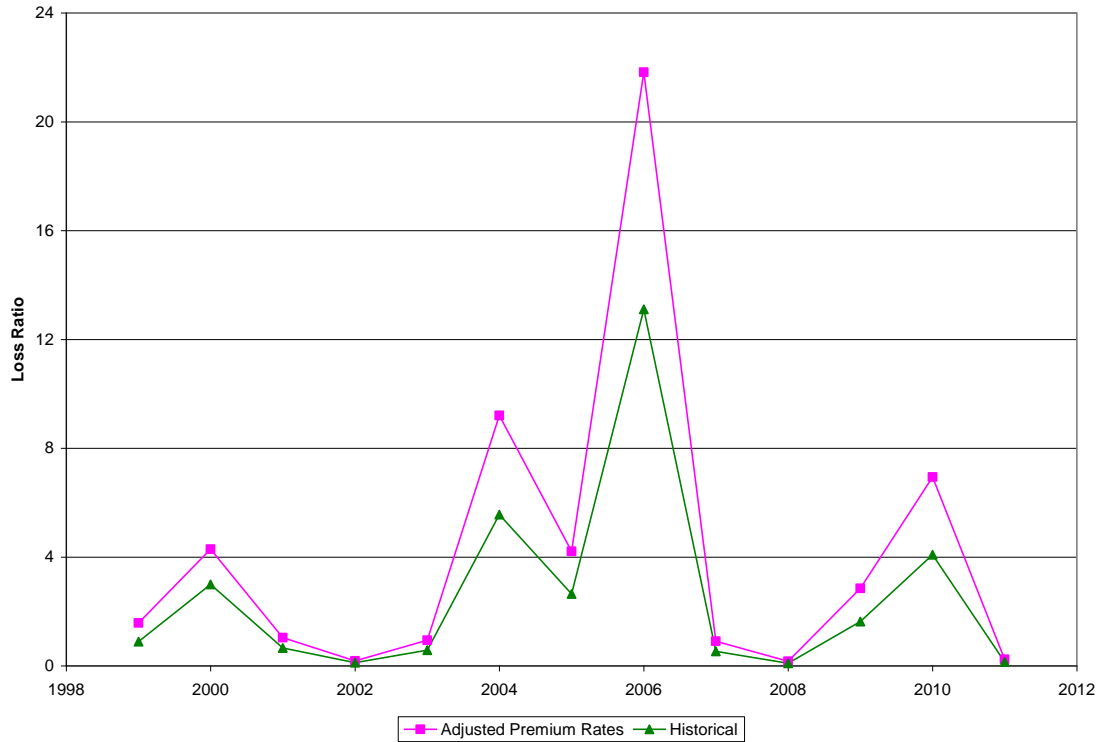
The container practice has a substantially higher average earned premium rate than the field grown practice at 2012 rate levels.

Figure 12. Annual Loss Ratio Comparison for all Practices Restated to 2012 Premium Rates – Nursery



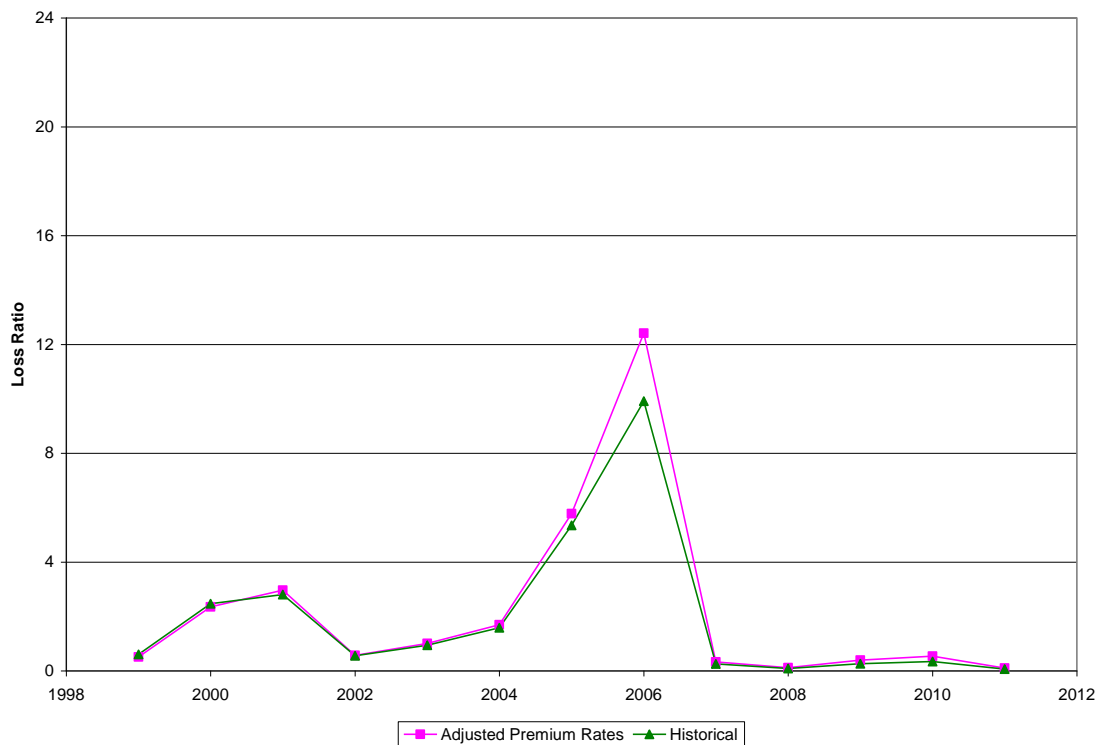
Since the 2012 average premium rates are lower than those observed during the historical period, the annual loss ratios increase relative to the actual values observed. Figures 13 and 14 demonstrate that this outcome is true for both the field grown and container practices.

Figure 13. Annual Comparison Actual Loss Ratio to Loss Ratio with Premium Rate Re-stated to 2012 Level – Field Grown



After adjusting historical premium rates to 2012 levels, the simulated historical loss ratios are substantially higher, particularly in 2006. This provides evidence that current rate levels may not be adequate for the underlying risk associated with the program, plus reasonable reserve.

Figure 14. Annual Comparison Actual Loss Ratio to Loss Ratio with Premium Rate Re-stated to 2012 Level – Container



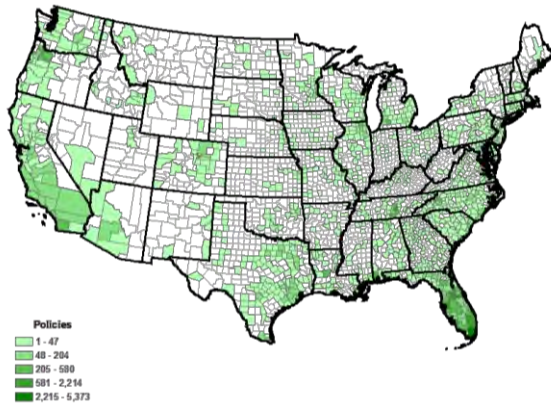
The actual loss ratios and the loss ratios re-stated to the 2012 rate levels are similar for the container practice excepting the 2006 crop year. As shown in Figure 11 the container practice has substantially higher average premium rate levels than the field grown practice. The higher average premium rate (i.e., the denominator in the loss ratio calculation) restricts the amount of possible increase in the loss ratio.

Regional Analysis

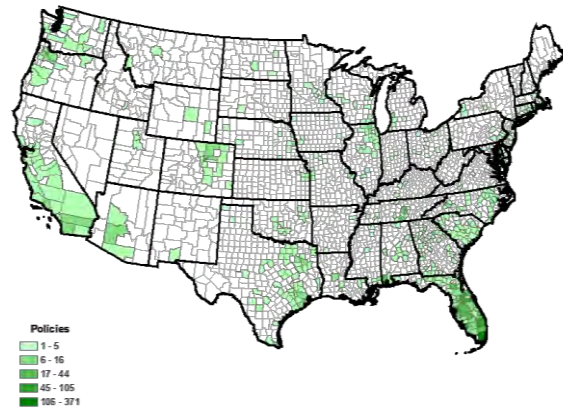
Analysis to this point has looked at the Nursery Program nationally. Further analysis of the program will focus on county- and state-level insurance experience. The top 3 nursery states of Florida, California, and Oregon comprised over 40 percent of the program liability from 1999 through 2011. Florida made up over 85 percent of the paid indemnity.

Evaluation of participation, liability, and loss ratios from 1999 through 2011 are provided in county-level national maps depicted in Figures 15 and 16. The analysis includes both CAT and additional coverage types. Figure 15 shows policies earning premium from 1999 through 2011 (cumulative) and Figure 16 shows policies earning premium for the 2011 reinsurance year.

**Figure 15. Policies Earning Premium
1999 - 2011**



**Figure 16. Policies Earning Premium
2011**



The number of counties with at least one policy earning premium between 1999 through 2011 is greater than the number of counties with at least one policy earning premium in 2011, which is consistent with the declining participation since 2008 as demonstrated in Figure 2. Figure 17 shows cumulative liability for years 1999 through 2011 and Figure 18 presents liability for crop year 2011.

Figure 17. Liability 1999 - 2011

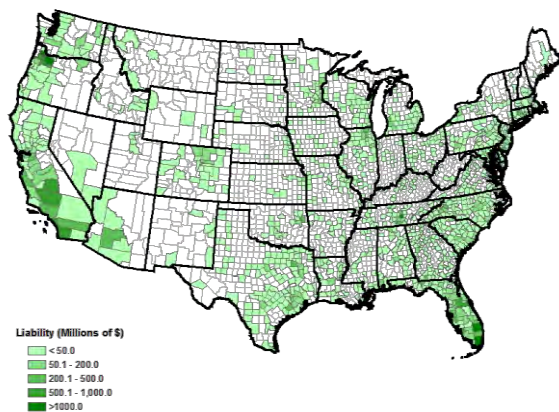
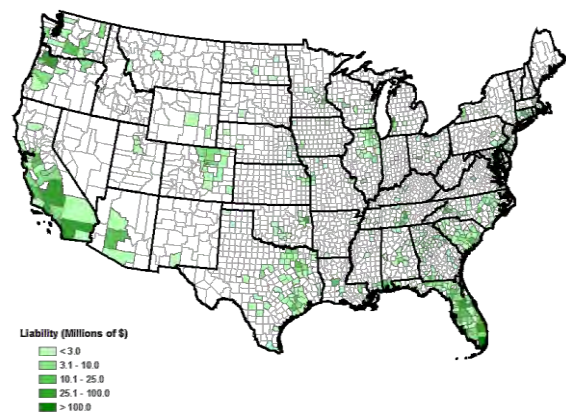


Figure 18. Liability 2011



Liability has been concentrated in Florida, California, and Oregon from 1999 through 2011 and this continued in the 2011 crop year. The next set of maps show indemnities paid and loss ratios from 1999 through 2011.

Figure 19. Indemnities Paid 1999 - 2011

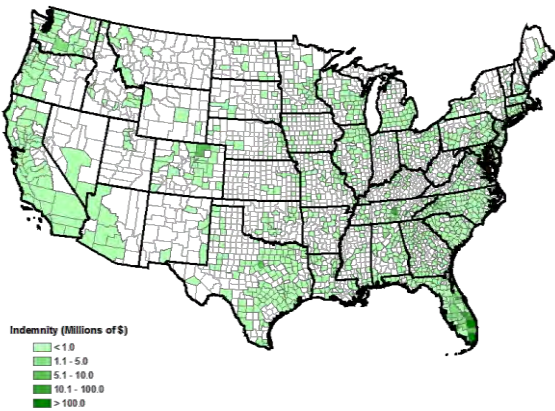
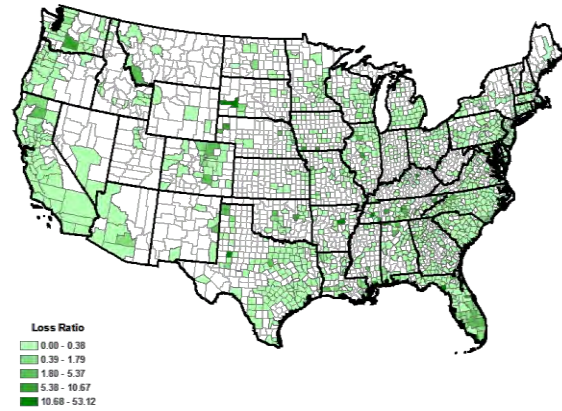
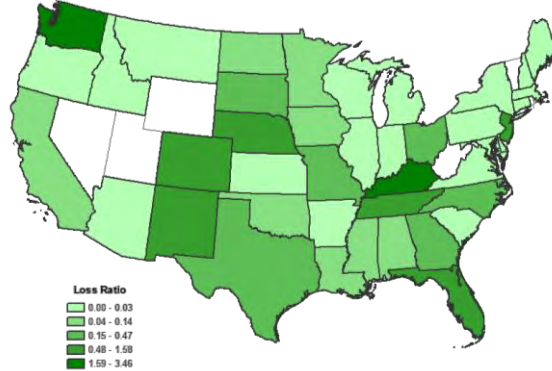


Figure 20. Loss Ratio 1999 - 2011



Cumulative loss ratios at the state level for 1999 through 2011 are shown in Figure 21.

Figure 21. State Loss Ratios 1999 - 2011



Florida makes up roughly 25 percent of program liability from 1999 through 2011. Florida county-level maps for policies earning premium, liability, indemnities, and loss ratio are provided in Figures 22 through 25.

Figure 22. Florida Policies Earning Premium 1999 - 2011

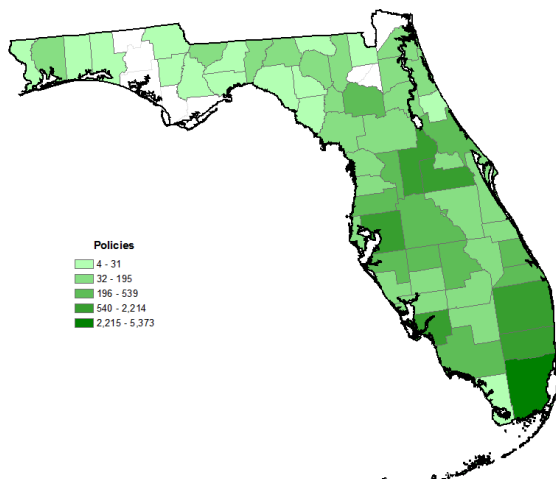


Figure 23. Florida Liability 1999 - 2011

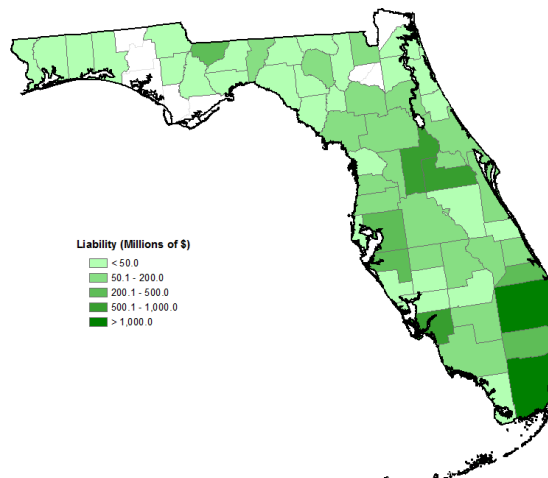


Figure 24. Florida Indemnities Paid 1999 - 2011

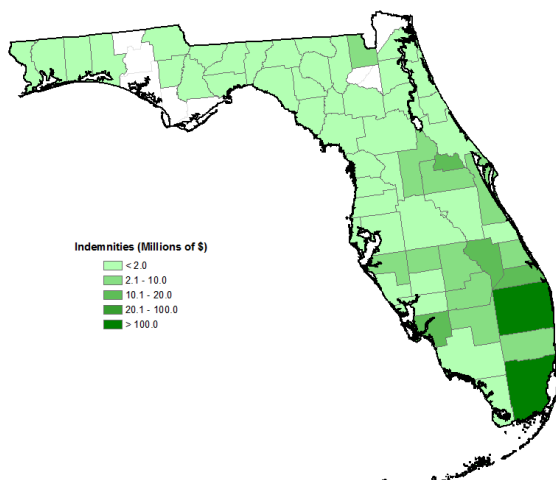
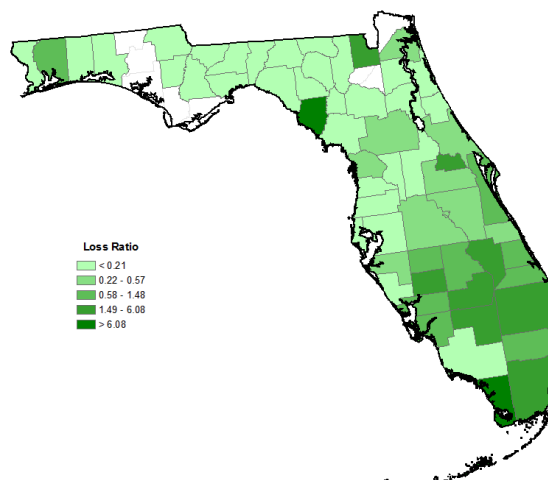


Figure 25. Florida Loss Ratios 1999 - 2011



Analysis of historical loss ratios after adjusting premiums for additional level policies to 2012 premium levels indicates that premium rates may not be sufficient to cover expected losses. However, 1999 through 2011 is a limited time period considering the pattern of expected losses for the Nursery Program and it may be that the 13-year period has included unusually severe events. A Florida hurricane event, for example, may be over-weighted in the experience data. The following section utilizes classical credibility analysis to determine the weight to apply to observed data relative to the existing rate structure. Credibility weighted rate adjustments are proposed on a practice and state-by-state basis.

Proposed Premium Rate Adjustments

The Contractor notes in Figure 6 that premium rates did not cover indemnity payments for policies with additional coverage levels from 1999 through 2011. Furthermore, re-statement of historical premiums at 2012 rate levels increased the amount by which indemnities out-paced premiums (Figure 12). This indicates current rate levels may not adequately represent the underlying risk. However, the short-term nature of the years 1999 to 2011 may mean severe events are either over- or under-represented in the data sample. A decision regarding the amount of “weight” or credibility to assign to the experience data relative to the existing rate structure needs to be determined. The blending of the current rate structure with historical performance data should improve the accuracy of premium rates.

Actuarial Standards of Practice 25 defines credibility as “... a measure of the predictive value in a given application that the actuary attaches to a particular body of data.”⁶⁴ Classical credibility theory (also referred to as limited fluctuation credibility) is used to determine a weight to attach to historical program performance when estimating adjustments to the premium rates for an insurance program.

For the purpose of determining credibility, an observation is defined as a county/year combination. If there were 5 counties in a state with policies earning premium for 10 years, the total observation count for that state would be 50. The basic approach to classical credibility is shown in Equation (1.1)

$$\text{AdjustmentFactor} = Z \cdot \text{ObservedExperience} + (1 - Z) \cdot \text{InitialEstimate} \quad (1.1)$$

where Z is the credibility estimate, *ObservedExperience* is the loss ratio from 1999 through 2011 after adjusting to 2012 rate levels, and the *InitialEstimate* is a loss ratio of 1 (i.e. current premium rate levels are set appropriately).⁶⁵

There are two steps to calculate the credibility value Z . The first step is to estimate n , the number of observations required for full credibility (full credibility means program experience would entirely dictate the rate level) and the second step is to apply the “square-root rule” and calculate Z .

Estimating the full credibility value requires a determination of the expected accuracy of the estimate (e.g. that there be a 90 percent probability of being within 5 percent of the expected mean) and a measure of the underlying coefficient of variation of the data series. The coefficient of variation (CV) of the underlying data series is used so there is a direct relationship between the CV and n . A more variable underlying series requires more observations for full credibility. The data series in this case is the set of annual loss ratio estimates for each county in a state for which a policy earned premium in a given year. The mean loss ratio and standard deviation of the loss ratios are weighted with the earned premium in the given county for a given year relative to the total premium in the state from 1999 through 2011. The weight w for county i in year t is determined as

⁶⁴ ASOP 25 reference

⁶⁵ A thorough discussion of limited fluctuation credibility can be found in Chapter 20 of “Loss Models” Third Edition (2008) by Klugman, Panjer, and Willmont.

$$w_t^i = \frac{Premium_t^i}{\sum_{t=1999}^{2011} \sum_{i=1}^I Premium_t^i} \quad (1.2)$$

where i is the total number of counties in the state. The weighted mean loss ratio for a state, μ , is calculated as the sum of the product of the loss ratio in county i in year t and the weight from Equation (1.2).

$$\mu = \sum_{t=1999}^{2011} \sum_{i=1}^I lossRatio_t^i \cdot w_t^i \quad (1.3)$$

The premium weighted variance (for ease of presentation the loss ratio is noted as x and the across county and temporal summations are indicated as summing i through N) is calculated as:

$$\sigma^2 = \frac{\sum_{i=1}^N w_i \cdot x_i^2 \cdot \sum_{i=1}^N w_i - \left(\sum_{i=1}^N w_i \cdot x_i \right)^2}{\left(\sum_{i=1}^N w_i \right)^2 - \sum_{i=1}^N w_i^2} = \frac{\sum_{i=1}^N w_i}{\left(\sum_{i=1}^N w_i \right)^2 - \sum_{i=1}^N w_i^2} \cdot \sum_{i=1}^N w_i \cdot (x_i - E[x])^2 \quad (1.4)$$

A base threshold of 1,082.41 observations is set due to the choice of 90 percent probability of being within 5 percent of the expected value (the value is derived assuming normality). This base threshold is multiplied by the square of the coefficient of variation. For example, the Florida container practice has a mean loss ratio of 2.022 and a standard deviation of 4.5576 which leads to a full credibility observation count of

$$n = 1082.41 \cdot \left(\frac{4.5576}{2.022} \right)^2 = 5,499.26 \quad (1.5)$$

Applying the square root rule with 495 observations for the Florida container practice yields a Z value calculated as

$$Z = \sqrt{\frac{495}{5499.26}} = 0.30 \quad (1.6)$$

This means that a 30 percent weight is applied to the experience loss ratio and 70 percent weight is applied to the existing rate (i.e. no change). The program experience adjusted to 2012 rate levels indicates an average loss ratio of 2.022. When adjusted to account for a reasonable reserve by dividing by 0.88, the indicated rate adjustment is calculated as⁶⁶

$$Adj = \frac{2.022 \cdot 0.30}{0.88} + 1 \cdot (1 - 0.30) = 1.3893 \quad (1.7)$$

⁶⁶ The weighted average loss ratio is adjusted to account for a disaster reserve target which is equal to the average loss costs / 0.88. See pages 31-32 of "A Comprehensive Review of the RMA APH and COMBO Rating Methodology" for further details.

The result of Equation (1.7) indicates a 39 percent increase in premium rates for the Florida Nursery container practice would be appropriate under actuarial theory.

Tables 41 and 42 include the calculation inputs and rate adjustment factors for the container and field grown practices. If a state has not had any loss events, meaning it has a zero standard deviation in loss ratio outcomes, the reviewer set the coefficient of variation to the average of states with a non-zero standard deviation, 8.65 for the container practice and 5.57 for the field grown practice. The tables are organized to depict the estimated premium rate adjustment factor from low to high.

Table 41. Nursery Program Loss Ratio Credibility Summary Table – Container Practice

State	Observations	Loss Ratio	Loss Ratio Standard Deviation	Full Credibility Observation Count	Credibility	Rate Adjustment Factor
Georgia	141	0.4713	2.5745	32,295.75	0.0661	0.9693
Pennsylvania	87	0.0402	0.3787	96,270.31	0.0301	0.9713
Maryland	66	0.0000	0.0000	80,988.62	0.0285	0.9715
Minnesota	60	0.0000	0.0000	80,988.62	0.0272	0.9728
Missouri	49	0.2983	1.6850	34,546.83	0.0377	0.9751
Hawaii	39	0.0000	0.0000	80,988.62	0.0219	0.9781
Kentucky	21	0.1901	0.9867	29,157.49	0.0268	0.9790
South Carolina	122	0.0313	0.4822	256,366.08	0.0218	0.9790
Arkansas	33	0.0000	0.0000	80,988.62	0.0202	0.9798
Wisconsin	32	0.0000	0.0000	80,988.62	0.0199	0.9801
Alabama	89	0.5806	3.1458	31,773.81	0.0529	0.9820
Connecticut	24	0.0000	0.0000	80,988.62	0.0172	0.9828
Nebraska	24	0.0000	0.0000	80,988.62	0.0172	0.9828
Ohio	23	0.0000	0.0000	80,988.62	0.0169	0.9831
Oregon	23	0.0000	0.0000	80,988.62	0.0169	0.9831
Washington	23	0.0000	0.0000	80,988.62	0.0169	0.9831
Kansas	19	0.0000	0.0000	80,988.62	0.0153	0.9847
Massachusetts	18	0.0000	0.0000	80,988.62	0.0149	0.9851
New York	18	0.0000	0.0000	80,988.62	0.0149	0.9851
Michigan	16	0.0000	0.0000	80,988.62	0.0141	0.9859
North Carolina	261	0.7391	4.1800	34,620.13	0.0868	0.9861
Illinois	87	0.0289	0.5996	467,233.27	0.0136	0.9868
Indiana	14	0.0000	0.0000	80,988.62	0.0131	0.9869
Mississippi	32	0.5249	2.7870	30,509.73	0.0324	0.9869
Virginia	75	0.0011	0.0244	572,700.81	0.0114	0.9886
Arizona	19	0.1889	1.7685	94,839.72	0.0142	0.9889
Delaware	8	0.0000	0.0000	80,988.62	0.0099	0.9901
Colorado	112	0.7096	4.8903	51,410.54	0.0467	0.9910
New Hampshire	6	0.0000	0.0000	80,988.62	0.0086	0.9914
Oklahoma	31	0.0614	1.2373	439,449.62	0.0084	0.9922
Idaho	4	0.0000	0.0000	80,988.62	0.0070	0.9930
North Dakota	4	0.0000	0.0000	80,988.62	0.0070	0.9930
California	95	0.6903	6.7301	102,897.29	0.0304	0.9934
Maine	3	0.0000	0.0000	80,988.62	0.0061	0.9939
Rhode Island	2	0.0000	0.0000	80,988.62	0.0050	0.9950
South Dakota	2	0.0000	0.0000	80,988.62	0.0050	0.9950
Iowa	13	0.3209	7.5661	601,569.23	0.0046	0.9970
New Jersey	9	2.0199	3.7835	3,797.66	0.0487	1.0631
Texas	243	1.4661	6.1606	19,112.16	0.1128	1.0751
Louisiana	45	2.1509	5.9803	8,367.83	0.0733	1.1059
New Mexico	6	4.2834	9.6750	5,522.10	0.0330	1.1275
Tennessee	80	2.7457	12.1570	21,219.26	0.0614	1.1302
Montana	3	5.0547	7.1991	2,195.61	0.0370	1.1754
Florida	495	2.0220	4.5576	5,499.26	0.3000	1.3893

Source: W&A Rating Department

The adjustment factors range from -3.07 percent for Georgia to +38.93 percent for Florida with 37 of the 44 states showing a modest decline in premium rates.

Table 42. Nursery Program Loss Ratio Credibility Summary Table – Field Grown Practice

State	Observations	Loss Ratio	Loss Ratio Standard Deviation	Full Credibility Observation Count	Credibility	Rate Adjustment Factor
Illinois	45	0.0000	0.0000	33,581.66	0.0366	0.9634
Wisconsin	21	0.1402	0.4669	12,007.53	0.0418	0.9648
Georgia	40	0.0000	0.0000	33,581.66	0.0345	0.9655
Arizona	19	0.0000	0.0000	33,581.66	0.0238	0.9762
Kansas	19	0.0000	0.0000	33,581.66	0.0238	0.9762
Oregon	14	0.0000	0.0000	33,581.66	0.0204	0.9796
Hawaii	13	0.0000	0.0000	33,581.66	0.0197	0.9803
New Mexico	13	0.0000	0.0000	33,581.66	0.0197	0.9803
Pennsylvania	13	0.0000	0.0000	33,581.66	0.0197	0.9803
Arkansas	12	0.0000	0.0000	33,581.66	0.0189	0.9811
Montana	12	0.0000	0.0000	33,581.66	0.0189	0.9811
Idaho	10	0.0000	0.0000	33,581.66	0.0173	0.9827
Michigan	10	0.0000	0.0000	33,581.66	0.0173	0.9827
Minnesota	63	0.3236	2.9397	89,335.30	0.0266	0.9832
Maryland	9	0.0000	0.0000	33,581.66	0.0164	0.9836
Massachusetts	6	0.0000	0.0000	33,581.66	0.0134	0.9866
Mississippi	6	0.0000	0.0000	33,581.66	0.0134	0.9866
New York	6	0.0000	0.0000	33,581.66	0.0134	0.9866
California	41	0.3644	3.3352	90,692.46	0.0213	0.9875
New Jersey	5	0.0000	0.0000	33,581.66	0.0122	0.9878
Virginia	40	0.0844	1.2853	250,949.00	0.0126	0.9886
New Hampshire	4	0.0000	0.0000	33,581.66	0.0109	0.9891
Missouri	38	0.3982	4.1650	118,435.04	0.0179	0.9902
Indiana	3	0.0000	0.0000	33,581.66	0.0095	0.9905
South Carolina	27	0.0155	0.2640	312,569.82	0.0093	0.9909
North Dakota	7	0.5142	1.9714	15,908.32	0.0210	0.9913
Wyoming	2	0.0000	0.0000	33,581.66	0.0077	0.9923
Oklahoma	47	0.7790	2.5735	11,813.49	0.0631	0.9928
Louisiana	9	1.6326	8.1458	26,944.93	0.0183	1.0156
Ohio	22	1.2780	4.5092	13,474.93	0.0404	1.0183
Nebraska	48	2.1890	12.1251	33,209.14	0.0380	1.0566
Iowa	23	3.4186	23.1810	49,770.33	0.0215	1.0620
Alabama	73	2.7766	13.4626	25,446.16	0.0536	1.1154
Texas	112	3.1683	14.9718	24,170.85	0.0681	1.1770
Colorado	132	3.4731	14.8176	19,702.03	0.0819	1.2412
North Carolina	147	2.2655	5.1570	5,608.53	0.1619	1.2549
Kentucky	19	11.1913	20.7379	3,716.72	0.0715	1.8378
Florida	352	4.2175	9.9600	6,036.77	0.2415	1.9158
Tennessee	91	7.0935	11.9051	3,048.90	0.1728	2.2198
Washington	23	12.0765	18.1616	2,448.01	0.0969	2.2333
South Dakota	15	23.6193	31.0604	1,871.86	0.0895	3.3131

Source: W&A Rating Department

The adjustment factors for the field grown practice range from -3.66 percent for Georgia to +313.15 percent for South Dakota with 28 of the 41 states showing a modest decline in rates.

The next section discusses possible effects on program costs should rates be adjusted as the credibility analysis has indicated.

Effects on Program Costs

Analysis of the Nursery Program from 1999 through 2011 has indicated that rate increases should be implemented in a small number of states while most states should receive modest decreases in premium rate levels. However, the states whose history indicates that an increase in rate levels is required also tend to be those states with the most premium at additional coverage levels in 2011. This has the effect of causing an overall increase in program premium and subsidy. Estimates of the affects of proposed rate changes on program costs use 2011 as a base year, preserve the premium weighted average subsidy amount from 2011, and show the change in program costs if proposed rate changes were to be implemented on the 2011 insured pool. Administrative and operating costs are estimated as 21.9 percent of the total premium.

Table 43. Program Cost Estimates

	Liability	Premium	Subsidy	SRA Administrative Costs
	(dollars)			
Crop Year 2011 - Buy up Coverage Levels	618,629,637	25,033,305	15,310,539	5,482,294
Crop Year 2011 with Premium Rate Changes	618,629,637	36,082,278	22,066,781	7,902,019
Difference		11,048,973	6,756,242	2,419,725

Source: W&A Rating Department

Proposed adjustments to premium rates are estimated to increase total premium by \$11 million, which is 43 percent of 2011 premium. However, limitations on year-to-year rate changes imposed by RMA will dampen the effect of the proposed rate changes in the initial years of implementation.

Concluding Remarks

Analysis of the historical experience of the Nursery Program and analysis of what the historical experience may have been at 2012 premium rate levels for additional coverage levels leads to the conclusion that substantial increases in premium rate levels are warranted for a few state and practice combinations, particularly some of the states with the largest participation numbers, and modest decreases should be made in premium rate levels for the remaining states. However, it may be that events which have a lower frequency have been included in the history used for the analysis and therefore increases in premium rates may be overstated. A process which includes modest increases in premiums over a period of many years and that can be adjusted as additional performance information is gained will limit the effects on producers. It is also worth noting that these analyses were made *ceteris paribus*, without consideration to the many recommended changes to underwriting contained in this report. While none of the individual underwriting changes recommended are likely to result in substantial changes in frequency or size of indemnities, the many changes may have a noteworthy collective impact. This potential also

argues for scaling in the recommended adjustments over the course of several years to facilitate understanding of the compounding effects of the other changes recommended in the report.

SECTION VIII. CONCLUSIONS AND RECOMMENDATIONS

This section of the evaluation report addresses the requirement that:

The eighth section of the report shall contain the conclusions and recommendations. Particularly salient conclusions will be whether (1) an acceptable insurance risk does or does not exist, and (2) the plan of insurance is appropriate for the crop. The recommendations shall be subdivided into individual sections dealing with changes in statute, in regulations, in the actuarial documents, and in procedures.... If it is concluded that a new (or replacement) plan of insurance should be adopted for the crop, recommendations of sufficient detail to allow development shall be provided in this section.⁶⁷

As noted previously, the Nursery Program does not fit the typical ‘mold’ for crop insurance programs. The insured plants include hundreds of thousands of species/variety/size/practice combinations possessing a multitude of prices. A focus on inventory for a range of items this large introduces an almost irrational element of complexity into the purchase of a policy, maintenance of acceptable record, and loss adjustment. An acceptable insurance risk does exist for nursery crops. The relevant risks for policies, taken as a whole, are characterized by limited and localized losses due to isolated events (e.g., fire, landslide, tornadoes, wind sheer, and localized flooding or freezes), but include more general (i.e., widespread) risk of losses from severe, major loss events like hurricanes and hard freezes. Longer-term climatic risks (drought, extended periods of below average temperatures, etc) pose little potential for indemnifiable loss.

Stakeholder input indicated the nursery industry believes an appropriate insurance coverage plan is essential to its long-term survival. However, input from producers and agents suggested at least a substantial portion of the decline in participation in the Nursery Program in recent years is tied to the perceived “burdensome” requirements associated with the product. This perception is not surprising considering the insured plants potentially include hundreds of thousands of species/variety/size/practice combinations and associated prices. But the perception the insurance approach is burdensome is also driven by the reality that, with rare exceptions, nurseries do not maintain a precise inventory of the plants on a nursery operation. Only two producers who participated in the listening sessions indicated their inventory systems were precise and accurate. Many producers believe their inventories are accurate, but do not measure the total value as precisely as the Nursery Program expects and requires (the actual inventory may differ from the estimated inventory by plus or minus a percentage that can be as high as the ten percent used in the over-reporting factor). Regardless of the level of precision, for many operations, and particularly for container operations in Florida, the inventory numbers change daily as new plants are purchased or planted and plants already on site are sold. Furthermore, for some operations, and particularly for operations structured to produce bedding and landscaping plants, inventory turnover of many plant types may occur several times each year. Therefore, basing an insurance program on inventory is inherently problematic.

This is not to say inventory cannot be insured. High value nursery plants (i.e., individual plants with a wholesale value in excess of a value such as \$25 or \$100) are carefully monitored and inventoried. But for the bulk of plants on the majority of operations, an insurance approach that

⁶⁷ USDA, RMA, 2005, Program Evaluation Handbook: 2006 and Succeeding Crop Years (FCIC – 22010 (09-2005)), pp. 12.

is based on the present detailed inventory listings will be perceived as burdensome, and perhaps as unreasonably burdensome.

This information provides a unique context for the Contractor's recommendations concerning whether the Nursery Program be terminated, replaced, continued with modifications, or continued without changes. Producers of nursery plants face production risks that are insurable since the existence of an event causing a loss can be established with third party information. The industry is a substantial element of the agricultural economy, albeit an element that is difficult to quantify precisely. A sufficient number of producers are risk averse, so simply terminating the existing Nursery Program is not an option producers (or the insurance industry) would welcome. RMA could expect substantial political response to such an action, especially considering the distribution of production by state and by county. While such a decision would not violate any legislation, various populations of taxpayers would likely feel their safety net was being taken away unfairly.

Considering trends in the level of participation, program complexity, and administrative costs, maintaining the current program without changes is unacceptable. As discussed in the program component analysis, the Crop Provisions do not clearly define the producer's responsibilities. At a minimum the provisions need to be rewritten and the documents for the program need to be more carefully articulated and coordinated.

That leaves the possibilities of replacing the Nursery Program with one or more other products or continuing the current program with modifications as topics for further discussion. The former topic is addressed in part in Deliverable 1b. A formal evaluation of the numerous replacement options structured according to the guidelines in the Program Evaluation Handbook is beyond the scope of this report (i.e., Deliverable 1a). RMA will need to review those alternatives to determine if any one or a combination of the approaches provides an acceptable choice for further research and development.

The Contractor believes replacement of the present unwieldy and ill-fitting structure for determining liability is an option that should be explored by RMA. The Contractor would categorize any crop insurance structure for nursery that significantly modifies the PIVR documentation, including any approach that creates a different "acreage report" for nursery crops, as a program modification. Modification also introduces the possibility of a suite of products (or at least a suite of endorsements) that would better address the risk management needs of each disparate sector (i.e., bedding plants, woody landscaping plants, grafted production agricultural plants) within the nursery segment of the U.S. agricultural economy.

Therefore, considering the scope and structure of the contract controlling this evaluation project, the remainder of this section of the report will focus on the Contractor's recommendations concerning continuation of the Nursery Program with substantial modifications.

Recommendations Affecting Statute

Regarding continuation of the Nursery Program with modifications, the Contractor has no recommendation that affects the Federal Crop Insurance Act.

Recommendations Affecting Regulations

Regarding continuation of the Nursery Program with modifications, the Contractor's recommendation affects the regulations published at 7 CFR 457.162 (the Nursery Crop Insurance Provisions).

Recommendations Affecting Actuarial Documents and Procedures

Regarding continuation of the Nursery Program with modifications, the Contractor has no recommendation that affects any fundamental element of the CIH, the FCI-35 documents, or the LAM. Recommendations affecting the Crop Provisions, the Special Provisions, the LASH, the Underwriting Guide, and the LAM to improve clarity and remove ambiguities are incorporated here by reference to the preceding component discussions. The Contractor also makes specific recommendations concerning determination of rates, insurable practices, loss adjustment procedures, and abandoned acreage below.

Rates

Analysis of the actual and simulated historical experiences of the Nursery Program for additional coverage levels leads to the conclusion that substantial increases in premium rate levels are warranted for a few state and practice combinations, particularly some of the states with the largest participation numbers, and modest decreases should be made in premium rate levels for the remaining states. However, inasmuch as events which have a lower frequency have been included in the history used for the analysis and therefore increases in premium rates may be overstated, the Contractor recommends a process which includes modest increases in premiums over a period of many years that can be adjusted as additional performance information is gained will limit the effects on producers.

Added Practice

The Contractor recommends RMA consider adding Grafting/Grafted Nursery Plants as a practice under the Nursery Crop Provisions. The present Nursery Crop Provisions specifically exclude stock plants "grown solely for harvest of buds" (08-073 (Rev. 10-06), section 8(i)). Therefore, the plants from which the scion is harvested, perhaps the most valuable assets in nursery operations that propagate grafted plants, are not insurable. Furthermore, rootstock is generally uninsurable in its earliest stages because of size limitations. Finally, when the grafted plants are pruned to stimulate growth of the scion the grafted plants are often much less than six inches tall and therefore again fall outside the size categories that are insurable. The transition of grafting/grafted nursery plants from uninsurable to insurable to uninsurable to insurable introduces an unreasonable and unacceptable element of complexity into an already complex insurance program. Grafting of and grafted nursery plants play an important role in the U.S. food supply. Inasmuch as nursery insurance exists at all, insuring important elements of the agricultural economy that addresses food supply is appropriate. Finally, the management practices for grafting/grafted nursery plants are better defined than are the practices for many nursery crops. Thus barriers to implementing insurance for this practice are neither structural nor contrary to legislation.

Loss Adjustment

The Contractor heard repeatedly that loss adjusters were not aware of nursery practices and could therefore not properly adjust losses. This deficiency seems to derive from the need to identify

the extent of damage on individual plants. The repeated nature of this complaint indicates that frequently the requirements of section 7B of the Nursery Loss Adjustment Standards Handbook may not be met.

If the current asset-based insurance is to be maintained, it is essential that the loss adjustment processes be changed so those who have suffered a loss believe the outcome of the loss adjustment process is fair and reasonable. To this end, the Contractor makes three recommendations:

1. Require that knowledgeable nurserymen be included in the loss adjustment process (the present language in section 7B is permissive);
2. Revise the approach for dealing with nursery plants that are perceived to have residual value greater than zero; and
3. Add a loss example tool to the portfolio of Nursery Program materials. This tool would be structured to allow potential insureds to see the impact of decisions about coverage levels and purchase of endorsements on indemnities following various hypothetical loss events.

The Contractor believes the first two of these recommendations are necessary to gain acceptance by nursery growers of the validity of loss adjustment determinations. The third is made in the interests of better educating nursery growers and agents as to the scope and limitations of nursery coverage.

The Contractor recommends RMA require the incorporation of knowledgeable nurserymen into the loss adjustment process. Again and again the Contractor heard about loss adjustment of Nursery Program claims performed by adjusters who growers believed had limited or no knowledge of the nursery industry (several adjusters were quoted as saying they had no experience with nursery crops, worked only with field crops and livestock, or didn't understand what the insured was saying about a damaged plant). One solution to this issue would be to pair each adjuster (familiar with crop insurance constructs and provided appropriate training concerning the Nursery Program) with a knowledgeable nurseryman (familiar with the nursery industry). Obviously, these additional personnel would increase the cost of loss adjustment. Nursery production is unique in that the product in many cases is aesthetic. Where a grain or fruit crop might have substantial residual value following a loss, an individual nursery plant is more often either unaffected or a total loss, and only occasionally is damaged and amenable to economically appropriate rehabilitation. Many of the specific complaints the Contractor heard concerning loss adjustment reflected misunderstandings arising from adjusters placing plants into a category (usually damaged and amenable to rehabilitation) that the insured considered to be unreasonable. If RMA chooses to implement this recommendation, the agency could work with the American Nursery and Landscape Association or with regional organizations to identify a cohort of nurserymen prepared to assist adjusters in the event of a loss event. Obviously, such assistance would need to come from disinterested third parties. However, considering the size of the nursery sector of the U.S. agricultural economy, an appropriate pool of such individuals should be available.

A common, and related, complaint concerning loss adjustment was the basis for establishing the residual value in damaged plants. Many damaged plants have lost all value from the perspective

of the nursery business, but in adjustment of losses have been judged to have substantial residual value. The Contractor recommends that any indemnified plant be considered destroyed. In other words, the decisions about loss for any plant would be binary (destroyed or not destroyed). Indemnity payments would be made when the indemnified plants are physically destroyed by the producer. If the grower believed the damaged plants did in fact have residual value, the producer could be given the option of purchasing individual damaged plants rather than destroying those plants. A minimum value (such as one-third of the insured value) could be established as a threshold for establishing a viable buy-back offer. The adjuster/nurseryman team would have the option of refusing the offer. This would align the incentives for pricing the damaged plants to accurately reflect the residual value. For container-grown plants, the residual value could be recovered by auction or by offer. The former would likely increase the costs of recovery, but also result in a higher price for the salvaged plants. The latter would mirror the field-grown processes for establishing residual value.

The Contractor recommends AIPs or RMA develop an MS Excel or online tool to allow potential insureds to mine information concerning coverage and indemnities under various hypothetical scenarios. In four of the listening sessions producers spoke of being surprised at how little insurance protection they had. In one case the loss exceeded \$4,000,000 and the indemnity check was for less than \$10,000. The surprise came following an insurable event, during loss adjustment. The Contractor is proposing a relatively simple loss-and-indemnity modeling tool that would allow potential insureds to understand better the impact of decisions about coverage levels and particularly about purchase of endorsements. Producers of nursery plants are not generally familiar with crop insurance constructs and structures. Consequently, they depend more than most producers on the expertise of agents to understand what they are buying. Only a limited number of agents understand the nursery industry or the nursery policy; agents generally are ill-equipped to educate producers about the potential consequences of a producer's decisions about coverage levels and endorsements in the specific context of the producer's operation and business structure. A simple tool could be developed to help producers understand the limits of coverage under a CAT policy and the costs and benefits of the various endorsements. Such a tool would not precisely quantify indemnities. However, it could provide illustrations of ranges of indemnities under different scenarios. This information would serve both to eliminate some of the surprises concerning the protection actually provided in the event of a loss and as a marketing tool for the Nursery Program. The cost of such efforts could be controlled if RMA personnel with a working understanding of the Nursery Program developed substantial elements, or regional versions of the tool.

Abandoned Acreage

Following a loss, specific issues arise for producers of field-grown nursery plants because of the requirement that all production for a practice be insured. In a field that has suffered substantial damage, where a small number of mature plants are being rehabilitated, the production may be so sparse as not to justify full management of the field. Producers may be waiting to see what develops and to understand better their options with the few salvageable plants remaining in the field. Instead of focusing on salvage activity in these severely damaged fields, producers are addressing their limited resources to reestablishing the nursery inventory. Both producers and knowledgeable agents indicated including the remaining plants in a damaged field as insurable production makes no sense from the perspective of managing a nursery business. To address this

observation, the Contractor recommends producers be allowed to declare fields containing fewer plants than the number present under the typical planting density multiplied by some fraction, (such as 0.20) as uninsurable. This change would allow a producer to address resources to new acreage, and direct the insurance to productive acreage.

In summary, the Nursery Program should be continued for the near-term with substantial modifications as described previously. The insurance documents for this program need to be carefully revised to limit conflicts and to assure the policy components provide a clear contract understood by both the insured and the insurer. The loss adjustment process needs to be modified to assure it is fair and appropriate. Even for the near-term, the Contractor recommends the addition of Grafted Production as a practice and a continuous enrollment to address concerns about the SCD. While concerns about the offer of CAT coverage raises some important issues, the correct recommendation concerning CAT may be masked by the inappropriate rebating of commissions that is occurring in some areas. For the near term, the Contractor does not recommend eliminating CAT coverage. However, the Contractor does recommend that issue be revisited if the current Nursery Program is not replaced by one or more substantially different risk management products, such as those discussed in Deliverable 1b.

Deliverable 2b: Final Nursery Program Recommended Improvements Report

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Table 1. Number of Nursery Program Policies Earning Premium and Units Insured:
1999 to 2011 6

SECTION I. EXECUTIVE SUMMARY

This report presents the Contractor's considerations regarding recommended improvements to the Nursery Crop Insurance Program (Nursery Program). The report was produced under contract for the United States Department of Agriculture's (USDA) Risk Management Agency (RMA). With regard to potential alternative insurance designs for the Nursery Program, the Government requested the Contractor both explore alternative crop insurance models that conform to existing crop insurance constructs and think outside the conventional crop insurance box.

There was a substantial body of work considered in developing this report. In the first place, the Crop Insurance Act (U.S. Code Title 7, Chapter 36, Subchapter I, Section 1508 as amended, hereinafter the Act) is the controlling legislative language for the Federal Crop Insurance Corporation (FCIC) insurance administered by RMA. A nursery insurance program that does not conform to the language of the Act would require legislative action before it could be implemented. The Act is the first side of the box in which the current Nursery Program was crafted. The Contractor also considered RMA regulations and procedures. The RMA regulations constitute a second side of the box in which the current program was crafted. A nursery insurance program that does not conform to RMA regulations would require creation of appropriate new regulations before it could be implemented. The RMA procedures constitute a third side of the box. A nursery insurance program that does not conform to RMA procedures would require changes in institutional processes and perhaps in institutional culture before it could be implemented. Finally, the Contractor considered RMA's published criteria for feasibility for the development of crop insurance. These constitute the fourth side of the box. To some extent, these factors reflect constraints imposed by the Act and by RMA's procedures and regulation. The factors also reflect realities about providing federally subsidized insurance to agricultural producers.

The Contractor considered the possibility of insuring nursery crops under Actual Production History (APH), Actual Revenue History (ARH), Dollar, Group Risk (GRP), Group Risk Income Protection (GRIP), Revenue Protection (RP) and Revenue Protection with Harvest Price Exclusion (RP-HPE).¹ Of the insurance plans that currently exist, the Contractor believes only ARH could be modified to make it amenable to insuring nurseries. It appears possible to define a measure of liability for nursery operations based on historical records of the same type used to establish historical revenue for other crops (e.g., cherries). However, it is important to note, there is no third party involvement in establishing those records for nursery crops. There would be numerous issues to resolve before ARH could become the basis of a new nursery program, not the least of which would be providing appropriate underwriting structure in an industry characterized by an incredibly wide range of business models (e.g., producing annuals from seeds, having a running inventory of trees in a wide range of ages and species, producing grafted fruit trees for planting into commercial orchards and groves, and other business structures).

The nature of "out of the box" thought is less constrained by existing procedures and regulations than by logic. However, among the criteria of feasibility constraints there are a number that define logical limits on insurance plan development. These include having a mechanism to rate

¹ Certain crop insurance models, such as rainfall index and livestock, were not considered to be applicable to risk management for nursery crops under any circumstances and are therefore not addressed in this report.

the insurance, providing reasonable and appropriate underwriting, and having a market for the product if it is developed. The Contractor introduces several novel plan approaches for nursery and describes benefits and issues with each. The issues are not necessarily insurmountable barriers. Instead, some of these issues represent nothing more than topics that require research beyond the scope of the current contract. The specific ideas advanced herein are in the nature of a “brainstorming” session wherein no ideas are rejected *a priori* under the expectation that one idea, however infeasible, may lead to another idea that does have feasibility.

The Contractor was not able to identify a magic bullet whose implementation would fix the current Nursery Program so participation would reflect broader acceptance of the insurance and greater participation at additional coverage levels in lieu of CAT. With the possible exception of ARH and possibly AGR, the Contractor was not able to identify an effective alternative crop insurance program for nursery based on existing plans of insurance. Even out-of-the-box constructs for insuring nursery will require price data that reliably reflect the values of plants insured. The variation between and among plants and nursery operations does not permit a simple insurance design based on a single price or even a limited number of prices. Of the alternatives considered by the Contractor, only the alternative of basing insurance prices on actual producer average sales values during a defined time period seems to have any potential for eliminating the PPS as a component of the program.

SECTION II. INTRODUCTION

This report discusses a range of alternatives for modifying the Nursery Program and provides considerations with regard to the feasibility of implementing the alternatives and the effect such implementation would have on the requirement for a PPS. The Contractor notes that the charge given by RMA was not to develop an alternative approach that *a priori* would be 100 percent feasible. Instead, the charge was to develop ideas that could be subject to further analytical work which might potentially allow the development of a viable alternative design for nursery crop insurance.

Nursery is a very complex subject for the crop insurance program. As stated in the Nursery Loss Adjustment Standards Guide (section 7G(1)), “Market value establishment of nursery plants differ [sic] from other crops because market reports that are available for most other insured crops are not available for nursery.” The PPS permits a value per insured object, in the manner of most insured crops, to be established before insurance attaches. Presently, that value is the lesser of the discounted wholesale price in the nursery’s “catalog or price list”² or the price in the PPS.

Lack of independent reports of prices when a loss occurs is an impediment to obtaining valid values to establish Field Market Value (FMV) A and FMV B. The challenge of developing valid values to establish FMV A and FMV B led to disputes and litigation prior to adoption of the PPS. Adoption of the PPS has not sufficiently resolved issues of fairness concerning the value of the crops in the minds of many nursery growers. Thus, resolving the issues created by the PPS involves either: a) finding a valid replacement that allows appropriate determinations of FMV A and FMV B consistent with pricing of individual nurseries, or b) devising an insurance model that eliminates the need for FMV A and FMV B. There is, of course, a third alternative: discontinuing the nursery program. This is a business decision that must be made by RMA. The Contractor notes this alternative exists under all scenarios and consequently will not develop any discussion regarding it. All discussion will be focused on the first two alternatives.

There are three important values established in the administration of the current nursery program: the basic unit value, FMV A, and FMV B. An original or revised Plant Inventory Value Report (PIVR), which is analogous to an acreage report, or an amendment in the form of a Peak Inventory Value Report, establishes the 100 percent value of the insured assets (inventory). This is the basic unit value. These determinations are made by the insured person via schedules that aggregate the numbers of each plant, the sizes of each plant, and the prices of each plant/size combination in accordance with defined rules. The PIVR contains the total value of each basic unit as derived from these schedules. The AIP may perform an inspection to verify the counts and the assignments of value.

Since the value of the inventory changes during the course of the insurance year (in many cases these changes are dramatic), the crop provisions require that FMV A, the actual value of the inventory that existed immediately prior to a loss event, be determined. This determination is made by the loss adjuster by counting the number of each plant, cataloging the sizes of each

² The nursery program uses a cumbersome phrase “catalog or price list” repeatedly throughout the program documents. Hereafter, this report uses the term “catalog” to mean any document containing nursery plant prices maintained by a nursery.

plant, and by assigning a price in accordance with the same rules that applied for determining the basic unit value.

FMV B also is determined by the loss adjuster by assessing the percentage of damage to each plant using a sample of the plants in the inventory and by calculating a reduced value for the damaged plants by making an appropriate reduction to the value assigned in accordance with rules used to establish the basic unit value and FMV A. This is the system that would be replaced if an alternative insurance design were possible and implemented.

The Contractor will first consider alternatives to the existing design based on plans of insurance RMA currently administers. The Contractor will then consider alternatives to the existing design based on new plans of insurance.

SECTION III. ALTERNATIVES TO THE CURRENT NURSERY CROP INSURANCE PROGRAM BASED ON EXISTING CROP INSURANCE CONSTRUCTS

RMA administers many different insurance plans that provide different types of insurance coverage to specific commodities. In the following, the Contractor provides a summary of RMA's description of these insurance plans³ and provides an assessment of the potential applicability of each to nursery.

Actual Production History (APH)

RMA Description: APH policies insure producers against yield⁴ losses due to natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease. The producer selects the amount of average yield to insure. The producer also selects the percent of the predicted price to insure. If the harvested plus any appraised production (per acre) is less than the yield insured, the producer is paid an indemnity based on the difference.

Contractor's Evaluation: The key words in this description are yield and predicted price. Yield is an amount established by dividing the total amount of a standardized measure of physical production by a standardized measure of the area used to produce the crop. A standardized measure of land area, such as square foot (or yard) is possible for nursery. Although some may argue there is no standard for the area used to produce a nursery crop, such a measure would be usable as long as an individual nursery continues to maintain consistent use of the land. A standardized measure of physical production, such as bushels or tons, most likely is not possible. The major flaw for application to nursery in the context being examined is need for a predicted price. This is the PPS, the very parameter that RMA seeks to replace. Hence, APH does not satisfy the goal sought by RMA.

Actual Revenue History (ARH)

RMA Description: The ARH plan of insurance has many parallels to the APH plan of insurance, with the primary difference being that instead of insuring historical yields, the plan insures historical revenues. It restates many of the APH yield procedures to reflect a revenue product.

Contractor's Evaluation: Conceptually, ARH is identical to APH except average dollar revenue per acre is substituted for average physical yield per acre. As noted in the discussion of APH, the standardized measure called acre could be replaced with a standardized measure called square foot (or yard). The measure used to determine the amount of insurance under an ARH plan for nursery could be an APH-like value equal to dollars of sales per square foot (yard), equal to sales of all plants divided by the number of square feet (yards). This would be the greatest level of aggregation. Possibly, sales could be disaggregated among plant types but the determination of the number of square feet (yards) devoted to production of specific plants within the total inventory may become more problematic. The Contractor notes the number of basic units (available by practice for CAT and by practice and type for policies with coverage at additional levels) within a typical nursery is relatively small (Table 1). Due to the constraints on

³ The Contractor has excerpted descriptions of the RMA plans from the USDA, RMA Website at <http://www.rma.usda.gov/policies/>. The RMA descriptions have been edited by deleting some information that is not germane to establishing liability or determining an indemnity. In some cases, descriptions are combined (e.g., AGR, AGR-Lite) since the plans are similar. Other plans, such as livestock, rainfall, and similar plans are excluded from this discussion *a priori* as inapplicable.

⁴ Underscores denote a word or words to which specific emphasis is given by the Contractor.

unit structure for insureds purchasing coverage at the CAT level, this number may not appropriately reflect the diversity of many nursery operations. Nonetheless, individual operations are much less diverse than is the industry as a whole.

Table 1. Number of Nursery Program Policies Earning Premium and Units Insured: 1999 to 2011

Crop Year	Policies Earning Premium	Units Insured
1999	2,266	2,282
2000	2,691	2,713
2001	2,870	2,910
2002	3,102	3,142
2003	3,193	3,235
2004	3,278	3,379
2005	3,410	3,499
2006	3,091	5,923
2007	3,175	7,052
2008	3,006	6,742
2009	2,170	5,111
2010	1,889	4,199
2011	1,540	3,634
Totals	35,681	53,821

Source: The Contractor's Underwriting Department after RMA data.

Under an ARH-type plan, a loss would exist whenever the sales during the crop year plus the appraised value of any inventory remaining after damage is less than the historical revenue. Determining the value of the inventory remaining after damage would be a major hurdle. One approach would be to determine the average percent of damage for a basic unit and reducing the amount of insurance by that percentage. A drawback to this approach would exist if there were a wide variation in plant values within a unit and damage were not uniform among price ranges. For example, if the most expensive plants (assume 50 percent of basic unit value but 25 percent of plants) suffered a total loss and the least expensive had no loss, the loss in physical terms is 25 percent ($1.00 \times 0.25 + 0.00 \times 0.75$). Hence, there is no indemnifiable loss even at the 75 percent coverage level, although 50 percent of the unit value has been lost ($1.00 \times 0.50 + 0.00 \times 0.50$). A solution for this issue must be found if the principles of ARH are to be applied to nursery. However, if precise pricing of individual plants and sizes is determined to be essential for accurate loss adjustment, this plan will be difficult to implement.

Another potential impediment to adopting an ARH-like plan for nursery arises because sales may not represent the total value of inventory that exists at any time. Inventory turnover may be greater or less than 1.0 times per year, in which case the value of the inventory at any point in time is less (greater) than annual sales. The key to resolving this issue is determining whether it is possible to measure the number of "turns" of inventory that occur in any particular nursery seeking crop insurance coverage.

In summary, development of an ARH-type plan for nursery that does not require plant prices may be possible, but would present major hurdles that must be overcome to achieve feasibility. A side effect of introducing an ARH program is that CAT coverage could not be offered under this plan since it would be a revenue program. There are both benefits and issues with having no CAT option. The incentives of producers, insurance agents, and the government regarding establishment of a liability level would be better aligned. However, participation might be limited by perceptions about the value of the coverage relative to the out-of-pocket cost to producers.

Adjusted Gross Revenue (AGR) and AGR-Lite

RMA Description: AGR and AGR-Lite policies insure revenue of the entire farm rather than an individual crop by guaranteeing a percentage of average gross farm revenue, including a small amount of livestock revenue. The policies use information from a producer's Schedule F tax forms and current year expected farm revenue to calculate policy revenue guarantee.

Contractor's Evaluation: These policies presently can be elected by nursery operators in some states, but there does not appear to be any demand. In listening sessions, some producers indicated they like the AGR approach but feel they are penalized in the establishment of a diversity score because their multiple species do not qualify as different crops.⁵ One agent indicated he acknowledged to nursery producers that AGR was available, but discouraged consideration of the product because it did not appropriately reflect the risks to producers of diverse nursery products.

Development of an AGR-type plan specifically for nursery would not require plant prices, but would present hurdles that must be overcome to achieve feasibility. The issue of diversity score would be particularly challenging considering the many different business models in the nursery industry. The existence of retail sales would need to be addressed. Many of the same issues that were identified in the discussion of ARH also apply to AGR since the Schedule F essentially represents total sales for a tax year, not inventory value at any point in time. A side effect of using an AGR program is that CAT coverage could not be offered under this plan since this would be a revenue program. As mentioned earlier, there are both benefits and issues with having no CAT option.

Dollar Plan

RMA Description: Dollar Plan policies provide protection against declining value due to damage that causes a yield shortfall. The amount of insurance is based on the cost of growing a crop in a specific area. A loss occurs when the annual crop value is less than the amount of insurance. The maximum dollar amount of insurance is stated on the actuarial document. The insured may select a percent of the maximum dollar amount equal to CAT or purchase additional coverage levels.

Contractor's Evaluation: Establishing the maximum amount of insurance per standardized unit of land area would be a formidable hurdle that must be overcome if the dollar plan design is to be applied to nursery. It is doubtful that a reliable source of data regarding production costs for

⁵ The Contractor reviewed several "Approved Commodity Code Lists" in the AGR-L Standards Handbook. In all cases, Nursery (FG&C) is listed as a single crop.

nursery can be found. Since the crop is not standardized, a single dollar value per unit of area would not be adequate, thereby making the task of establishing the dollar amount of insurance even more formidable. It is doubtful this design as currently implemented could be successfully applied to nursery.

Group Risk Plan (GRP)

RMA Description: GRP is designed as a risk management tool to insure against widespread loss of production of the insured crop in a county. GRP policies use a county yield index as the basis for determining a loss. When the estimated county yield for the insured crop, as determined by National Agriculture Statistics Service (NASS), falls below the trigger yield level chosen by the producer, an indemnity is paid. Payments are not based on an individual producer's crop yields.

Contractor's Evaluation: Yield is an essential component of GRP plans. As noted earlier, a concept of physical yield cannot be defined at the individual level for nursery, let alone the county or regional level. There are no NASS data. Hence, GRP does not appear to provide any potential for application to nursery.

Group Risk Income Protection (GRIP) and GRIP – Harvest Revenue Option

RMA Description: GRIP and GRIP – Harvest Revenue Option are designed as risk management tools to insure against widespread loss of revenue from the insured crop in a county. GRIP policies use a county revenue index as the basis for determining a loss by using the estimated county yield for the insured crop, as determined by NASS, multiplied by the harvest price. If the county revenue falls below the trigger revenue level chosen by the producer, an indemnity is paid. [Contractor's addition: the county revenue index is based on the same projected and harvest price used for revenue protection (see below).]

Contractor's Evaluation: These plans have two attributes that disqualify them as relevant for use in nursery, especially in terms of meeting RMA's goals for a new approach to nursery crop insurance. These attributes are the need for a measure of yield and the need for a projected price.

Revenue Protection (RP) and Revenue Protection with Harvest Price Exclusion (RP-HPE)

RMA Description: RP and RP-HPE policies insure producers against yield losses due to natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease, as well as revenue losses caused by a change in the harvest price from the projected price. The producer selects the amount of average yield he or she wishes to insure; from 50 to 75 percent (in some areas to 85 percent). If the harvested plus any appraised production multiplied by the harvest price is less than the amount of insurance protection, the producer is paid an indemnity based on the difference. RP-HPE differs only in that the harvest price is not a factor in determining eligibility for an indemnity.

Contractor's Evaluation: Again, the plans require a measure of physical yield, which is not possible for nursery. The plan also requires a predicted price, the attribute RMA prefers to replace.

Yield Protection

RMA Description: Yield Protection policies insure producers in the same manner as APH policies, except a projected price is used to determine insurance coverage.

Contractor's Evaluation: The same observations as those made with regard to the APH plan also apply to Yield Protection since the plan is the same; only the nature of the projected price determination differs.

Summary

In summary, of the insurance plans that presently exist, the Contractor believes only ARH and an AGR-like product could potentially be developed to make them amenable to insuring nurseries. The Contractor makes this evaluation concerning ARH because it appears possible to define a measure of liability for nursery ARH based on historical records. The historical records of sales made by the nursery industry would be the same as the historical records used to establish historical revenue for other crops (such as cherries) with one exception: there is no third party involvement in establishing those records. There are numerous issues that must be resolved before ARH could become the basis of a revised nursery program. Among these issues are defining risk units to better homogenize the plant values within a unit (to facilitate loss adjustment); developing procedures for loss adjustment in the absence of an externally generated price schedule; accounting for expansion/contraction of nursery operations over time, especially with regard to validating the number of square feet utilized; variability in the composition of the inventory among years; adjusting the average dollar value of sales to a representative inventory valuation; and others.

The Contractor is hesitant to encourage development of an AGR-like product because of the limited participation in AGR in general and the lack of participation by nurseries in AGR where it is available to that industry. The issue of the inability to qualify for a meaningful diversity score most likely could be overcome with an appropriate classification of plants and production practices. However, there are numerous other issues that must be resolved before an AGR-like product could become the basis of a new nursery program. Among these issues: appropriately reflecting the limits to risk the diversity of nursery operations affords, accounting for expansion/contraction of nursery operations over time, especially with regard to validating the number of square feet utilized, and addressing the variability in the composition of the inventory among years, adjusting the average dollar value of sales to a representative inventory valuation, and others.

SECTION IV. NEW PLAN ALTERNATIVES TO THE CURRENT NURSERY CROP INSURANCE PROGRAM

The issues related to determining the value of individual plants and the value of an inventory are significant in the present Nursery Program. The program has evolved significantly over the years. RMA selected the PPS as the vehicle to determine values of individual plants beginning with the 1999 crop year. The PPS pricing is based on information collected under the Nursery Program and processed by DataScape, LLC. DataScape was identified as the only reliable source that followed a specific methodology to establish prices that are generally reflective of the market for plants. The key term herein is “generally.” It does not reflect the pricing practices of a particular nursery, a matter that has resulted in significant comments and discussions during the rule-making procedures under the Administrative Procedures Act. Since this is a major component of the Nursery Program that RMA seeks to streamline, the following discussion of the Nursery Program history will focus on the valuation of individual plants and inventory.

IV.A. Nursery Program History

The Contractor reviewed the regulatory history of the Nursery Crop Insurance Program to document the manner by which the issue of valuing plants and inventory has been managed over time. The oldest information available on the internet is the 1997 Code of Federal Regulations (CFR). This document contains 7 CFR Part 406, the Nursery Crop Insurance Provisions for 1989 and succeeding crop years. This insurance policy required the insured to file a nursery crop report consisting of “...all of your eligible nursery crops in the county by unit, type, container size, number of plants and wholesale price of plants for each month of the crop year” (section 3(a)). The wholesale price to be reported was the discounted price from the nursery’s catalog for each month during a crop year. The total value developed with this information was reduced by 10 percent to account for packing, shipping, sales commissions, and other expenses not insured.

In the event of a claim for indemnity, the procedure was much the same as that contained in the current Crop Provisions except FMV A was determined using the prices that “...would have been reasonably expected in the month which the loss occurred”⁶ (less 10 percent). Thus, the only difference from the current program is the definition of the applicable price.

7 CFR Part 406, as described above, remained in effect until modified by a final rule published in the 1995 Federal Register.⁷ This rule converted the Nursery Program from 7 CFR Part 406 to the Common Crop Insurance Policy (7 CFR 457.8). These Crop Provisions (96-056), effective for the 1996 crop year, also required the insured to develop a monthly inventory of plants valued with the insured’s wholesale catalog. The monthly inventory values continued to be based on the monthly wholesale price. In response to comments to the proposed rule, FCIC stated: “Due to numerous varieties of nursery plants eligible for insurance, FCIC believes that it is impractical to establish a price for each insured plant in the various states prior to the crop year. FCIC will determine whether the wholesale market price of the plant is reasonable before accepting it as the projected market price.”⁸ The Crop Provisions contained the following provision to implement this statement: “Your wholesale price list may be examined to determine whether the prices listed are reasonable. If the prices are determined to be unreasonable, the previous acceptable

wholesale price list will be used or we may establish the wholesale price for each type of plant.” This represented a change from the 1989 Crop Provisions, which did not contain a provision specifically allowing the AIP to challenge the catalog prices.

The program subsequently was revised for the 1999 crop year with publication of a final rule at 63 FR 50965 ff (September 24, 1998). This change introduced the PPS, an action deemed necessary because “FCIC determined that a fixed plant price schedule was essential to the continued offering of a nursery insurance program. A number of public oversight agencies found that FCIC was exposing the nursery program to potential abuse and litigation when it allowed individual nurseries to set their own prices.”⁹ The PPS has remained a feature of nursery crop insurance since that time. The provisions published at 63 FR did not specify the “lower of” the PPS or the insured’s wholesale catalog, but instead mandated the values in the PPS be used to set inventory values. Persons making comments to the proposed rule objected to this requirement. RMA summarized one comment as follows: “The commenter was also concerned that substandard producers will be rewarded with a program that provides them with a higher average value for their plants.”¹⁰ RMA’s response to this comment concluded that no change to the proposed rule was necessary, and the PPS was implemented as the sole vehicle to establish plant prices in the 1999 crop provisions.

FCIC subsequently published a proposed rule at 69 FR 48166 ff (August 9, 2004) in which the following statement occurs with regard to a proposed change in policy language: “Clarify that the price for each plant and size listed on the insured’s plant inventory value report is the lower of the Plant Price Schedule price or the lowest wholesale price listed in the insured’s nursery catalog or price list.”¹¹ This particular language did not appear in the 1999 Crop Provisions. It also did not appear in the Special Provisions. However, the 2000 LASH contained the following definition: “**Price:** For this handbook, the word “**Price**” is the lower of the price in the Nursery’s catalog minus all discounts (referred to as the growers’ best wholesale catalog price) or the maximum price shown in the Eligible Plant List and Plant Price Schedule.”¹² This same statement appeared in the Underwriting Guide.¹³ This was a change from the 1999 Underwriting Guide as identified in the Summary of Changes.¹⁴ Thus, procedure documents for crop year 2000 were used to modify regulatory language that was made effective for the 1999 crop year. This action may have been taken in response to the comments regarding substandard producers that FCIC had not accepted for the final rule published in 1998. This proposed rule was adopted at 70 FR 37222 ff (June 8, 2005). There were no comments and no discussion regarding this clarification that was effective for the 2006 crop year.

This regulatory history demonstrates that the Nursery Program has progressively become more demanding with respect to documentation of plant prices. Initially, the grower’s price catalog was acceptable without specific restrictions in the policy. Subsequently, the policy made the catalog conditional on approval. Then the PPS was introduced as the required price. This then

⁹ 63 FR 50967.

¹⁰ Ibid.

¹¹ 69 FR 48169.

¹² Nursery Loss Adjustment Standards Handbook 2000 and Succeeding Crop Years (FCIC-25750 (02-2000)), page 2.

¹³ 2000 Nursery Crop Insurance Underwriting Guide (FCIC-24050 (08-1999)), page 2.

¹⁴ Summary: 2000 Nursery Underwriting Guide – Summary of Changes, August 1999. Unnumbered document found at http://www.rma.usda.gov/handbooks/24000/2000/00_24090summary.pdf, accessed 10/11/2011.

was amended via procedure to introduce the lower of the lowest catalog price or the PPS. Hence, the regulatory history reflects an ever-increasing concern that inappropriate prices will be utilized to establish the value of the inventory if a control in the form of an independently established acceptable price is not in place. The implication of this history is that continuation of the Nursery Insurance Program *in its present form* requires the PPS or a similar document. This does not mean the information must be procured from a third party. In 70 FR, FCIC made the following statement: “The Plant Price Schedule base price tables are established using plant price data available to FCIC from grower catalogs and price lists.”¹⁵ And, in fact, the Crop Provisions require the insured to submit two copies of grower catalogs each crop year along with the PIVR. Since the data are available to RMA, it is conceivable that internal resources could be allocated to the task of developing a price schedule, thereby avoiding out-of-pocket direct cost. Of course, the direct and indirect costs of redirecting agency resources to this task may effectively offset the out-of-pocket savings. The Contractor does not have the specific information needed to evaluate the alternative.

IV.B. Additional Alternative Insurance Approaches

The Contractor herein presents seven alternative crop insurance approaches. Two introduce alternative ways to establish the crop value, but otherwise use the existing nursery crop insurance construct. The remaining approaches introduce substantially more radical changes. These alternatives are offered for considerations in light of the perceived complexity of the current Nursery Program relative to programs offered for other crops and industries.

Producer Historic Average Pricing (PHAP)

Description: An alternative to the PPS could be structured in the following manner: the insured must provide the data to calculate the average sales price by plant name and plant size for a period of time spanning 12 months ending perhaps 6 months prior to the beginning of the crop year. This alternative deliberately does not state the 12 months must correspond to a crop year since a certain amount of time would be required to compile the requisite information. If the calculations were to be on a crop year basis, a lag year would be needed since it would be impossible to compile a complete history of sales for a crop year after May 31 (last day of the crop year) to submit on May 1 (30 days prior to the end of the crop year) in accordance with the Crop Provisions. Sales receipts from actual wholesale sales of plants would provide evidence to support these analyses.

Contractor’s Evaluation: PHAP has the advantage that it utilizes the insured’s actual sales and thus should reflect the individual operation. It is not an average price for all nurseries in a region, a characteristic that addresses comments made during previous rulemaking activity. Prices for higher and lower quality nurseries are automatically recognized. The PHAP eliminates a burden on RMA and, for all practical purposes, is not a substantially greater burden on the insured than the existing requirement that the insured provide “...acceptable records of sales and purchases of plants for the three previous crop years in the amount of detail we require ...” (Crop Provisions section 6(b)(2)). This alternative requires the same information currently required with an extra step of determining prices to support the PIVR. A similar conceptual

¹⁵ 70 FR 37231.

approach has already been implemented by RMA in the ARH programs for several perishable crops.

PHAP has several disadvantages. The most obvious is that a nursery must have at least a one-year history of sales before it becomes eligible for insurance. Even if the nursery is eligible, plants that were not sold during the base period will be uninsurable since no price can be determined. This issue is no more problematic than the treatment of “Omitted Plants” as stated in the current Special Provisions. That treatment states any plant grown in the nursery that otherwise meets the requirements for insurability, but is not listed on the grower’s catalog is uninsurable for the current crop year. The same is true if the plant is listed in the catalog, but does not have a corresponding price.

A second disadvantage of PHAP is need for validation of the average prices calculated by the grower. While it might be construed to place a significant burden on the AIP, the present requirement that the insured provide a complete history of sales for three years imposes a similarly significant burden if the AIP is to effectively use this information. Validation is believed essential because the regulatory history demonstrates that a procedure to avoid excessive valuations of inventory and to appropriately establish the amount of losses is necessary. It is possible the existing nursery software could be modified to allow input of the revenues by plant name and size and number of plants sold. Perhaps this burden could be mitigated by requiring verification of the reported values only in the event of a loss claim.

A third apparent disadvantage is “dated” information. The prices by definition represent market conditions of some time in the past and may not reflect current values. However, the “lower of” rule presently in place also results in dated information and may effectively negate any price increases the insured may have included in the catalog. The PPS by definition is based on growers’ catalogs that were submitted in some prior year. Hence, the approach does not “date” the pricing information to a greater degree than the present system.

A fourth disadvantage is a need to develop rules similar to those in place for “added land.” There is potential the nursery could sell a limited number of certain plants in “sweetheart” deals to establish a higher-than-appropriate value. Then, in a subsequent insurance year, the number of plants could be increased significantly at the inflated valuation. But, since the number of plants sold in the base period is known (a datum that must be reported to determine the average sales price), a reasonable percentage increase in numbers of plants insured relative to the base period could be devised.

In summary, requiring the insured to submit information that allows determination of the actual average sale price in some base period utilizes many of the requirements already contained within the Crop Provisions. An analysis of the concept would be needed to determine if the requirements significantly impact respondent burden hours.

Declared Insured Valuation (DIV)

Description: Another alternative to the present program would allow the producer to establish an overall insured value without need to develop the complete inventory of plant names and sizes and associated prices (a declared value approach). A declared value approach would calculate an

indemnity as a percent of loss in the same manner as certain other crops (such as tree insurance). This imposes no change on current loss adjustment since the adjuster is required to determine a percent of damage to establish the reduced value of the plant. This alternative simply eliminates the need to assign a value to the damaged plant.

Contractor's Evaluation: There are significant problems with the DIV approach. RMA identified one problem in 70 FR, as follows: "While trying to optimize coverage, there were several problems that had to be resolved. The first is fluctuating plant inventories during the crop year. This means that at time of loss, the total plant inventory values in the unit could be radically different than the amount of insurance. While the policy allows for increases to the plant inventory values if requested in writing by May 31st, insurance does not attach until 30 days after the request was received, and it did not totally solve the problem of fluctuating plant inventories. To solve this problem, like the previous nursery policy, indemnities are not established based on the amount of insurance. Indemnities are established using the total of the plant inventory values of the insurable plants in the unit immediately prior to the loss and after the loss. This ensures that indemnities are based on the actual amount of loss suffered by the grower for the plants present at the time the insurable cause of loss occurs."¹⁶

The loss adjuster needs a supportable basis, such as values of the specific plants in the inventory, to make the determination of the value of the inventory immediately prior to the loss (FMV A). A way to avoid this dilemma would be to require the insured to document all changes to the inventory during the course of the crop year. There would be an incentive for an unscrupulous insured to overlook sales records so FMV A is maximized. Further, the insured may declare an excessive valuation at the beginning of the insurance period. In this case, the valuation still would be excessive even if the net sales were accurately reported. The loss adjuster has no basis to detect this situation if the only information available is the number of plants and a value declared by the insured.

In summary, the Contractor believes the regulatory history suggests this approach would re-create many of the problems and issues that caused several changes in the Nursery Insurance Program in the past 20-plus years. Balancing administrative burden and incentives for inappropriate behavior is one of the key challenges in offering a program as complex as a Nursery Insurance Program.

Area-based Dollar Valuation (ADV)

Description: In ADV, the producer proposes a dollar valuation based on the physical area (in square feet or acres) by type and practice. The PPS would be replaced with an underwriting tool that would be simpler and less precise than the current count and pricing inventory approach. Most likely, additional types would need to be added by splitting existing types (thus roses could be split into grafted roses and root-on plants or into groups like hybrid, climbing, and miniature, while herbaceous perennials might be split into chrysanthemums and all other). The insured would provide maps of the operation. The insurer would validate the mapping and declared type in each area. Assuming premium rates offer an accurate reflection of risk and that a producer cannot "create" losses, the only reason it is desirable to avoid prices that could exceed the value

¹⁶ 70 FR 37224

of the crop is to limit abuse of the subsidy. While the base liability would be established by multiplying the physical area under production by a factor reflecting the base valuation by type, an unsubsidized option for higher area-based valuations used on producer historic revenues might be developed to address producer concerns about the limits imposed by the base valuation approach. Since only the premium for the base valuation is subsidized, the subsidy is, in essence, provided for a generic risk management tool. While the insurance model is different for ADV than for GRP and GRIP, all three deal with data issues by providing a subsidized insurance product that is less ‘customized’ than many of the products in the RMA portfolio. However, since the premium for the optional increased liability is unsubsidized, the incentives for over-insuring are limited. This approach is a compromise to address the goal of eliminating the PPS, while limiting the risk of fraud, waste, and abuse.

In the event of a loss, the adjustment under ADV involves mapping rather than counting, with the map areas adjusted to reflect gaps in the “planting patterns” that resulted from management practices and sales rather than from the insured cause of loss. For container plants, the “lost” plants could be grouped for ease of determining the “area” lost. Such sorting is a logical element in the rehabilitation of a damaged nursery and consequently imposes no additional burden on the insured. In-field plantings would still require counting to establish losses, but sampling tied to mapping could simplify the counts and eliminate the FMV A count entirely.

Contractor’s Evaluation: ADV has the advantage that it eliminates much of the counting required to establish and adjust the nursery insurance. It addresses the issue of value less precisely than the current insurance, but eliminates many of the producer and AIP costs associated with sign-up. It risks providing a generic safety net for an industry that is anything but generic. The basis for establishing per-unit-area valuations by type would involve substantial research into regional practices. The Contractor observed that there is not a “standard” plant spacing within a type or between regions. The Contractor is not aware of data currently available that would assist in establishing the area-based valuations.

A Hybrid -- Itemized Inventory Plus Area Valuation (II/AV)

Description: In discussions with nursery growers and others knowledgeable about the industry, the Contractor learned that inventory maintenance practices varied widely in the industry. Most often, detailed information about high value plants was maintained. Information about these plants generally is at a level required by the Crop Provisions and the nursery software provided by RMA. Precise inventories of lower valued plants commonly were not maintained simply because the cost of maintaining such precise values may exceed the benefits of having that knowledge. This category would include such items as liners full of bedding plants, smaller plants in small containers, and similar situations.

This suggests a hybrid approach to determining the insurable value of inventory. The basic concept of II/AV is that plants whose value is in excess of some threshold of value must be reported in greater detail than those plants whose value is below the threshold. Plants below the threshold could be reported on the basis of some area valuation. For example, if the nursery contains 500 tables of liners, each table containing 150 sq. ft., each liner occupies 2 sq. ft. (75 liners per table), and each liner is valued at \$1, the value of that inventory is $75 \times \$1 \times 500 = \$37,500$. There would be no need to establish that 5,015 of those liners were species x, 2,045

were species y, etc. An analysis of the information in the PPS could discriminate categories of plants of similar value that could be included in a common grouping. This would simplify the reporting of inventory by focusing the detailed accounting on those plants most likely to give rise to disputes over value if that value is not established appropriately before insurance attaches.

Contractor's Evaluation: II/AV has the advantage that it eliminates much of the counting required to establish and adjust the nursery insurance. It addresses the issue of value less precisely than the current insurance, but eliminates many of the producer and AIP costs associated with sign-up, while still maintaining the inventory precision for higher value plants. The basis for establishing per-unit-area valuations would involve substantial research. As noted earlier, the Contractor observed that there is not a "standard" plant spacing within a type or between regions. The Contractor is not aware of data currently available that would assist in establishing the area-based valuations.

The Definitive Inventory Approach (DIA)

Description: Under DIA, RMA would replace DataScope with a new inventory tool. The DataScope tool is disliked by agents and nursery growers because it serves only one purpose (insurance), it is not compatible with other software, and it is perceived as unnecessarily cumbersome and difficult to use. Information technology has evolved enormously since the DataScope software was developed. It is feasible to develop a new inventory tool that provides all necessary inventory and accounting functions for a nursery business. It should be possible for the new tool to exchange information with standard spreadsheet programs, accounting programs, and industry standard programs (e.g., SBI, Winplant, and Plantex software). The software could be designed to track both the producer's average price (based on a weighted sales inventory) and industry average prices. An algorithm based on this live price data would replace the prices from the PPS. The software could support direct imports from common nursery software packages, alleviating the need for dedicated re-entry of the same data nurseries already captured for their own accounting purposes.

Contractor's Evaluation: DIA has the advantage in that it eliminates the counting required to establish the PIVR and FMV A. It could address the issue of value more precisely than the current insurance while eliminating many of the producer and AIP costs associated with sign-up. The approach turns an unpopular element of the current Nursery Program into a product that is useful to the insured and the insurance industry. The downside of this change is it would involve a considerable software development effort. While DataScope LLC would have the advantage of already managing the EPL and PPS, the Contractor assumes the content of those lists belongs to RMA and consequently could be supplied to any vendor if the contract for software development were awarded under competitive bidding. The DIA is not necessarily a stand-alone approach, but instead could be coordinated with other ideas. In particular, it should facilitate the capture of historical actual prices, obviating the need for the costly annual updating of PPS while simultaneously improving the accuracy of its values.

Monthly Dollar Valuation (MDV)

Description: In MDV, the producer proposes a dollar valuation per unit by month, type, and practice. The PPS would be replaced with an underwriting program to avoid egregious over-insurance. One requisite underwriting tool would be a set of maximum per-area values by type,

practice, and month. The current generic prices would be used to establish limits on valuation. As with the ADV, additional types would most likely need to be added. The insured would provide maps of their units and a summary of the valuation at the beginning of the month. The insurer would validate the mapping and type. An unsubsidized option for higher producer valuations based on producer historic revenues might be developed to address producer concerns about generic pricing. In the event of a loss, the adjustment involves mapping damage rather than counting, with the map areas adjusted to reflect gaps in the “planting patterns” that resulted from management practices and sales rather than from the insured cause of loss. The short insurance period(s), in effect allowing a separate policy to be in place each month, would help limit problems currently associated with inventory requirements and errors resulting from constantly changing inventories.

Contractor’s Evaluation: MDV is designed to address some of the producer concerns about variability in their inventory and limited risky periods. Essentially, it is the ADV prepared monthly. It addresses the issue of value less precisely than the current insurance, but eliminates many of the producer and AIP costs associated with signup. It risks providing a generic safety net for an industry that is anything but generic. Establishing underwriting to protect against fraud, waste, and abuse would involve a substantial development effort, as would the development of the monthly premium structure.

Endorsement Package Pricing (EPP)

Description: Several producers and agents indicated they welcomed the variety of insurance packages that could be developed using the existing base policy and endorsements available to those purchasing insurance at additional levels of coverage. EPP would introduce endorsements to allow a variety of different pricing approaches, each with its unique underwriting, cost, and perhaps subsidy structure (i.e., most likely subsidized or not subsidized). The base policy would be priced based on the area under production with a minimal valuation by practice (the need for this valuation is to recognize that field planted nurseries have a much lower planting density than containerized nurseries). The insured could then elect endorsements that adjusted value based on mapping and types, on mappings and species (with generic valuations by species updated once every four to five years), or on producer prices and inventories (the current option for those insuring with the Nursery Growers Price Endorsement, but without the need for annual updating of a PPS).

Contractor’s Evaluation: Homeowner’s policies are generally characterized by a limited base policy and page after page of endorsements. EPP is designed to reflect this familiar structure. The current Nursery Program already incorporates the option to buy numerous endorsements while EPP simply adds the pricing approach to the list of available options. It would be logical to have the base policy under EPP replace the CAT endorsement since the base policy price is likely to be below the value a producer would attach to his inventory. Elimination of the CAT endorsement changes incentives in the use of FCIC insurance in the producer’s risk management approach. The EPP approach consequently introduces a new concept for insuring what would be a catastrophic loss. It would allow the producer to choose to insure at a level that would simply help them start over, but without the tremendous administrative burden of the existing CAT coverage under the Nursery Program.

Nursery Gross Margin (NGM)

Description: Gross margin is the market value of nursery production minus the input costs. NGM, like Livestock Gross Margin coverage, provides protection to producers when input costs rise or nursery prices drop. NGM uses U.S. Census Bureau New Residential Construction data as the basis for determining the market value of the nursery production. NGM uses fuel, energy, and fertilizer costs to establish input costs. A premium subsidy is available for those policies that insure multiple months during the insurance period. The subsidy amount is determined by a dollar deductible selected by the policyholder. Policies with a lower deductible would have a lower subsidy level. NGM provides a mechanism to hedge some of the price risk associated with longer term nursery production.

Contractor's Evaluation: Only nursery producers with long-term investments in their inventories face the kind of risk that would be addressed by NGM. Consequently, NGM does not address the risks associated with catastrophic weather events. Furthermore, producers of annuals, liners, and most herbaceous perennials schedule their production activity and establish their contract price basis based on the expectation of "just-in-time" delivery. In many cases, the inputs (with the exception of labor) are locked in (and sometimes even delivered) before the production cycle begins. In contrast, the producers of woody nursery stock are in a quite different situation. In this industry segment two to ten years of inputs must be recouped in a sale. Without some mechanism to hedge against changes in the input cost structure, the producer's margin is at risk.

One of the challenges with using a margin approach for the nursery industry is that there are no indices or futures markets that directly address the production costs or market prices. A developer would need to first develop an appropriate indexing structure, then analyze historical volatility, then develop the NGM insurance. A producer and an insurance industry representative in the Pacific Northwest found this concept appealing. Their operations represented just the right segment of the nursery industry to have such an interest. As the product would not be generally applicable to nursery production, NGM would likely need to be part of a suite of products for the industry.

One-off Contracts (OC)

Description: Under OC, RMA would subsidize development of unique contracts for nursery producers. This approach recognizes that each nursery producer is distinctive. It acknowledges that the risks are unique to the nursery's specific business model and the species propagated by the nursery. The OC would use funds currently directed to premium and administrative and operating subsidies in the form of costs to prepare the PPS to support AIP overhead and administration costs to develop individual policies for each nursery. The premiums would not be subsidized. However, the nursery would have a customized product that should address the industry niche and risk tolerance of the producer.

Contractor's Evaluation: OC requires a complete change in the concepts surrounding federal subsidies for crop insurance. It would require changes in the Act, RMA rules, RMA processes, and the conceptual basis for the insurance, and might require new language in the Standard Reinsurance Agreement. The barriers to implementing the idea are enormous. While producers indicate the current insurance does not acknowledge their business model, it is unlikely many

would be eager to buy the insurance if the subsidy were directed to higher overhead and administrative costs and away from the risk premium.

Multiple Products Using the Existing Nursery Crop Insurance Approach

Description: A number of stakeholders suggested the basic concept of the nursery crop inventory insurance could be appropriate, but the limits on the unit structure introduce elements of complexity in their decision-making that are difficult to process. Insurance coverage is currently available by practice (fieldgrown or container) for all of the nursery plants an insured grows in a county that:

- Are on the Eligible Plant List;
- Are grown in a nursery that receives at least 50 percent of its gross income from the wholesale marketing of nursery plants;
- Meet all the requirements for insurability; and
- Are grown in an appropriate medium.

The insured can have separate basic units by type if the insurance is at the buy-up level, but that means the insured can choose different levels of buy-up for different types. The insured can not choose to insure some types within a practice at CAT and some at buy-up, and all nursery plants that are eligible for insurance need to be insured.

Under the producer proposed approach, each type/practice would be offered as a separate product. If the current type structure were kept, it would be possible for the insured to have 15 products (one for each type) for container grown and 12 for field grown. In contrast to the existing product, under the proposed approach a producer who has all 27 type/practice combinations could insure a few at CAT, a few at 50 percent buy-up, a few at 75 percent buy-up, and have no insurance on the remaining types/practices. Some of the producers making this suggestion were actually interested in further sub-division of the current type structure. For example, there was a suggestion that tea roses, miniature roses, climbing roses, floribunda roses, grandiflora roses, and tree roses should all be distinct types and a producer should be able to insure some of those types but carry all the risk themselves on others.

Contractor's Evaluation: Dividing a producer's inventory into multiple crops better reflects the biology of the nursery crops. It may or may not appropriately reflect the producer's business model. It provides the producer an opportunity to insure crops whose risks the producer feels are better shared and not to insure crops whose level of risks are tolerable to the producer. While this opportunity exists for most producers of typical field and row crops, data for distinguishing the risk by types and sub-types among the nursery crops is likely to be a barrier to using this approach.

It is important to note the Contractor believes the scope of such a change is enormous. In the extreme, hundred of new products would be required. At the minimum 27 new crop insurance products would be developed (albeit with a skeleton for the underwriting and loss adjustment). The RMA experience data, the best data for risk assessment, is unlikely to support rating for all these products unless judgmental rating is the principal (or perhaps the sole) approach to determining rates for the initial offer. The substantial use of CAT coverage by insureds under the current Nursery Crop Insurance program will mean a substantial portion of data concerning loss experiences that might have been indemnified under this new approach will not have been

documented under the current approach. The RMA database can be mined to determine if sufficient data by existing type would allow this insurance construct. Even if it is feasible, the risk for adverse selection under this approach is substantial. Insured liability might decrease substantially while indemnities might increase for particularly risky types.

Summary

The variation among plants and among nursery operations does not permit a simple insurance design based on a single price. Any design based on a limited number of prices will likely elicit complaints from the insureds unless an option to increase those prices is available. The Contractor has introduced a number of crop insurance approaches for nursery. None reliably reflect the values of plants contained in a producer's inventory without introducing some risk that the producer might be tempted to over-insure, meaning effective underwriting controls would be needed. Whether those controls would be more or less onerous than the existing program is not known. Further development of any of these ideas is possible. During those development efforts, it is likely some will be proven to be infeasible even with changes to the Act. A brief description of each concept is offered here as a starting point to assess the interest and will of the agency for potentially radical changes to nursery crop insurance; a full feasibility assessment of any of these options is beyond the scope of this deliverable.

SECTION V. RECOMMENDATIONS

Inasmuch as RMA indicated a desire to consider its options without being constrained to conventional crop insurance structures, the Contractor makes only limited recommendations concerning alternatives to the current Nursery Program. Of the existing plans of insurance, evaluation of the ARH approach seems the most likely to provide a product acceptable to the insureds. A second revenue approach, based on the existing AGR products but specifically tailored to nurseries, might also be evaluated as an alternative to the Nursery Program.

Among the less conventional products, in the proposed approaches there is a trend to address the issue of over-insurance by eliminating the incentive (the premium subsidy) for such a behavior. That requires a new way of thinking about RMA administered products. The Contractor will defer to RMA on the willingness of the agency to pursue such a radical approach to the issues affecting the Nursery Program. One of the challenges with Nursery Program is that it is intended to be all-inclusive. The Crop Provisions are attempting to address crops as different as mushrooms and Christmas trees. It may be useful to consider breaking the Nursery Program into separate products for annual bedding plants, woody trees and shrubs, herbaceous perennials, etc. Abandoning the concept of a single nursery product, and developing related but purpose-built programs could provide yet another way to re-imagine nursery crop insurance.

Further elaboration of concepts of particular interest to RMA can be pursued in the subsequent deliverables of this project, recognizing the limitations imposed on scope by the terms of the contract.

Appendix A

Program Evaluation Tool

Exhibit 1

New England, Midwestern, and Mid-Atlantic States

Program Evaluation Diagnostic Questions – Nursery Crop Insurance Program

Region New England, Midwestern, and Mid-Atlantic States

Typical Crops Nursery plants in various sizes, including annuals, biennials, herbaceous perennials, and woody species of a wide range of types.

Market fresh , processed , other marketed as container, bare root, and balled and burlap plants.

Background Information

Production Processes

Annuals

1. Are the crops planted multiple times during a crop production year? If yes, explain:
Yes , No

Some of the annual nursery plants are planted multiple times; others are planted just once a year.

2. For a single planting, are the crops harvested multiple times during a crop production year? If yes, explain: Yes , No

Some of the annual nursery plants are harvested multiple times for marketing at different sizes; others are harvested just once a year.

3. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as double crop, fallow, irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production.

Biennials

4. Are the crops harvested multiple times during a crop production year? Yes , No

Many of the biennial nursery plants are harvested multiple times; a few are harvested just once a year depending on the market.

5. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each biennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Most of the plants are sold in containers.

Perennials

6. Are the crops harvested multiple times during a crop production year? If yes, explain:
Yes , No

Some of the perennial nursery plants are harvested multiple times to address market requirements; others that are sensitive to planting times are harvested just once a year, still others are treated like annual plants (either (a) grown for a year and then marketed or (b) purchased as liners or container plants and repotted and grown for a year.

7. Are the crops alternate bearing? Yes , No

This question is not relevant for the Nursery Crop Insurance Program. The insured crop is the plant itself, not the fruit.

8. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each operation producing perennials is unique. The producers have developed niche markets for species, practice, and size. In general, plants in containers are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Plants are generally potted up if they are not sold. Eventually plants become too large for the market and they are destroyed.

Field grown plants are grown in single or double rows, with or without irrigation. Growth is supported by frequent fertilization, and pest management. Turnover in many cases is influenced as much by markets as by management practices. For balled and burlap plants, the root ball and associated soil is dug, wrapped, and tied off. Eventually if plants cannot be sold they become too large for the market and are destroyed. For bare root plants, the harvest must be done when the plants are dormant. This is most often early spring or late fall.

9. What is the economic life of the capital stock (trees, vines, etc.)?

3 weeks to 20 years depending on the plant, market niche, and production practices.

10. Over its economic life, what is the likelihood that ten percent or more of the capital stock would be lost due to natural causes? Describe:

<1% (*probability of loss*)

The capital stock is the crop; the intact nursery plants (and often the soil) are harvested for sale. The losses of capital stock may not involve loss of entire plants, but instead loss of portions of the plants to extreme weather. The effect of such partial losses in the short run is similar to the effect of losing whole plants, recovery is sometimes possible, depending on the nature of the damage.

11. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it starts producing saleable output?

1 month to never. Some plants (particularly heritage varieties) may be irreplaceable.

12. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it is at peak production?

1 to 10 years to never, depending on the market and production practices for the operation.

Nursery

13. Describe distinguishing characteristics of prevailing production system(s) for nursery crops in this region. Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Some nurseries in the region grow plants from seed, from cuttings, from liners of all sizes, and less often from meristem cloning. Other nurseries in the region buy plants produced by these three processes. Some of the nursery stock used by nurseries is locally produced; some comes great distances (including imported planting materials). Markets determine the type and practice for nursery materials used by the nurseries in the area, however most producers have developed a particular approach to maximize their share within the niche while minimizing costs.

Marketing

14. Describe typical marketing channels and/or contracting structures for these crops.

The marketing channels for nursery production vary by operation, by type, and variety. Many producers in the region produce limited varieties maintained under a single practice (although field grown stock may be sold both balled and burlapped and bare root). Depending on the market, production may be sold to a single buyer or multiple buyers. The buyers can be landscaping, retail, or re-wholesale operations. Some production is initiated under contract, some is speculative. Many of the producers, particularly smaller operations, see into retail as well as wholesale markets.

15. In this region are there critical time periods (i.e., marketing windows) when producers hope to market these crops? If so, describe.

Yes. The windows for sales of most of these nursery crops are very small. The precise period varies by type, variety, and market.

16. Within the marketing channels and/or contracting structures mentioned above describe how quality variations are handled (e.g., off-grade apples in a fresh market system may be processed for juice).

Generally off-grade production is not saleable. The costs of rehabilitation relative to the value of the crop generally preclude such actions. The discounts for sale of off-grade production often do not justify maintenance of the crop.

In this region, do federal supply control marketing orders exist for production of these crops?
Yes , No

Describe:

In this region, do state quality marketing orders exist for production of these crops?
Yes , No

Describe:

RMA-Facilitated Insurance Products

17. In this region, what RMA-facilitated insurance products are currently available for these crops? List all:

The Nursery Crop Insurance policy and the AGR policies are the RMA-facilitated insurance product currently available for these crops. AGR and/or AGR-Lite are not available in every state in this region.

The questions in this section (20 through 26) are not relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. There is no yield of nursery production. Consequently, this section has been left blank.

Yield Risk

18. In this region what are examples of crops with very **low relative** yield risk? Relative risk is used to adjust absolute magnitudes that vary across crops to a relative level to facilitate comparability (roughly, a measure of variation divided by the mean level).

19. In this region what are examples of crops with very **high relative** yield risk?

20. Are these crops exposed to catastrophic risks that would reduce yields by 50 percent or more? Yes , No

21. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic losses to occur?

Description

Years (or crop cycles) out of 25

22. Characterize yield risk for these crops *ignoring the catastrophic yield risk(s) described earlier*. On a scale from one to five, if the low relative yield risk crops identified earlier were one, and the high relative yield risk crops identified earlier were five, what number would you assign to the non-catastrophic yield risk associated with these crops in this region? Where 1 is very low risk and 5 is very high risk

23. In this region, do producers tend to experience multiple-year sequences of good yields or bad yields for these crops? If yes, describe what causes these multiple-year sequences.
Yes , No .

24. On a scale from one to five, where one is very low yield risk and five is very high yield risk, provide an overall assessment of yield risk faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk

The questions in this section (27 through 32) are only marginally relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. The nursery production has no quality in the sense a harvested crop has quality. Consequently, the questions in this section have been answered to reflect the effects on the “quality” of the inventory rather than any effects on quality of a harvestable product.

Quality Risk

25. In this region what are examples of crops with very **low** quality risk?

N/A

26. In this region what are examples of crops with very **high** quality risk?

N/A

27. Are the crops exposed to catastrophic quality risks that would reduce the ~~average price received~~ [marketability] by 20 percent or more? Yes , No

28. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic quality losses to occur?

The assessment is for a single operations production, which is a small portion of the crop in the region.

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>
Hail	2
Excessive Precipitation	1
Flood	0 to 5
Hurricane	0 to 1

29. We now want to characterize quality risk for these crops ignoring the catastrophic quality risk(s) described earlier. On a scale from one to five, if the crops with very low risk of quality problems identified earlier were one, and the crops with very high risk of quality problems identified earlier were five, what number would you assign to the quality risk associated with these crops in this region? Where 1 is very low quality risk and 5 is very high quality risk.

This question is not relevant to nursery crop insurance.

30. On a scale from one to five, if one is very low ~~quality~~ [marketability] risk and five is very high risk, provide an overall assessment of ~~quality~~ [marketability] risk faced by producers of these crops in this region.

1

The questions in this section (33 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period.

Price Risk

31. In this region what are examples of crops with very **low relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

32. In this region what are examples of crops with very **high relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

33. On a scale from one to five, if the low price risk crops identified earlier were one and the high price risk crops identified earlier were five, what number would you assign to the relative price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is low price risk crop and 5 is high price risk crop.

N/A

34. In this region, do producers tend to experience multiple-year sequences of high prices or low prices for these crops? Yes , No . If yes, describe.

N/A

35. On a scale from one to five, where one is very low price risk and five is very high price risk [of loss of value], provide an overall assessment of price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is very low price risk and 5 is very high price risk.

N/A

The questions in this section (36 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period. Consequently, this section has been left blank.

Other Sources of Revenue Risk

36. For this region, describe other factors that affect revenue risk for these crops (e.g., prevented planting).

37. On a scale from one to five, where one is very low risk and five is very high risk, provide an overall assessment of risk sources other than yield, quality, and price risks faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

Sufficient Non-Insurance Coping Mechanisms

38. On a scale from one to five, where one is very low and five is very high, assess the extent to which producers of these crops in this region use risk-reducing inputs as a substitute for crop insurance. Where 1 is very low and 5 is very high.

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39. Are government crop programs (e.g., marketing loans and counter-cyclical payments) available for these crops? Yes , No

Describe:

Only some of the questions in this section (40 through 53) are relevant to the Nursery Crop Insurance Program. The relevant questions have been answered.

40. In this region, is there a history of federal disaster payments for these crops? Yes , No

Describe: The 2008 farm bill authorized the Tree Assistance Program (TAP). TAP provides payments to eligible nursery tree producers to cover 70% of the cost of replanting trees or nursery stock following a natural disaster. Only some nursery production was covered under this program and a \$100,000 limit per year per producer applied to payments under TAP. The program expired in September of 2011. The Contractor did not identify payments made under this program in this region.

41. Approximately what percentage of the total production of these crops is under production contract with a first handler or processor?

Describe contracts: No testimony concerning this was available.

- a. Under the terms of a typical production contract for these crops, is the grower exposed to *production risk* (i.e., the grower must deliver on the contract even if production shortfalls occur)? Yes , No
- b. Under the terms of a typical production contract for these crops, is the grower exposed to quality risk (i.e., there are significant price penalties if the product does not meet the quality characteristics specified in the contract). Yes , No

Delivery may be refused based on quality.

- c. Under the terms of a typical production contract for these crops, is the grower exposed to price risk (i.e., prices for specific quality characteristics are not specified in the contract)? Yes , No

42. In this region, approximately what percentage of the total production of these crops is priced prior to harvest (may or may not be tied to a production contract)?

Describe: For insurance purposes: 100%. For contract sales: 100%. For speculative sales: 100%. Harvest doesn't occur until a price agreement has been reached.

43. When corn farmers in the Midwest experience low (high) yields, they can often expect higher (lower) market prices (i.e., prices and yields are very negatively correlated). This moderates the revenue impacts of low yields. In contrast, for corn farmers in the Southeast there is very little relationship between their yields and market prices (i.e., prices and yields are independent). In this region the price and yield for these crops are: *Independent, Somewhat Negatively Correlated, or Highly Negatively Correlated?*

Independent

Describe: Prices are influenced by markets, relationships between the buyer and seller, varietal differences, quality judgments by the buyer, etc. more than by supply.

44. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement: “In this region, producers of these crops are financially able to self-insure against production losses.” Where 1 is strongly agree and 5 is strongly disagree.

Between 4 and 5

Describe: In this region, producers are a highly variable group, both in their financial sophistication and in their fiscal resources. From discussions with producers, it appears that those at the extremes in both these categories are more prepared to self-insure (i.e., the least wealthy and wealthiest producers are less risk-averse and prepared to deal with the consequences of a significant loss of stock). In the case of the least wealthy producers, coping or seeking alternative revenue sources was the most commonly identified strategy, while the wealthiest producers have the resources to self-insure as a straight forward financial strategy.

45. For a typical grower of these crops, approximately what percentage of the total farm revenue would be attributable to these crops?

80-100 % (i.e., many of the producers of nursery crops grow only nursery crops).

46. What other commodities would typically* be produced on a farm that produces these commodities? What is the correlation between revenue from these other commodities and the revenue from these commodities? For correlation use a scale of one to five, where 1 is “strongly negatively correlated,” 2 is “negatively correlated,” 3 “independent,” 4 is “positively correlated,” and 5 is “strongly positively correlated.”

*Typically is an inappropriate concept for production of nursery crops in this region by this cohort of producers.

N/A

47. In this region, approximately what percentage of the total production of these crops is produced by part-time farmers who have full-time employment off the farm?

Based on testimony, 25 to 50%.

48. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement: “In this region, producers of these crops attempt to manage production risk by spreading their production over several geographic locations.”

No testimony concerning this was available.

Describe: N/A.

49. In this region, what private-sector insurance products (if any) are currently available for these crops?

List all: It is possible to insure some of the perennial crop stock against fire through private contract, although such insurance is neither a standard product nor generally marketed.

Private named peril insurance for trees (<http://www.liveassetinsurance.com/index.htm>) is available but the Contractor found no evidence it is used by producers.

50. Characterize how agricultural lenders in this region view the available RMA-facilitated insurance products for these crops (using Unfavorable, Indifferent, or Favorable). “Unfavorable” implies that lenders actually discourage borrowers from purchasing the product while “favorable” implies that lenders strongly encourage and often require borrowers to purchase the product. If multiple insurance products are offered, answer for each product.

Describe: The insurance is viewed favorably by lenders.

Loan underwriting is enormously influenced by individual credit history, which is highly variable because of the diverse characteristics of the operations that produce nursery crops.

51. On a scale from one to five, where one is very high and five is very low, assess the sufficiency of non-insurance coping mechanisms for producers of these crops in this region. Where 1 is highly sufficient and 5 is highly insufficient.

2 to 3

Risk Classification

52. On a scale from one to five, where one is strongly disagree and five is strongly agree, provide your reaction to the following statement: “In this region, no producers of these crops are really any more or less risky than any others. They all face about the same risk of loss.” Where 1 is strongly disagree and 5 is strongly agree

2

Describe: Weather in the region is variable. Some producers have greater variety of types and of varieties within types, increasing their potential for losses resulting from weather perils, but decreasing the effects of these losses on the financial condition of the operation. Maintenance practices can influence the ability of the nursery crops to tolerate perils.

53. In this region, for those who are currently not insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

54. In this region, for those who currently are insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

55. For this region, to what extent does the system used to establish the guarantee (~~e.g., APH yield or expected revenue~~) for this crop match the true value of the production at risk? An answer of one indicates that the system used to establish the guarantee does a very poor job of matching the true value of the production at risk. An answer of five indicates that the system used to establish the guarantee does a very good job of matching the true value of the production at risk.

Producers report the value of their production is generally underestimated by the inventory system. This is particularly true for new varieties.

56. On a scale from one to five, where one is very low and five is very high, assess the effectiveness of existing RMA-facilitated insurance products in accurately classifying potential policyholders according to their loss exposure (i.e., higher risk growers pay higher premiums while lower risk growers pay lower premiums). Where 1 is very low and 5 is very high.

2, the producers have very different levels of sophistication in their operations. The premiums do not reflect these differences.

Moral Hazard and Monitoring

57. ~~Yield variation~~ [Inventory loss] can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated crop insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product.

4

58. To the extent that management affects ~~yield~~ loss risk exposure, how difficult is it to monitor the insured’s behavior?

Difficult

Explain: Since the indemnities are triggered by weather events, the losses that are purely tied to management practices are generally obvious. However, a weak nursery plant is less likely to survive a weather peril. Consequently, these multifactorial losses are more difficult to adjust.

59. Quality variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product. Where 1 is very low and 5 is very high

N/A. Quality standards do not apply to nursery inventory in the same way they do to a yield-based crop insurance.

60. To the extent that management affects quality loss risk exposure, how difficult is it to monitor the insured’s behavior?

N/A, Quality standards do not apply to nursery inventory in the sense they do to yield-based crop insurance.

61. On a scale from one to five, where one is very large and five is very small, assess the extent of moral hazard problems with existing RMA-facilitated insurance products for this crop.

3

Problems Affecting Insurance Participation

62. Have significant problems occurred (either past or current) with policy provisions on [the] existing RMA-facilitated insurance products for the crop? If multiple insurance products are offered, answer for each product. Yes , No

63. If the answer to the previous question is no, go to next question. If yes, for each significant problem:

- a. Briefly describe the problem.

This is an extremely complex insurance product. There is no question the complexity has led insureds to believe they had coverage they did not have. There is also evidence the loss adjustment process has not been perceived as fair to the insureds.

- b. What has been the impact of the problem (e.g., high loss ratios, reduced demand, etc.)?

Reduced demand.

- c. Have policy provisions since been changed to adequately address the problem?

While the provisions have been changed several times, the issues have not been resolved to the satisfaction of producers.

- d. If policy provisions have not been changed, what changes in policy provisions do you think would increase insurance demand for this crop?

Everyone who expressed an opinion would like to see the policy simplified.

- 64. In this region, do reinsured companies have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

The administrative costs of the insurance are very high. The premiums are modest. The reinsured companies in many cases would be happy to not write a nursery policy.

- 65. In this region, do agents have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

- 66. List any perils that concern growers of these crops but are not covered by existing RMA-facilitated insurance products (e.g., business interruption due to unavailability of irrigation water, disease quarantines, etc.). For each peril assess the extent of growers' concerns about this peril on a scale from one to five where one is minor concern and five is major concern.

Improper requirement for rehabilitation: 5
Requirement to insure rehabilitating stock: 4
Varietal changes: 4

- 67. Briefly describe the potential for insuring these currently uninsured perils? In answering this, consider the following questions:

Can hidden action/moral hazard and classification/adverse selection problems be avoided?

Can clearly stated policy provisions be developed and accurate premium rates established?

These are not insurable perils.

- 68. On a scale from one to five, where one is very high and five is very low, assess the likelihood that problems affecting participation can be adequately addressed by product or policy modifications.

This program could be made attractive to many producers resulting in increased participation, especially at buy-up levels. Producers want insurance. They are just unhappy with the current product.

Exhibit 2

Southeastern States

Program Evaluation Diagnostic Questions – Nursery Crop Insurance Program

Region Southeast

Typical Crops Nursery plants in various sizes, including annuals, biennials, herbaceous perennials, and woody species of a wide range of types.

Market fresh , processed , other marketed as container, bare root, and balled and burlap plants.

Background Information

Production Processes

Annuals

1. Are the crops planted multiple times during a crop production year? If yes, explain:
Yes , No

Some of the annual nursery plants are planted multiple times; others are planted just once a year.

2. For a single planting, are the crops harvested multiple times during a crop production year? If yes, explain: Yes , No

Some of the annual nursery plants are harvested multiple times; others are harvested just once a year.

3. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as double crop, fallow, irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production.

Biennials

4. Are the crops harvested multiple times during a crop production year? Yes , No

Some of the biennial nursery plants are harvested for some markets multiple times; others are harvested just once a year.

5. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each biennial operation is unique. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production.

Perennials

6. Are the crops harvested multiple times during a crop production year? If yes, explain:
Yes , No

Many of the perennial nursery plants are harvested multiple times; a few are harvested just once a year. Some are treated like annual plants, either (a) grown for a year and then marketed or (b) purchased as liners or container plants and repotted and grown for a year.

7. Are the crops alternate bearing? Yes , No

This question is not relevant for the Nursery Crop Insurance Program. The insured crop is the plant itself, not the fruit.

8. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each perennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Plants are generally potted up if they are not sold. Eventually plants become too large for the market and they are destroyed.

Field grown plants are less common in the area. They are grown in single or double rows, generally with supplemental irrigation. Growth is supported by frequent fertilization, and pest management. Turnover in many cases is influenced as much by markets as by management practices. The field-grown plants from this area are generally balled and burlapped, the root ball and associated soil is dug, wrapped, and tied off. Eventually if plants cannot be sold they become too large for the market and are destroyed.

9. What is the economic life of the capital stock (trees, vines, etc.)?

3 to 6 weeks to 20 years, depending on the variety, type, and practices. Most are sold within 3 to 5 years. Palms are maintained even longer.

10. Over its economic life, what is the likelihood that ten percent or more of the capital stock would be lost due to natural causes? Describe:

<1% (*probability of loss*).

The capital stock is the crop. The losses of capital stock may not involve loss of entire plants, but instead loss of portions of the plants to extreme weather. The effect of such partial losses in the short run is similar to the effect of losing whole plants, recovery is sometimes possible, depending on the nature of the damage.

11. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it starts producing saleable output?

3 months to never.

12. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it is at peak production?

1 to 10 years to never, depending on the varieties lost.

Nursery

13. Describe distinguishing characteristics of prevailing production system(s) for nursery crops in this region. Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Nurseries in the region grow plants from seed, from cuttings, and from meristem cloning. Nurseries in the region also buy plants produced by these three processes. Some of the nursery stock used by nurseries is locally produced; some comes from as far away as China. Markets determine the type and practice, however most producers have garnered a particular market niche and work to maximize their share within the niche.

Marketing

14. Describe typical marketing channels and/or contracting structures for these crops.

The marketing channels for nursery production vary by operation, and by variety. Many producers in the region produce limited types maintained under one practice. Depending on the market, production may be sold to a single buyer or multiple buyers. Some production is initiated under contract. Less is speculative.

15. In this region are there critical time periods (i.e., marketing windows) when producers hope to market these crops? If so, describe.

Yes. The windows for sales of most of these nursery crops are very small.

16. Within the marketing channels and/or contracting structures mentioned above describe how quality variations are handled (e.g., off-grade apples in a fresh market system may be processed for juice).

Generally off-grade production is not saleable. The costs of rehabilitation relative to the value of the crop generally preclude such actions.

In this region, do federal supply control marketing orders exist for production of these crops?
Yes , No

Describe:

In this region, do state quality marketing orders exist for production of these crops?
Yes , No

Describe:

RMA-Facilitated Insurance Products

17. In this region, what RMA-facilitated insurance products are currently available for these crops? List all:

The Nursery Crop Insurance policy and the AGR policies are the RMA-facilitated insurance product currently available for these crops.

The questions in this section (20 through 26) are not relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. There is no yield of nursery production. Consequently, this section has been left blank.

Yield Risk

18. In this region what are examples of crops with very **low relative** yield risk? Relative risk is used to adjust absolute magnitudes that vary across crops to a relative level to facilitate comparability (roughly, a measure of variation divided by the mean level).

19. In this region what are examples of crops with very **high relative** yield risk?

20. Are these crops exposed to catastrophic risks that would reduce yields by 50 percent or more? Yes , No

21. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic losses to occur?

Description

Years (or crop cycles) out of 25

22. Characterize yield risk for these crops *ignoring the catastrophic yield risk(s) described earlier*. On a scale from one to five, if the low relative yield risk crops identified earlier were one, and the high relative yield risk crops identified earlier were five, what number would you assign to the non-catastrophic yield risk associated with these crops in this region? Where 1 is very low risk and 5 is very high risk

23. In this region, do producers tend to experience multiple-year sequences of good yields or bad yields for these crops? If yes, describe what causes these multiple-year sequences.
Yes , No .

24. On a scale from one to five, where one is very low yield risk and five is very high yield risk, provide an overall assessment of yield risk faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk

The questions in this section (27 through 32) are only marginally relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. The nursery production has no quality in the sense a harvested crop has quality. Consequently, the questions in this section have been answered to reflect the effects on the “quality” of the inventory rather than any effects on quality of a harvestable product.

Quality Risk

25. In this region what are examples of crops with very **low** quality risk?

N/A

26. In this region what are examples of crops with very **high** quality risk?

N/A

27. Are the crops exposed to catastrophic quality risks that would reduce the ~~average price received~~ [marketability] by 20 percent or more? Yes , No

28. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic quality losses to occur?

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>
Hurricane	0 to 2
Flood	0 to 5

But generally affecting just a small portion of the crop in the region.

29. We now want to characterize quality risk for these crops ignoring the catastrophic quality risk(s) described earlier. On a scale from one to five, if the crops with very low risk of quality problems identified earlier were one, and the crops with very high risk of quality problems identified earlier were five, what number would you assign to the quality risk associated with these crops in this region? Where 1 is very low quality risk and 5 is very high quality risk.

This question is not relevant to nursery crop insurance

30. On a scale from one to five, if one is very low ~~quality~~ [marketability] risk and five is very high risk, provide an overall assessment of quality risk faced by producers of these crops in this region. Where 1 is very low ~~quality~~ survival risk and 5 is very high ~~quality~~ survival risk.

1

The questions in this section (33 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period.

Price Risk

31. In this region what are examples of crops with very **low relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

32. In this region what are examples of crops with very **high relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

33. On a scale from one to five, if the low price risk crops identified earlier were one and the high price risk crops identified earlier were five, what number would you assign to the relative price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is low price risk crop and 5 is high price risk crop.

N/A

34. In this region, do producers tend to experience multiple-year sequences of high prices or low prices for these crops? Yes , No . If yes, describe.

N/A

35. On a scale from one to five, where one is very low price risk and five is very high price risk [of loss of value], provide an overall assessment of price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is very low price risk and 5 is very high price risk.

N/A

The questions in this section (36 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period. Consequently, this section has been left blank.

Other Sources of Revenue Risk

- 36. For this region, describe other factors that affect revenue risk for these crops (e.g., prevented planting).
- 37. On a scale from one to five, where one is very low risk and five is very high risk, provide an overall assessment of risk sources other than yield, quality, and price risks faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

Sufficient Non-Insurance Coping Mechanisms

- 38. On a scale from one to five, where one is very low and five is very high, assess the extent to which producers of these crops in this region use risk-reducing inputs as a substitute for crop insurance. Where 1 is very low and 5 is very high.

4

- 39. Are government crop programs (e.g., marketing loans and counter-cyclical payments) available for these crops? Yes , No

Describe:

Only some of the questions in this section (40 through 53) are relevant to the Nursery Crop Insurance Program. The relevant questions have been answered.

- 40. In this region, is there a history of federal disaster payments for these crops? Yes , No

Describe: An agricultural disaster program designed to assist any Florida county that was declared a disaster area as a result of Hurricanes Charley, Frances, or Jeanne was declared on September 24, 2004. The Florida Hurricane Disaster Assistance Program used existing USDA Section 32 funds (estimated by USDA at more than \$500 million) to provide direct disaster payments to producers of citrus, vegetables and nursery crops based on estimated losses. Recipients were subject to an \$80,000 payment limit, and were required to have gross incomes under \$2.5 million (unless 75% of income was derived from farming or forestry). An additional \$608.5 million in agricultural assistance was made available in H.R. 4837 for regions that were severely affected by the series of 2004 hurricanes and tropical storms. Included in this amount was \$100 million for debris clean-up and repairs on farms and \$90 million for the section 32 Florida Hurricane Disaster Assistance Program for citrus, vegetable and nursery crop losses associated with the hurricanes.

41. Approximately what percentage of the total production of these crops is under production contract with a first handler or processor?

Describe contracts: Based on testimony, approximately 40%

- a. Under the terms of a typical production contract for these crops, is the grower exposed to *production risk* (i.e., the grower must deliver on the contract even if production shortfalls occur)? Yes , No
- b. Under the terms of a typical production contract for these crops, is the grower exposed to quality risk (i.e., there are significant price penalties if the product does not meet the quality characteristics specified in the contract). Yes , No

Delivery may be refused based on quality.

- c. Under the terms of a typical production contract for these crops, is the grower exposed to price risk (i.e., prices for specific quality characteristics are not specified in the contract)? Yes , No

42. In this region, approximately what percentage of the total production of these crops is priced prior to harvest (may or may not be tied to a production contract)?

Describe: For insurance purposes: 100%. For contract sales: 100%. For speculative sales: 100%. Harvest doesn't occur until a price agreement has been reached.

43. When corn farmers in the Midwest experience low (high) yields, they can often expect higher (lower) market prices (i.e., prices and yields are very negatively correlated). This moderates the revenue impacts of low yields. In contrast, for corn farmers in the Southeast there is very little relationship between their yields and market prices (i.e., prices and yields are independent). In this region the price and yield for these crops are: *Independent, Somewhat Negatively Correlated, or Highly Negatively Correlated?*

Independent

Describe: Prices are influenced by markets, relationships between the buyer and seller, varietal differences, quality judgments by the buyer, etc. more than by supply.

44. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement: “In this region, producers of these crops are financially able to self-insure against production losses.” Where 1 is strongly agree and 5 is strongly disagree.

Between 4 and 5.

Describe: In this region, producers are a highly variable group, both in their financial sophistication and in their fiscal resources. From discussions with producers, it appears that

those at the extremes in both these categories are more prepared to self-insure (i.e., the least wealthy and wealthiest producers are less risk-averse and prepared to deal with the consequences of a significant loss of stock). In the case of the least wealthy producers, coping or seeking alternative revenue sources was the most commonly identified strategy, while the wealthiest producers have the resources to self-insure as a straight-forward financial strategy.

45. For a typical grower of these crops, approximately what percentage of the total farm revenue would be attributable to these crops?

80-100 %.

46. What other commodities would typically* be produced on a farm that produces these commodities? What is the correlation between revenue from these other commodities and the revenue from these commodities? For correlation use a scale of one to five, where 1 is “strongly negatively correlated,” 2 is “negatively correlated,” 3 “independent,” 4 is “positively correlated,” and 5 is “strongly positively correlated.”

*Typically is an inappropriate concept for production of nursery crops in this region by this cohort of producers.

N/A.

47. In this region, approximately what percentage of the total production of these crops is produced by part-time farmers who have full-time employment off the farm?

Based on testimony, approximately 25%.

48. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement: “In this region, producers of these crops attempt to manage production risk by spreading their production over several geographic locations.”

3

Describe: Some producers are geographically diversified within the region. This pattern is less characteristic of the smallest producers. This pattern is truer for producers whose primary income is from nursery crops and the very largest producers.

49. In this region, what private-sector insurance products (if any) are currently available for these crops?

List all: It is possible to insure some of the perennial crop stock against fire through private contract, although such insurance is neither a standard product nor generally marketed. Private freeze insurance is available for some crops in the region.

Private named peril insurance for trees is available (<http://www.liveassetinsurance.com/index.htm>) but not in Florida. A principal related to the firm offering this insurance indicated he does not expect this line will ever be offered in Florida because of the “tail” risk associated with hurricanes.

50. Characterize how agricultural lenders in this region view the available RMA-facilitated insurance products for these crops (using Unfavorable, Indifferent, or Favorable). “Unfavorable” implies that lenders actually discourage borrowers from purchasing the product while “favorable” implies that lenders strongly encourage and often require borrowers to purchase the product. If multiple insurance products are offered, answer for each product.

Describe: The insurance is viewed favorably by lenders.

The importance of agriculture in the region, and the success of agricultural enterprises have had a substantial effect on the general attitude of agricultural lenders. Of course, loan underwriting is enormously influenced by individual credit history, which is highly variable because of the diverse characteristics of the operations that produce nursery crops.

51. On a scale from one to five, where one is very high and five is very low, assess the sufficiency of non-insurance coping mechanisms for producers of these crops in this region. Where 1 is highly sufficient and 5 is highly insufficient.

2

Risk Classification

52. On a scale from one to five, where one is strongly disagree and five is strongly agree, provide your reaction to the following statement: “In this region, no producers of these crops are really any more or less risky than any others. They all face about the same risk of loss.” Where 1 is strongly disagree and 5 is strongly agree

2

Describe: Weather in the region is somewhat variable. Some producers have greater variety of types and of varieties within types, increasing their potential for losses resulting from weather perils, but decreasing the effects of these losses on the financial condition of the operation. Maintenance practices can influence the ability of the nursery crops to tolerate perils.

53. In this region, for those who are currently not insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

54. In this region, for those who currently are insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

55. For this region, to what extent does the system used to establish the guarantee (~~e.g., APH yield or expected revenue~~) for this crop match the true value of the production at risk? An answer of one indicates that the system used to establish the guarantee does a very poor job of matching the true value of the production at risk. An answer of five indicates that the system used to establish the guarantee does a very good job of matching the true value of the production at risk.

Producers report the value of their production is generally underestimated by the inventory system. This is particularly true for new varieties.

56. On a scale from one to five, where one is very low and five is very high, assess the effectiveness of existing RMA-facilitated insurance products in accurately classifying potential policyholders according to their loss exposure (i.e., higher risk growers pay higher premiums while lower risk growers pay lower premiums). Where 1 is very low and 5 is very high.

2, the producers have very different levels of sophistication in their operations. The premiums do not reflect these differences.

Moral Hazard and Monitoring

57. ~~Yield variation~~ [Inventory loss] can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated crop insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product.

4.

58. To the extent that management affects ~~yield~~ loss risk exposure, how difficult is it to monitor the insured’s behavior?

Difficult

Explain: Since the indemnities are triggered by weather events, the losses that are purely tied to management practices are generally obvious. However, a weak nursery plant is less likely to survive a weather peril. Consequently, these multifactorial losses are more difficult to adjust.

59. Quality variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product. Where 1 is very low and 5 is very high

N/A. Quality standards do not apply to nursery inventory in the sense they do to a yield-based crop insurance.

60. To the extent that management affects quality loss risk exposure, how difficult is it to monitor the insured’s behavior?

N/A Quality standards do not apply to nursery inventory in the sense they do to yield-based crop insurance.

61. On a scale from one to five, where one is very large and five is very small, assess the extent of moral hazard problems with existing RMA-facilitated insurance products for this crop.

3

Problems Affecting Insurance Participation

62. Have significant problems occurred (either past or current) with policy provisions on [the] existing RMA-facilitated insurance products for the crop? If multiple insurance products are offered, answer for each product. Yes , No

63. If the answer to the previous question is no, go to next question. If yes, for each significant problem:

- a. Briefly describe the problem.

This is an extremely complex insurance product. There is no question the complexity has led insureds to believe they had coverage they did not have. There is also evidence the loss adjustment process has not been perceived as fair to the insureds.

- b. What has been the impact of the problem (e.g., high loss ratios, reduced demand, etc.)?

Reduced demand.

- c. Have policy provisions since been changed to adequately address the problem?

While the provisions have been changed several times, the issues have not been resolved to the satisfaction of producers.

- d. If policy provisions have not been changed, what changes in policy provisions do you think would increase insurance demand for this crop?

Everyone who expressed an opinion, with the exception of one agent, would like to see the policy simplified.

64. In this region, do reinsured companies have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

The administrative costs of the insurance are very high. The premiums are modest. The reinsured companies in many cases would be happy to not write a nursery policy.

65. In this region, do agents have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

66. List any perils that concern growers of these crops but are not covered by existing RMA-facilitated insurance products (e.g., business interruption due to unavailability of irrigation water, disease quarantines, etc.). For each peril assess the extent of growers' concerns about this peril on a scale from one to five where one is minor concern and five is major concern.

Labor shortage: 5

Varietal changes: 4

Improper requirement for rehabilitation: 5

Requirement to insure rehabilitating stock: 4

67. Briefly describe the potential for insuring these currently uninsured perils? In answering this, consider the following questions:

Can hidden action/moral hazard and classification/adverse selection problems be avoided?

Can clearly stated policy provisions be developed and accurate premium rates established?

These are not insurable perils, but the last two can be addressed by changes in procedures and pricing mechanisms.

68. On a scale from one to five, where one is very high and five is very low, assess the likelihood that problems affecting participation can be adequately addressed by product or policy modifications.

1

This program could be made attractive to many producers resulting in increased participation, especially at buy-up levels.

Exhibit 3

South-central States

Program Evaluation Diagnostic Questions – Nursery Crop Insurance Program

Region South-central States

Typical Crops Nursery plants in various sizes, including annuals, biennials, herbaceous perennials, and woody species of a wide range of types.

Market fresh , processed , other marketed as container, bare root, and balled and burlap plants.

Background Information

Production Processes

Annuals

1. Are the crops planted multiple times during a crop production year? If yes, explain:
Yes , No

Some of the annual nursery plants are planted multiple times, depending on markets and varieties.

2. For a single planting, are the crops harvested multiple times during a crop production year? If yes, explain: Yes , No

Some producers harvest the annual nursery plants from a single planting multiple times, depending on markets and varieties.

3. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as double crop, fallow, irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each operation is unique. The producers have developed niche markets for species, practice, and size. In general, liners and container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production.

Biennials

4. Are the crops harvested multiple times during a crop production year? Yes , No

A few the biennial nursery plants are harvested multiple times; most are harvested just once during the spring

5. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each biennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production.

Perennials

6. Are the crops harvested multiple times during a crop production year? If yes, explain:
Yes , No

Some of the perennial nursery plants are harvested multiple times (especially containerized production); others are harvested just once a year (especially perennials harvested bare root from field grown production), still others are treated like annual plants (either (a) grown for a year and then marketed or (b) purchased as liners or container plants and repotted and grown for a year.

7. Are the crops alternate bearing? Yes , No

This question is not relevant for the Nursery Crop Insurance Program. The insured crop is the plant itself, not the fruit.

8. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each perennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Plants are often potted up if they are not sold. Eventually as container plants become too large for the market, they are destroyed.

Field grown plants are grown in single or double rows, with or without irrigation. Growth is supported by frequent fertilization, and pest management including herbicide weed control. Turnover in many cases is influenced as much by markets as by management practices. Individual plants are harvested from the rows. For balled and burlap plants, the root ball and associated soil is dug, wrapped, and tied off. Eventually if plants cannot be sold they become too large for the market and are destroyed.

9. What is the economic life of the capital stock (trees, vines, etc.)?

The crop itself is the capital stock. It is often maintained for 2 to 5 years, although some operations may maintain a few plants even older.

10. Over its economic life, what is the likelihood that ten percent or more of the capital stock would be lost due to natural causes? Describe:

Approximately 1% (*probability of loss*).

The capital stock is the crop. The losses of capital stock may not involve loss of entire plants, but only portions of the plants to extreme weather. The effect of such partial losses in the short run is similar to the effect of losing whole plants, recovery is sometimes possible, depending on the nature of the damage.

11. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it starts producing saleable output?

Depends on the variety and market.

12. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it is at peak production?

Depends on the variety and market.

Nursery

13. Describe distinguishing characteristics of prevailing production system(s) for nursery crops in this region. Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Nurseries in the region grow plants primarily from seed, cuttings, and purchased liner plants (bare root or in containers). Some of the nursery plants purchased by nurseries is locally produced; some is imported into the region from other states. Markets determine the types planted and the practices to establish the new crop. Most producers have a particular market niche and work to maximize their share within the market and to minimize their costs.

Marketing

14. Describe typical marketing channels and/or contracting structures for these crops.

The marketing channels for nursery production vary by operation and variety being sold. Many producers in the region produce limited types and varieties, often but not always maintained under one practice. Depending on the market, production may be sold to a single buyer or multiple buyers. Some production is under contract. Some is speculative.

15. In this region are there critical time periods (i.e., marketing windows) when producers hope to market these crops? If so, describe.

Yes. The windows for sales of most of these nursery crops are very small.

16. Within the marketing channels and/or contracting structures mentioned above describe how quality variations are handled (e.g., off-grade apples in a fresh market system may be processed for juice).

Generally off grade production in not saleable. Rehabilitation of off-grade plants results in the production of plants which are often out of compliance with the terms of sales agreements.

In this region, do federal supply control marketing orders exist for production of these crops?
Yes , No

Describe:

In this region, do state quality marketing orders exist for production of these crops?
Yes , No

Describe:

RMA-Facilitated Insurance Products

17. In this region, what RMA-facilitated insurance products are currently available for these crops? List all:

The Nursery Crop Insurance policy and the AGR policies are the RMA-facilitated insurance product currently available for these crops. However, AGR and/or AGR-Lite are not available in all the south-central states. Furthermore, these products are not generally considered to be well-suited to nursery crop production.

The questions in this section (20 through 26) are not relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. There is no yield of nursery production. Consequently, this section has been left blank.

Yield Risk

18. In this region what are examples of crops with very **low relative** yield risk? Relative risk is used to adjust absolute magnitudes that vary across crops to a relative level to facilitate comparability (roughly, a measure of variation divided by the mean level).

19. In this region what are examples of crops with very **high relative** yield risk?

20. Are these crops exposed to catastrophic risks that would reduce yields by 50 percent or more? Yes , No

21. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic losses to occur?

Description

Years (or crop cycles) out of 25

22. Characterize yield risk for these crops *ignoring the catastrophic yield risk(s) described earlier*. On a scale from one to five, if the low relative yield risk crops identified earlier were one, and the high relative yield risk crops identified earlier were five, what number would you assign to the non-catastrophic yield risk associated with these crops in this region? Where 1 is very low risk and 5 is very high risk
23. In this region, do producers tend to experience multiple-year sequences of good yields or bad yields for these crops? If yes, describe what causes these multiple-year sequences.
Yes , No .
24. On a scale from one to five, where one is very low yield risk and five is very high yield risk, provide an overall assessment of yield risk faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk

The questions in this section (27 through 32) are only marginally relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. The nursery production has no quality in the sense a harvested crop has quality. Consequently, the questions in this section have been answered to reflect the effects on the “quality” of the inventory rather than any effects on quality of a harvestable product.

Quality Risk

25. In this region what are examples of crops with very **low** quality risk?
N/A
26. In this region what are examples of crops with very **high** quality risk?
N/A
27. Are the crops exposed to catastrophic quality risks that would reduce the ~~average price received~~ [marketability] by 20 percent or more? Yes , No
28. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic quality losses to occur?

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>
Drought	1
Hurricane	0 to 2
Flood	0 to 5

But generally affecting just a small portion of the crop in the region.

29. We now want to characterize quality risk for these crops ignoring the catastrophic quality risk(s) described earlier. On a scale from one to five, if the crops with very low risk of quality problems identified earlier were one, and the crops with very high risk of quality problems identified earlier were five, what number would you assign to the quality risk

associated with these crops in this region? Where 1 is very low quality risk and 5 is very high quality risk.

This question is not relevant to nursery crop insurance

30. On a scale from one to five, if one is very low ~~quality~~ [marketability] risk and five is very high risk, provide an overall assessment of quality risk faced by producers of these crops in this region. Where 1 is very low ~~quality~~ survival risk and 5 is very high ~~quality~~ survival risk.

1

The questions in this section (33 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period.

Price Risk

31. In this region what are examples of crops with very **low relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

32. In this region what are examples of crops with very **high relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

33. On a scale from one to five, if the low price risk crops identified earlier were one and the high price risk crops identified earlier were five, what number would you assign to the relative price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is low price risk crop and 5 is high price risk crop.

N/A

34. In this region, do producers tend to experience multiple-year sequences of high prices or low prices for these crops? Yes , No . If yes, describe.

N/A

35. On a scale from one to five, where one is very low price risk and five is very high price risk [of loss of value], provide an overall assessment of price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is very low price risk and 5 is very high price risk.

N/A

The questions in this section (36 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period. Consequently, this section has been left blank.

Other Sources of Revenue Risk

36. For this region, describe other factors that affect revenue risk for these crops (e.g., prevented planting).
37. On a scale from one to five, where one is very low risk and five is very high risk, provide an overall assessment of risk sources other than yield, quality, and price risks faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

Sufficient Non-Insurance Coping Mechanisms

38. On a scale from one to five, where one is very low and five is very high, assess the extent to which producers of these crops in this region use risk-reducing inputs as a substitute for crop insurance. Where 1 is very low and 5 is very high.

3 to 4

39. Are government crop programs (e.g., marketing loans and counter-cyclical payments) available for these crops? Yes , No

Describe:

Only some of the questions in this section (40 through 53) are relevant to the FFT (Pilot) Insurance Program. The relevant questions have been answered.

40. In this region, is there a history of federal disaster payments for these crops? Yes , No

Describe: in 2011, the Emergency Conservation Program (ECP) was funded to provide resources for rehabilitation of farmland damaged by a natural disaster. The TAP program was also available, although restrictions applied for nursery production.

41. Approximately what percentage of the total production of these crops is under production contract with a first handler or processor?

Describe contracts: Based on limited testimony, approximately half of the total production of these crops is under production contract with a first handler.

- a. Under the terms of a typical production contract for these crops, is the grower exposed to *production risk* (i.e., the grower must deliver on the contract even if production shortfalls occur)? Yes , No
- b. Under the terms of a typical production contract for these crops, is the grower exposed to *quality risk* (i.e., there are significant price penalties if the product does not meet the

quality characteristics specified in the contract). Yes , No

Delivery may be refused based on quality.

- c. Under the terms of a typical production contract for these crops, is the grower exposed to price risk (i.e., prices for specific quality characteristics are not specified in the contract)? Yes , No

Production is either accepted or rejected.

42. In this region, approximately what percentage of the total production of these crops is priced prior to harvest (may or may not be tied to a production contract)?

Describe: 100%. Harvest doesn't occur until a price agreement has been reached.

43. When corn farmers in the Midwest experience low (high) yields, they can often expect higher (lower) market prices (i.e., prices and yields are very negatively correlated). This moderates the revenue impacts of low yields. In contrast, for corn farmers in the Southeast there is very little relationship between their yields and market prices (i.e., prices and yields are independent). In this region the price and yield for these crops are: *Independent, Somewhat Negatively Correlated, or Highly Negatively Correlated?*

Independent

Describe: Prices are influenced by markets, relationships between the buyer and seller, varietal differences, quality judgments by the buyer, etc. more than by supply.

44. On a scale from one to five, where one is "strongly disagree" and five is "strongly agree," provide your reaction to the following statement: "In this region, producers of these crops are financially able to self-insure against production losses." Where 1 is strongly agree and 5 is strongly disagree.

Between 3 and 5, depending on the producer.

Describe: In this region, producers are a highly variable group, both in their financial sophistication and in their fiscal resources. The least wealthy and wealthiest producers are less risk-averse and prepared to deal with the consequences of a significant loss. In the case of the least wealthy producers, alternative revenue sources were the most commonly identified strategy; the wealthier producers often self-insure as financial decision.

45. For a typical grower of these crops, approximately what percentage of the total farm revenue would be attributable to these crops?

50 - 100 %, although the concept of typical is misleading in this industry. Each operation is unique.

46. What other commodities would typically* be produced on a farm that produces these commodities? What is the correlation between revenue from these other commodities and the revenue from these commodities? For correlation use a scale of one to five, where 1 is “strongly negatively correlated,” 2 is “negatively correlated,” 3 “independent,” 4 is “positively correlated,” and 5 is “strongly positively correlated.”

*Typically is an inappropriate concept for production of nursery crops in this region by this cohort of producers.

N/A

47. In this region, approximately what percentage of the total production of these crops is produced by part-time farmers who have full-time employment off the farm?

Based on testimony, approximately 33%.

48. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement: “In this region, producers of these crops attempt to manage production risk by spreading their production over several geographic locations.”

2

Describe: Few producers are geographically diversified within the region. The smaller producers are less likely to have any geographic diversity.

49. In this region, what private-sector insurance products (if any) are currently available for these crops?

List all: It is possible to insure some of the perennial crop stock against fire through private contract, although such insurance is neither a standard product nor generally marketed.

Private freeze insurance is available as is private named peril insurance for trees is available (<http://www.liveassetinsurance.com/index.htm>).

50. Characterize how agricultural lenders in this region view the available RMA-facilitated insurance products for these crops (using Unfavorable, Indifferent, or Favorable). “Unfavorable” implies that lenders actually discourage borrowers from purchasing the product while “favorable” implies that lenders strongly encourage and often require borrowers to purchase the product. If multiple insurance products are offered, answer for each product.

Describe: The insurance is viewed favorably by lenders.

The importance of agriculture in the region, and the success of agricultural enterprises have had a substantial effect on the general attitude of lenders. Loan underwriting is enormously

influenced by individual credit history, which is highly variable because of the diverse characteristics of the operations that produce nursery crops.

51. On a scale from one to five, where one is very high and five is very low, assess the sufficiency of non-insurance coping mechanisms for producers of these crops in this region. Where 1 is highly sufficient and 5 is highly insufficient.

2

Risk Classification

52. On a scale from one to five, where one is strongly disagree and five is strongly agree, provide your reaction to the following statement: “In this region, no producers of these crops are really any more or less risky than any others. They all face about the same risk of loss.” Where 1 is strongly disagree and 5 is strongly agree

2

Describe: Producers with a greater range of types and of varieties within types decreasing the effects of losses on the financial condition of the operation. Maintenance practices can influence the ability of the nursery crops to tolerate perils.

53. In this region, for those who are currently not insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

54. In this region, for those who currently are insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

55. For this region, to what extent does the system used to establish the guarantee (~~e.g., APH yield or expected revenue~~) for this crop match the true value of the production at risk? An answer of one indicates that the system used to establish the guarantee does a very poor job of matching the true value of the production at risk. An answer of five indicates that the

system used to establish the guarantee does a very good job of matching the true value of the production at risk.

Producers report the value of their production is generally underestimated by the inventory system. This is particularly true for new varieties.

56. On a scale from one to five, where one is very low and five is very high, assess the effectiveness of existing RMA-facilitated insurance products in accurately classifying potential policyholders according to their loss exposure (i.e., higher risk growers pay higher premiums while lower risk growers pay lower premiums). Where 1 is very low and 5 is very high.

3 to 4, the producers have different levels of sophistication in their operations. The premiums do not reflect these differences, but the differences are less extreme than in the Northeast and southeastern regions.

Moral Hazard and Monitoring

57. ~~Yield variation~~ [Inventory loss] can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated crop insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product

4.

58. To the extent that management affects ~~yield loss~~ risk exposure, how difficult is it to monitor the insured’s behavior?

Difficult

Explain: Since the indemnities are triggered by weather events, the losses that are purely tied to management practices are generally obvious. However, a weak nursery plant is less likely to survive a weather peril. Consequently, these multifactorial losses are more difficult to adjust.

59. Quality variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product. Where 1 is very low and 5 is very high

N/A. Quality standards do not apply to nursery inventory in the sense they do to a yield-based crop insurance.

60. To the extent that management affects quality loss risk exposure, how difficult is it to monitor the insured's behavior?

N/A Quality standards do not apply to nursery inventory in the sense they do to yield-based crop insurance.

61. On a scale from one to five, where one is very large and five is very small, assess the extent of moral hazard problems with existing RMA-facilitated insurance products for this crop.

3

Problems Affecting Insurance Participation

62. Have significant problems occurred (either past or current) with policy provisions on [the] existing RMA-facilitated insurance products for the crop? If multiple insurance products are offered, answer for each product. Yes , No

63. If the answer to the previous question is no, go to next question. If yes, for each significant problem:

a. Briefly describe the problem.

This is an extremely complex insurance product. The complexity has led some insureds to believe they had coverage they did not have. There was substantial testimony the loss adjustment process has not been perceived as fair.

b. What has been the impact of the problem (e.g., high loss ratios, reduced demand, etc.)?

Reduced demand.

c. Have policy provisions since been changed to adequately address the problem?

While the provisions have been changed several times, the issues have not been resolved to the satisfaction of producers.

d. If policy provisions have not been changed, what changes in policy provisions do you think would increase insurance demand for this crop?

Everyone who expressed an opinion, with the exception of one agent, would like to see the policy simplified.

64. In this region, do reinsured companies have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

The administrative costs of the insurance are very high. The premiums are modest. The reinsured companies in many cases would be happy to not write a nursery policy.

65. In this region, do agents have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

66. List any perils that concern growers of these crops but are not covered by existing RMA-facilitated insurance products (e.g., business interruption due to unavailability of irrigation water, disease quarantines, etc.). For each peril assess the extent of growers' concerns about this peril on a scale from one to five where one is minor concern and five is major concern.

Labor shortage: 5

Improper requirement for rehabilitation: 5

Requirement to insure rehabilitating stock: 4

67. Briefly describe the potential for insuring these currently uninsured perils? In answering this, consider the following questions:

Can hidden action/moral hazard and classification/adverse selection problems be avoided?

Can clearly stated policy provisions be developed and accurate premium rates established?

These are not insurable perils, but the last two can be addressed by changes in procedures and pricing mechanisms.

68. On a scale from one to five, where one is very high and five is very low, assess the likelihood that problems affecting participation can be adequately addressed by product or policy modifications.

1

This program could be made attractive to many producers resulting in increased participation, especially at buy-up levels.

Exhibit 4

Texas and Oklahoma

Program Evaluation Diagnostic Questions – Nursery Crop Insurance Program

Region Texas and Oklahoma
Typical Crops Nursery plants in various sizes, including annuals, biennials, herbaceous perennials, and woody species of a wide range of types.
Market fresh , processed , other marketed as container, bare root, and balled and burlap plants.

Background Information

Production Processes

Annuals

1. Are the crops planted multiple times during a crop production year? If yes, explain:
 Yes , No

Some of the annual nursery plants are planted multiple times, depending on markets and varieties.

2. For a single planting, are the crops harvested multiple times during a crop production year? If yes, explain: Yes , No

Some producers harvest the annual nursery plants from a single planting multiple times, depending on markets and varieties. Most plant them for a specific harvest date.

3. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as double crop, fallow, irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each operation is unique. The producers have developed niche markets for species, practice, and size. In general, liners and container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices.

Biennials

4. Are the crops harvested multiple times during a crop production year? Yes , No

Most are harvested just once during the spring. Some also have a fall harvest period.

5. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each biennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close

proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Biennials are not generally field-grown.

Perennials

6. Are the crops harvested multiple times during a crop production year? If yes, explain:
Yes , No

Some of the perennial nursery plants are harvested multiple times (especially containerized production); others are harvested just once a year (especially perennials harvested bare root from field grown production), still others are treated like annual plants, either (a) grown for a year and then marketed or (b) purchased as liners or container plants and repotted and grown for a year.

7. Are the crops alternate bearing? Yes , No

This question is not relevant for the Nursery Crop Insurance Program. The insured crop is the plant itself, not the fruit.

8. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each perennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Plants are often potted up if they are not sold. Eventually as container plants become too large for the market, they are destroyed.

Field grown plants are grown in single or double rows, with or without irrigation. Growth is supported by frequent fertilization, and pest management including herbicide weed control. Turnover in many cases is influenced as much by markets as by management practices. Individual plants are harvested from the rows. For balled and burlap plants, the root ball and associated soil is dug, wrapped, and tied off. Eventually if plants can not be sold they become too large for the market and are destroyed.

9. What is the economic life of the capital stock (trees, vines, etc.)?

The crop itself is the capital stock. It may be maintained for 2 to 5 years, although some operations maintain even older plants.

10. Over its economic life, what is the likelihood that ten percent or more of the capital stock would be lost due to natural causes?

Describe: Approximately 1% (*probability of loss*).

The capital stock is the crop. The losses of capital stock may not involve loss of entire plants, but only portions of the plants to extreme weather. The effect of such partial losses in the short run is similar to the effect of losing whole plants, recovery is sometimes possible, depending on the nature of the damage.

11. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it starts producing saleable output?

Depends on the variety and market.

12. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it is at peak production?

Depends on the variety and market.

Nursery

13. Describe distinguishing characteristics of prevailing production system(s) for nursery crops in this region. Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Nurseries in the region grow plants primarily from seed, cuttings, and purchased liner plants (bare root or in containers). Some of the nursery plants purchased by nurseries are locally produced; some are imported into the region from other states. Markets determine the types planted and the practices to establish the new crop. Most producers have a particular market niche and work to maximize their share within the market and to minimize their costs.

Marketing

14. Describe typical marketing channels and/or contracting structures for these crops.

The marketing channels for nursery production vary by operation and variety being sold. Many producers in the region produce limited types and varieties, often but not always maintained under one practice. Depending on the market, production may be sold to a single buyer or multiple buyers. Some production is under contract. Some is speculative.

15. In this region are there critical time periods (i.e., marketing windows) when producers hope to market these crops? If so, describe.

Yes. The windows for sales of most of these nursery crops are very small.

16. Within the marketing channels and/or contracting structures mentioned above describe how quality variations are handled (e.g., off-grade apples in a fresh market system may be processed for juice).

Generally off grade production is not saleable. Rehabilitation of off-grade plants results in the production of plants which are often out of compliance with the terms of sales agreements.

In this region, do federal supply control marketing orders exist for production of these crops?
Yes , No

Describe:

In this region, do state quality marketing orders exist for production of these crops?
Yes , No

Describe:

RMA-Facilitated Insurance Products

17. In this region, what RMA-facilitated insurance products are currently available for these crops? List all:

The Nursery Crop Insurance policy is the RMA-facilitated insurance product currently available for these crops.

The questions in this section (20 through 26) are not relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. There is no yield of nursery production. Consequently, this section has been left blank.

Yield Risk

18. In this region what are examples of crops with very **low relative** yield risk? Relative risk is used to adjust absolute magnitudes that vary across crops to a relative level to facilitate comparability (roughly, a measure of variation divided by the mean level).

19. In this region what are examples of crops with very **high relative** yield risk?

20. Are these crops exposed to catastrophic risks that would reduce yields by 50 percent or more? Yes , No

21. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic losses to occur?

Description

Years (or crop cycles) out of 25

22. Characterize yield risk for these crops *ignoring the catastrophic yield risk(s) described earlier*. On a scale from one to five, if the low relative yield risk crops identified earlier were one, and the high relative yield risk crops identified earlier were five, what number would you assign to the non-catastrophic yield risk associated with these crops in this region? Where 1 is very low risk and 5 is very high risk

23. In this region, do producers tend to experience multiple-year sequences of good yields or bad yields for these crops? If yes, describe what causes these multiple-year sequences.
Yes , No .

24. On a scale from one to five, where one is very low yield risk and five is very high yield risk, provide an overall assessment of yield risk faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

The questions in this section (27 through 32) are only marginally relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. The nursery production has no quality in the sense a harvested crop has quality. Consequently, the questions in this section have been answered to reflect the effects on the “quality” of the inventory rather than any effects on quality of a harvestable product.

Quality Risk

25. In this region what are examples of crops with very **low** quality risk?

N/A

26. In this region what are examples of crops with very **high** quality risk?

N/A

27. Are the crops exposed to catastrophic quality risks that would reduce the ~~average price received~~ [marketability] by 20 percent or more? Yes , No

28. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic quality losses to occur?

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>
Drought	1
Hurricane	0 to 2
Flood	0 to 5
But generally affecting just a small portion of the crop in the region.	

29. We now want to characterize quality risk for these crops ignoring the catastrophic quality risk(s) described earlier. On a scale from one to five, if the crops with very low risk of quality problems identified earlier were one, and the crops with very high risk of quality problems identified earlier were five, what number would you assign to the quality risk associated with these crops in this region? Where 1 is very low quality risk and 5 is very high quality risk.

This question is not relevant to nursery crop insurance.

30. On a scale from one to five, if one is very low ~~quality~~ [marketability] risk and five is very high risk, provide an overall assessment of quality risk faced by producers of these crops in this region. Where 1 is very low ~~quality~~ survival risk and 5 is very high ~~quality~~ survival risk.

1

The questions in this section (33 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period.

Price Risk

31. In this region what are examples of crops with very **low relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

32. In this region what are examples of crops with very **high relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

33. On a scale from one to five, if the low price risk crops identified earlier were one and the high price risk crops identified earlier were five, what number would you assign to the relative price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is low price risk crop and 5 is high price risk crop.

N/A

34. In this region, do producers tend to experience multiple-year sequences of high prices or low prices for these crops? Yes , No . If yes, describe.

N/A

35. On a scale from one to five, where one is very low price risk and five is very high price risk [of loss of value], provide an overall assessment of price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is very low price risk and 5 is very high price risk.

N/A

The questions in this section (36 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period. Consequently, this section has been left blank.

Other Sources of Revenue Risk

36. For this region, describe other factors that affect revenue risk for these crops (e.g., prevented planting).
37. On a scale from one to five, where one is very low risk and five is very high risk, provide an overall assessment of risk sources other than yield, quality, and price risks faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

Sufficient Non-Insurance Coping Mechanisms

38. On a scale from one to five, where one is very low and five is very high, assess the extent to which producers of these crops in this region use risk-reducing inputs as a substitute for crop insurance. Where 1 is very low and 5 is very high.

3

39. Are government crop programs (e.g., marketing loans and counter-cyclical payments) available for these crops? Yes , No

Describe:

Only some of the questions in this section (40 through 53) are relevant to the FFT (Pilot) Insurance Program. The relevant questions have been answered.

40. In this region, is there a history of federal disaster payments for these crops? Yes , No

Describe: In 2011, the Emergency Conservation Program (ECP) was funded to provide resources for rehabilitation of farmland damaged by a natural disaster. The TAP program was also available, although restrictions applied for nursery production.

41. Approximately what percentage of the total production of these crops is under production contract with a first handler or processor?

50%.

Describe contracts: Based on limited testimony, approximately half of the total production of these crops is under production contract with a first handler

- a. Under the terms of a typical production contract for these crops, is the grower exposed to *production risk* (i.e., the grower must deliver on the contract even if production shortfalls occur)? Yes , No

- b. Under the terms of a typical production contract for these crops, is the grower exposed to quality risk (i.e., there are significant price penalties if the product does not meet the quality characteristics specified in the contract). Yes , No

Delivery may be refused based on quality.

- c. Under the terms of a typical production contract for these crops, is the grower exposed to price risk (i.e., prices for specific quality characteristics are not specified in the contract)? Yes , No

Production is either accepted or rejected.

42. In this region, approximately what percentage of the total production of these crops is priced prior to harvest (may or may not be tied to a production contract)?

Describe: 100%. Harvest doesn't occur until a price agreement has been reached.

43. When corn farmers in the Midwest experience low (high) yields, they can often expect higher (lower) market prices (i.e., prices and yields are very negatively correlated). This moderates the revenue impacts of low yields. In contrast, for corn farmers in the Southeast there is very little relationship between their yields and market prices (i.e., prices and yields are independent). In this region the price and yield for these crops are: *Independent, Somewhat Negatively Correlated, or Highly Negatively Correlated?*

Independent

Describe: Prices are influenced by markets, relationships between the buyer and seller, varietal differences, quality judgments by the buyer, etc. more than by supply.

44. On a scale from one to five, where one is "strongly disagree" and five is "strongly agree," provide your reaction to the following statement: "In this region, producers of these crops are financially able to self-insure against production losses." Where 1 is strongly agree and 5 is strongly disagree.

Between 3 and 5, depending on the producer.

Describe: In this region, producers are a highly variable group, both in their financial sophistication and in their fiscal resources. The least wealthy and wealthiest producers are less risk-averse and prepared to deal with the consequences of a significant loss. In the case of the least wealthy producers, alternative revenue sources were the most commonly identified strategy; the wealthier producers often self-insure as financial decision.

45. For a typical grower of these crops, approximately what percentage of the total farm revenue would be attributable to these crops?

50 - 100 %, although the concept of typical is misleading in this industry. Each operation is unique.

46. What other commodities would typically* be produced on a farm that produces these commodities? What is the correlation between revenue from these other commodities and the revenue from these commodities? For correlation use a scale of one to five, where 1 is “strongly negatively correlated,” 2 is “negatively correlated,” 3 “independent,” 4 is “positively correlated,” and 5 is “strongly positively correlated.”

*Typically is an inappropriate concept for production of nursery crops in this region by this cohort of producers.

N/A

47. In this region, approximately what percentage of the total production of these crops is produced by part-time farmers who have full-time employment off the farm?

Based on testimony, approximately 45 to 50%.

48. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement: “In this region, producers of these crops attempt to manage production risk by spreading their production over several geographic locations.”

2

Describe: Few producers are geographically diversified within the region. The smaller producers are less likely to have any geographic diversity.

49. In this region, what private-sector insurance products (if any) are currently available for these crops?

List all: It is possible to insure some of the perennial crop stock against fire through private contract, although such insurance is neither a standard product nor generally marketed.

Private freeze insurance is available as is private named peril insurance for trees(<http://www.liveassetinsurance.com/index.htm>).

50. Characterize how agricultural lenders in this region view the available RMA-facilitated insurance products for these crops (using Unfavorable, Indifferent, or Favorable). “Unfavorable” implies that lenders actually discourage borrowers from purchasing the product while “favorable” implies that lenders strongly encourage and often require borrowers to purchase the product. If multiple insurance products are offered, answer for each product.

Describe: The insurance is viewed favorably by lenders.

The importance of agriculture in the region and the success of agricultural operations have had a substantial effect on the general attitude of lenders. Loan underwriting is enormously influenced by individual credit history, which is highly variable because of the diverse characteristics of the operations that produce nursery crops.

51. On a scale from one to five, where one is very high and five is very low, assess the sufficiency of non-insurance coping mechanisms for producers of these crops in this region. Where 1 is highly sufficient and 5 is highly insufficient.

2

Risk Classification

52. On a scale from one to five, where one is strongly disagree and five is strongly agree, provide your reaction to the following statement: “In this region, no producers of these crops are really any more or less risky than any others. They all face about the same risk of loss.” Where 1 is strongly disagree and 5 is strongly agree

2

Describe: Producers with a greater range of types and of varieties within types have less risk of substantial losses. Maintenance practices can influence the ability of the nursery crops to tolerate perils.

53. In this region, for those who are currently not insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

54. In this region, for those who currently are insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

55. For this region, to what extent does the system used to establish the guarantee (~~e.g., APH yield or expected revenue~~) for this crop match the true value of the production at risk? An answer of one indicates that the system used to establish the guarantee does a very poor job of matching the true value of the production at risk. An answer of five indicates that the system used to establish the guarantee does a very good job of matching the true value of the production at risk.

Producers report the value of their production is generally underestimated by the inventory system.

56. On a scale from one to five, where one is very low and five is very high, assess the effectiveness of existing RMA-facilitated insurance products in accurately classifying potential policyholders according to their loss exposure (i.e., higher risk growers pay higher premiums while lower risk growers pay lower premiums). Where 1 is very low and 5 is very high.

3 to 4, the producers have different levels of sophistication in their operations. The premiums do not reflect these differences, but the differences are less extreme than in the Northeast and southeastern regions.

Moral Hazard and Monitoring

57. ~~Yield variation~~ [Inventory loss] can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated crop insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product.

4.

58. To the extent that management affects ~~yield loss~~ risk exposure, how difficult is it to monitor the insured’s behavior?

Difficult

Explain: Since the indemnities are triggered by weather events, the losses that are purely tied to management practices are generally obvious. However, a weak nursery plant is less likely to survive a weather peril. Consequently, these multifactorial losses are more difficult to adjust.

59. Quality variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product. Where 1 is very low and 5 is very high.

N/A. Quality standards do not apply to nursery inventory in the sense they do to a yield-based crop insurance.

60. To the extent that management affects quality loss risk exposure, how difficult is it to monitor the insured’s behavior?

N/A Quality standards do not apply to nursery inventory in the sense they do to yield-based crop insurance.

61. On a scale from one to five, where one is very large and five is very small, assess the extent of moral hazard problems with existing RMA-facilitated insurance products for this crop.

3 to 4

Problems Affecting Insurance Participation

62. Have significant problems occurred (either past or current) with policy provisions on [the] existing RMA-facilitated insurance products for the crop? If multiple insurance products are offered, answer for each product. Yes , No

63. If the answer to the previous question is no, go to next question. If yes, for each significant problem:

- a. Briefly describe the problem.

This is an extremely complex insurance product. The complexity has led some insureds to believe they had coverage they did not have. There was substantial testimony the loss adjustment process has not been perceived as fair.

- b. What has been the impact of the problem (e.g., high loss ratios, reduced demand, etc.)?

Reduced demand.

- c. Have policy provisions since been changed to adequately address the problem?

While the provisions have been changed several times, the issues have not been resolved to the satisfaction of producers.

- d. If policy provisions have not been changed, what changes in policy provisions do you think would increase insurance demand for this crop?

Everyone who expressed an opinion, with the exception of one agent, would like to see the policy simplified.

64. In this region, do reinsured companies have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

The administrative costs of the insurance are very high. The premiums are modest. The reinsured companies in many cases would be happy to not write a nursery policy.

65. In this region, do agents have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

66. List any perils that concern growers of these crops but are not covered by existing RMA-facilitated insurance products (e.g., business interruption due to unavailability of irrigation water, disease quarantines, etc.). For each peril assess the extent of growers' concerns about this peril on a scale from one to five where one is minor concern and five is major concern.

Labor shortage: 5

Improper requirement for rehabilitation: 5

Requirement to insure rehabilitating stock: 4

67. Briefly describe the potential for insuring these currently uninsured perils? In answering this, consider the following questions:

Can hidden action/moral hazard and classification/adverse selection problems be avoided?

Can clearly stated policy provisions be developed and accurate premium rates established?

These are not insurable perils, but the last two can be addressed by changes in procedures and pricing mechanisms.

68. On a scale from one to five, where one is very high and five is very low, assess the likelihood that problems affecting participation can be adequately addressed by product or policy modifications.

1

This program could be made attractive to many producers resulting in increased participation, especially at buy-up levels.

Exhibit 5

Northwestern States

Program Evaluation Diagnostic Questions – Nursery Crop Insurance Program

Region Northwestern States

Typical Crops Nursery plants in various sizes, including annuals, biennials, herbaceous perennials, and woody species of a wide range of types.

Market fresh , processed , other marketed as container, bare root, and balled and burlap plants.

Background Information

Production Processes

Annuals

1. Are the crops planted multiple times during a crop production year? If yes, explain:
Yes , No

Some of the annual nursery plants are planted multiple times, depending on markets and varieties.

2. For a single planting, are the crops harvested multiple times during a crop production year? If yes, explain: Yes , No

Most single plantings are planted for a specific harvest date. Some producers harvest the annual nursery plants from a single planting multiple times, depending on markets and varieties.

3. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as double crop, fallow, irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each operation is unique. The producers have developed niche markets for species, practice, and size. In general, liners and container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices.

Biennials

4. Are the crops harvested multiple times during a crop production year? Yes , No

Most are harvested just once during the spring. Some also have a fall harvest period.

5. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each biennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, containerized plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Biennials are not generally field-grown.

Perennials

6. Are the crops harvested multiple times during a crop production year? If yes, explain:
Yes , No

Some of the perennial nursery plants are harvested multiple times (especially containerized production); others are harvested just once a year (especially perennials harvested bare root from field grown production), still others are treated like annual plants and are planted and harvested in the same year.

7. Are the crops alternate bearing? Yes , No

This question is not relevant for the Nursery Crop Insurance Program. The insured crop is the plant itself, not the fruit.

8. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each perennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Plants are often potted up if they are not sold. Eventually as container plants become too large for the market, they are destroyed.

Field grown plants are grown in single or double rows, with or without irrigation. Growth is supported by frequent fertilization, and pest management including herbicide weed control. Turnover in many cases is influenced as much by markets as by management practices. Individual plants are harvested from the rows. For balled and burlap plants, the root ball and associated soil is dug, wrapped, and tied off. Eventually if plants can not be sold they become too large for the market and are destroyed.

9. What is the economic life of the capital stock (trees, vines, etc.)?

The crop itself is the capital stock. It may be maintained for 2 to 5 years, although some operations maintain even older plants, that practice is unusual in the Northwest.

10. Over its economic life, what is the likelihood that ten percent or more of the capital stock would be lost due to natural causes? Describe:

Approximately 1% (*probability of loss*)

The capital stock is the crop. The losses of capital stock may not involve loss of entire plants, but only portions of the plants to extreme weather. The effect of such partial losses in the short run is similar to the effect of losing whole plants, recovery is sometimes possible, depending on the nature of the damage.

11. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it starts producing saleable output?

Depends on the variety and market.

12. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it is at peak production?

Depends on the variety and market.

Nursery

13. Describe distinguishing characteristics of prevailing production system(s) for nursery crops in this region. Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Nurseries in the region grow plants primarily from seed, cuttings, and purchased liner plants (bare root or in containers). Markets determine the types and varieties planted and the practices to establish the new crop. Most producers have a particular market niche and work to maximize their share within the market and to minimize their costs.

Marketing

14. Describe typical marketing channels and/or contracting structures for these crops.

The marketing channels for nursery production vary by operation and variety being sold. Many producers in the region produce limited types and varieties, often but not always maintained under one practice. Depending on the market, production may be sold to a single buyer or multiple buyers. Some production is under contract. Some is speculative.

15. In this region are there critical time periods (i.e., marketing windows) when producers hope to market these crops? If so, describe.

Yes. The windows for sales of most of these nursery crops are very small.

16. Within the marketing channels and/or contracting structures mentioned above describe how quality variations are handled (e.g., off-grade apples in a fresh market system may be processed for juice).

Generally off grade production is not saleable. Rehabilitation of off-grade plants results in the production of plants which are often out of compliance with the terms of sales agreements.

In this region, do federal supply control marketing orders exist for production of these crops?
Yes , No

Describe:

In this region, do state quality marketing orders exist for production of these crops?
Yes , No

Describe:

RMA-Facilitated Insurance Products

17. In this region, what RMA-facilitated insurance products are currently available for these crops? List all:

The Nursery Crop Insurance policy and the AGR policies are the RMA-facilitated insurance product currently available for these crops. However, AGR and/or AGR-Lite are not available in all the south-central states. Furthermore these products are not generally considered to be well-suited to nursery crop production.

The questions in this section (20 through 26) are not relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. There is no yield of nursery production. Consequently, this section has been left blank.

Yield Risk

18. In this region what are examples of crops with very **low relative** yield risk? Relative risk is used to adjust absolute magnitudes that vary across crops to a relative level to facilitate comparability (roughly, a measure of variation divided by the mean level).

19. In this region what are examples of crops with very **high relative** yield risk?

20. Are these crops exposed to catastrophic risks that would reduce yields by 50 percent or more? Yes , No

21. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic losses to occur?

Description

Years (or crop cycles) out of 25

22. Characterize yield risk for these crops *ignoring the catastrophic yield risk(s) described earlier*. On a scale from one to five, if the low relative yield risk crops identified earlier were one, and the high relative yield risk crops identified earlier were five, what number would

you assign to the non-catastrophic yield risk associated with these crops in this region?
Where 1 is very low risk and 5 is very high risk.

23. In this region, do producers tend to experience multiple-year sequences of good yields or bad yields for these crops? If yes, describe what causes these multiple-year sequences.

Yes , No .

24. On a scale from one to five, where one is very low yield risk and five is very high yield risk, provide an overall assessment of yield risk faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

The questions in this section (27 through 32) are only marginally relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. The nursery production has no quality in the sense a harvested crop has quality. Consequently, the questions in this section have been answered to reflect the effects on the “quality” of the inventory rather than any effects on quality of a harvestable product.

Quality Risk

25. In this region what are examples of crops with very **low** quality risk?

N/A

26. In this region what are examples of crops with very **high** quality risk?

N/A

27. Are the crops exposed to catastrophic quality risks that would reduce the ~~average price received~~ [marketability] by 20 percent or more? Yes , No

28. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic quality losses to occur?

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>
Excessive Precipitation But generally affecting just a small portion of the crop in the region.	0 to 2

29. We now want to characterize quality risk for these crops ignoring the catastrophic quality risk(s) described earlier. On a scale from one to five, if the crops with very low risk of quality problems identified earlier were one, and the crops with very high risk of quality problems identified earlier were five, what number would you assign to the quality risk associated with these crops in this region? Where 1 is very low quality risk and 5 is very high quality risk.

This question is not relevant to nursery crop insurance.

30. On a scale from one to five, if one is very low ~~quality~~ [marketability] risk and five is very high risk, provide an overall assessment of quality risk faced by producers of these crops in this region. Where 1 is very low ~~quality~~ survival risk and 5 is very high ~~quality~~ survival risk.

1

The questions in this section (33 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period.

Price Risk

31. In this region what are examples of crops with very **low relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

32. In this region what are examples of crops with very **high relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A

33. On a scale from one to five, if the low price risk crops identified earlier were one and the high price risk crops identified earlier were five, what number would you assign to the relative price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is low price risk crop and 5 is high price risk crop.

N/A

34. In this region, do producers tend to experience multiple-year sequences of high prices or low prices for these crops? Yes , No . If yes, describe.

N/A

35. On a scale from one to five, where one is very low price risk and five is very high price risk [of loss of value], provide an overall assessment of price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is very low price risk and 5 is very high price risk.

N/A

The questions in this section (36 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period. Consequently, this section has been left blank.

Other Sources of Revenue Risk

36. For this region, describe other factors that affect revenue risk for these crops (e.g., prevented planting).
37. On a scale from one to five, where one is very low risk and five is very high risk, provide an overall assessment of risk sources other than yield, quality, and price risks faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

Sufficient Non-Insurance Coping Mechanisms

38. On a scale from one to five, where one is very low and five is very high, assess the extent to which producers of these crops in this region use risk-reducing inputs as a substitute for crop insurance. Where 1 is very low and 5 is very high.

3 to 4

39. Are government crop programs (e.g., marketing loans and counter-cyclical payments) available for these crops? Yes , No

Describe:

Only some of the questions in this section (40 through 53) are relevant to the FFT (Pilot) Insurance Program. The relevant questions have been answered.

40. In this region, is there a history of federal disaster payments for these crops? Yes , No

Describe: Disaster payments have been made available for unseasonable freezes.

41. Approximately what percentage of the total production of these crops is under production contract with a first handler or processor?

50 to 75%.

Describe contracts: Based on limited testimony, approximately half of the total production of these crops is under production contract with a first handler

- a. Under the terms of a typical production contract for these crops, is the grower exposed to *production risk* (i.e., the grower must deliver on the contract even if production shortfalls occur)? Yes , No
- b. Under the terms of a typical production contract for these crops, is the grower exposed to quality risk (i.e., there are significant price penalties if the product does not meet the quality characteristics specified in the contract). Yes , No

Delivery may be refused based on quality.

- c. Under the terms of a typical production contract for these crops, is the grower exposed to price risk (i.e., prices for specific quality characteristics are not specified in the contract)?
Yes , No

Production is either accepted or rejected.

42. In this region, approximately what percentage of the total production of these crops is priced prior to harvest (may or may not be tied to a production contract)?

Describe: 100%. Harvest doesn't occur until a price agreement has been reached.

43. When corn farmers in the Midwest experience low (high) yields, they can often expect higher (lower) market prices (i.e., prices and yields are very negatively correlated). This moderates the revenue impacts of low yields. In contrast, for corn farmers in the Southeast there is very little relationship between their yields and market prices (i.e., prices and yields are independent). In this region the price and yield for these crops are: *Independent, Somewhat Negatively Correlated, or Highly Negatively Correlated?*

Independent

Describe: Prices are influenced by markets, relationships between the buyer and seller, varietal differences, quality judgments by the buyer, etc. more than by supply.

44. On a scale from one to five, where one is "strongly disagree" and five is "strongly agree," provide your reaction to the following statement: "In this region, producers of these crops are financially able to self-insure against production losses." Where 1 is strongly agree and 5 is strongly disagree.

Between 3 and 4, depending on the producer.

Describe: In this region, producers are a highly variable group, both in their financial sophistication and in their fiscal resources. The least wealthy and wealthiest producers are less risk-averse and prepared to deal with the consequences of a significant loss. In the case of the least wealthy producers, alternative revenue sources were the most commonly identified strategy; the wealthier producers often self-insure as financial decision.

45. For a typical grower of these crops, approximately what percentage of the total farm revenue would be attributable to these crops?

50 - 100 %, although the concept of typical is misleading in this industry. Each operation is unique.

46. What other commodities would typically* be produced on a farm that produces these commodities? What is the correlation between revenue from these other commodities and the revenue from these commodities? For correlation use a scale of one to five, where 1 is

“strongly negatively correlated,” 2 is “negatively correlated,” 3 “independent,” 4 is “positively correlated,” and 5 is “strongly positively correlated.”

*Typically is an inappropriate concept for production of nursery crops in this region by this cohort of producers.

N/A

47. In this region, approximately what percentage of the total production of these crops is produced by part-time farmers who have full-time employment off the farm?

Based on testimony, approximately 25 to 35%.

48. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement: “In this region, producers of these crops attempt to manage production risk by spreading their production over several geographic locations.”

2

Describe: Few producers are geographically diversified within the region. The smaller producers are less likely to have any geographic diversity.

49. In this region, what private-sector insurance products (if any) are currently available for these crops?

List all: It is possible to insure some of the perennial crop stock against fire through private contract, although such insurance is neither a standard product nor generally marketed.

Private freeze insurance is available as is private named peril insurance for trees(<http://www.liveassetinsurance.com/index.htm>).

50. Characterize how agricultural lenders in this region view the available RMA-facilitated insurance products for these crops (using Unfavorable, Indifferent, or Favorable). “Unfavorable” implies that lenders actually discourage borrowers from purchasing the product while “favorable” implies that lenders strongly encourage and often require borrowers to purchase the product. If multiple insurance products are offered, answer for each product.

Describe: The insurance is viewed favorably by lenders.

The importance of agriculture in the region and the success of agricultural operations have had a substantial effect on the general attitude of lenders.

51. On a scale from one to five, where one is very high and five is very low, assess the sufficiency of non-insurance coping mechanisms for producers of these crops in this region. Where 1 is highly sufficient and 5 is highly insufficient.

2 to 3

Risk Classification

52. On a scale from one to five, where one is strongly disagree and five is strongly agree, provide your reaction to the following statement: “In this region, no producers of these crops are really any more or less risky than any others. They all face about the same risk of loss.”
Where 1 is strongly disagree and 5 is strongly agree

2

Describe: Producers with a greater range of types and of varieties within types have less risk of substantial losses. Maintenance practices can influence the ability of the nursery crops to tolerate perils.

53. In this region, for those who are currently not insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

54. In this region, for those who currently are insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

55. For this region, to what extent does the system used to establish the guarantee (~~e.g., APH yield or expected revenue~~) for this crop match the true value of the production at risk? An answer of one indicates that the system used to establish the guarantee does a very poor job of matching the true value of the production at risk. An answer of five indicates that the system used to establish the guarantee does a very good job of matching the true value of the production at risk.

Producers report the value of their production is often underestimated by the inventory system.

56. On a scale from one to five, where one is very low and five is very high, assess the effectiveness of existing RMA-facilitated insurance products in accurately classifying

potential policyholders according to their loss exposure (i.e., higher risk growers pay higher premiums while lower risk growers pay lower premiums). Where 1 is very low and 5 is very high.

3 to 4, the producers have different levels of sophistication in their operations. The premiums do not reflect these differences, but the differences are less extreme than in the Northeast and southeastern regions.

Moral Hazard and Monitoring

57. ~~Yield variation~~ [Inventory loss] can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated crop insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product

4.

58. To the extent that management affects ~~yield loss~~ risk exposure, how difficult is it to monitor the insured’s behavior?

Difficult

Explain: Since the indemnities are triggered by weather events, the losses that are purely tied to management practices are generally obvious. However, a weak nursery plant is less likely to survive a weather peril. Consequently, these multifactorial losses are more difficult to adjust.

59. Quality variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product. Where 1 is very low and 5 is very high

N/A. Quality standards do not apply to nursery inventory in the sense they do to a yield-based crop insurance.

60. To the extent that management affects quality loss risk exposure, how difficult is it to monitor the insured’s behavior?

N/A Quality standards do not apply to nursery inventory in the sense they do to yield-based crop insurance.

61. On a scale from one to five, where one is very large and five is very small, assess the extent of moral hazard problems with existing RMA-facilitated insurance products for this crop.

1 to 2

Problems Affecting Insurance Participation

62. Have significant problems occurred (either past or current) with policy provisions on [the] existing RMA-facilitated insurance products for the crop? If multiple insurance products are offered, answer for each product. Yes , No

63. If the answer to the previous question is no, go to next question. If yes, for each significant problem:

a. Briefly describe the problem.

This is an extremely complex insurance product.

b. What has been the impact of the problem (e.g., high loss ratios, reduced demand, etc.)?

The complexity has led some insureds to believe they had coverage they did not have. Together with the complexity, this has reduced demand.

c. Have policy provisions since been changed to adequately address the problem?

While the provisions have been changed several times, the issues have not been resolved to the satisfaction of producers.

d. If policy provisions have not been changed, what changes in policy provisions do you think would increase insurance demand for this crop?

Everyone who expressed an opinion, with the exception of one agent, would like to see the policy simplified.

64. In this region, do reinsured companies have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

The administrative costs of the insurance are very high. The premiums are modest. The reinsured companies in many cases would be happy not to write a nursery policy.

65. In this region, do agents have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

66. List any perils that concern growers of these crops but are not covered by existing RMA-facilitated insurance products (e.g., business interruption due to unavailability of irrigation water, disease quarantines, etc.). For each peril assess the extent of growers' concerns about this peril on a scale from one to five where one is minor concern and five is major concern.

None identified in this region.

67. Briefly describe the potential for insuring these currently uninsured perils? In answering this, consider the following questions:

Can hidden action/moral hazard and classification/adverse selection problems be avoided?

Can clearly stated policy provisions be developed and accurate premium rates established?

N/A.

68. On a scale from one to five, where one is very high and five is very low, assess the likelihood that problems affecting participation can be adequately addressed by product or policy modifications.

1

This program could be made attractive to many producers resulting in increased participation, especially at buy-up levels.

Exhibit 6

Southwestern States

Program Evaluation Diagnostic Questions – Nursery Crop Insurance Program

Region	Southwestern States
Typical Crops	Nursery plants in various sizes, including annuals, biennials, herbaceous perennials, and woody species of a wide range of types.
Market	fresh <input type="checkbox"/> , processed <input type="checkbox"/> , other <input checked="" type="checkbox"/> marketed primarily as containerized plants, with some balled and burlap plants.

Background Information

Production Processes

Annuals

1. Are the crops planted multiple times during a crop production year? If yes, explain:
 Yes , No

Most are planted to address orders. Some of the annual nursery plants are planted multiple times; others are planted just once a year.

2. For a single planting, are the crops harvested multiple times during a crop production year? If yes, explain: Yes , No

Most are harvested to fulfill orders. Depending on those orders, some of the annual nursery plants are harvested multiple times; others are harvested just once a year.

3. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as double crop, fallow, irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Each operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production.

Biennials

4. Are the crops harvested multiple times during a crop production year? Yes , No

Biennial nursery plants are generally harvested in the spring of the second year; though producers of liners manage the biennials as though they were annuals.

5. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each biennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production.

Perennials

6. Are the crops harvested multiple times during a crop production year? If yes, explain:
Yes , No

Some of the perennial nursery plants are harvested multiple times; others are harvested just once a year, still others are treated like annual plants (either (a) grown for a year and then marketed or (b) purchased as liners or container plants and repotted and grown for a year.

7. Are the crops alternate bearing? Yes , No

This question is not relevant for the Nursery Crop Insurance Program. The insured crop is the plant itself, not the fruit.

8. Describe distinguishing characteristics of prevailing production system(s) for these crops (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

As with the annuals, each perennial operation is unique. The producers have developed niche markets for species, practice, and size. In general, container plants are maintained in close proximity to one another with irrigation, frequent fertilization, and pest management. Turnover is influenced by markets more than management practices. Soil mixes are proprietary and the soil is sold with the production. Plants are generally potted up if they are not sold. Eventually, if a plant becomes too large for the market it is destroyed.

Field grown plants are less common in this production region. When they are grown, they are grown in single or double rows, generally with irrigation. Growth is supported by frequent fertilization, and pest management. Turnover in many cases is influenced as much by markets as by management practices. Palms are harvested as bare root or balled and burlapped plants. Because there is less tendency for the perennials in this region to enter dormancy, there are few other plants that can be handled as bare root harvests. Eventually if plants can not be sold they become too large for the market and are destroyed.

9. What is the economic life of the capital stock (trees, vines, etc.)?

Varies by species and practice.

10. Over its economic life, what is the likelihood that ten percent or more of the capital stock would be lost due to natural causes? Describe:

<1% (*probability of loss*).

The capital stock is the crop. The losses of capital stock may not involve loss of entire plants, but instead loss of portions of the plants to extreme weather. The effect of such partial losses in the short run is similar to the effect of losing whole plants, recovery is sometimes possible, depending on the nature of the damage.

11. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it starts producing saleable output?

Varies with the species. Generally more than a year.

12. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it is at peak production?

Varies with the species. Generally several years.

Nursery

13. Describe distinguishing characteristics of prevailing production system(s) for nursery crops in this region. Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

Nurseries in the region grow plants from seed, from cuttings, and from meristem cloning. Nurseries also buy plants produced by these three processes. Some of the nursery stock used by nurseries is locally produced; some comes from remote tropical locations. Markets determine the type and practice, however most producers have garnered a particular market niche and work to maximize their share within the niche.

Marketing

14. Describe typical marketing channels and/or contracting structures for these crops.

The marketing channels for nursery production vary by operation, and by variety. Many producers in the region produce limited types maintained under one practice. Depending on the market, production may be sold to a single buyer or multiple buyers. Much of the production is initiated under contract.

15. In this region are there critical time periods (i.e., marketing windows) when producers hope to market these crops? If so, describe.

Yes. But the windows for sales from the Southwest are wider, especially for foliage and flower plants in containers.

16. Within the marketing channels and/or contracting structures mentioned above describe how quality variations are handled (e.g., off-grade apples in a fresh market system may be processed for juice).

Generally off grade production is not saleable. The costs of rehabilitation relative to the value of the crop generally preclude such actions.

In this region, do federal supply control marketing orders exist for production of these crops?
Yes , No

Describe:

In this region, do state quality marketing orders exist for production of these crops?
Yes , No

Describe:

RMA-Facilitated Insurance Products

17. In this region, what RMA-facilitated insurance products are currently available for these crops? List all:

The Nursery Crop Insurance policy and the AGR policies (where available) are the RMA-facilitated insurance product currently available for these crops.

The questions in this section (20 through 26) are not relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. There is no yield of nursery production. Consequently, this section has been left blank.

Yield Risk

18. In this region what are examples of crops with very **low relative** yield risk? Relative risk is used to adjust absolute magnitudes that vary across crops to a relative level to facilitate comparability (roughly, a measure of variation divided by the mean level).

19. In this region what are examples of crops with very **high relative** yield risk?

20. Are these crops exposed to catastrophic risks that would reduce yields by 50 percent or more? Yes , No

21. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic losses to occur?

Description

Years (or crop cycles) out of 25

22. Characterize yield risk for these crops *ignoring the catastrophic yield risk(s) described earlier*. On a scale from one to five, if the low relative yield risk crops identified earlier were one, and the high relative yield risk crops identified earlier were five, what number would you assign to the non-catastrophic yield risk associated with these crops in this region? Where 1 is very low risk and 5 is very high risk.

23. In this region, do producers tend to experience multiple-year sequences of good yields or bad yields for these crops? If yes, describe what causes these multiple-year sequences.
Yes , No .

24. On a scale from one to five, where one is very low yield risk and five is very high yield risk, provide an overall assessment of yield risk faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

The questions in this section (27 through 32) are only marginally relevant to the Nursery Crop Insurance Program. The insurance is an inventory-based program not a yield-based program. The nursery production has no quality in the sense a harvested crop has quality. Consequently, the questions in this section have been answered to reflect the effects on the “quality” of the inventory rather than any effects on quality of a harvestable product.

Quality Risk

25. In this region what are examples of crops with very **low** quality risk?

N/A.

26. In this region what are examples of crops with very **high** quality risk?

N/A.

27. Are the crops exposed to catastrophic quality risks that would reduce the ~~average price received~~ [marketability] by 20 percent or more? Yes , No

28. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic quality losses to occur?

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>
Wildfire	0 to 1
Excess Precipitation	0 to 2
But generally affecting a small portion of the crop in the region.	

29. We now want to characterize quality risk for these crops ignoring the catastrophic quality risk(s) described earlier. On a scale from one to five, if the crops with very low risk of quality problems identified earlier were one, and the crops with very high risk of quality problems identified earlier were five, what number would you assign to the quality risk associated with these crops in this region? Where 1 is very low quality risk and 5 is very high quality risk.

This question is not relevant to nursery crop insurance.

30. On a scale from one to five, if one is very low ~~quality~~ [marketability] risk and five is very high risk, provide an overall assessment of quality risk faced by producers of these crops in this region. Where 1 is very low ~~quality~~ survival risk and 5 is very high ~~quality~~ survival risk.

1

The questions in this section (33 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period.

Price Risk

31. In this region what are examples of crops with very **low relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A.

32. In this region what are examples of crops with very **high relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

N/A.

33. On a scale from one to five, if the low price risk crops identified earlier were one and the high price risk crops identified earlier were five, what number would you assign to the relative price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is low price risk crop and 5 is high price risk crop.

N/A.

34. In this region, do producers tend to experience multiple-year sequences of high prices or low prices for these crops? Yes , No . If yes, describe.

N/A.

35. On a scale from one to five, where one is very low price risk and five is very high price risk [of loss of value], provide an overall assessment of price risk (within the production cycle) faced by producers of these crops in this region? Where 1 is very low price risk and 5 is very high price risk.

N/A.

The questions in this section (36 through 37) are not relevant to the Nursery Crop Insurance Program. The insured crop under the program is the nursery inventory. The inventory values are established at the onset of the insurance period. Consequently, this section has been left blank.

Other Sources of Revenue Risk

36. For this region, describe other factors that affect revenue risk for these crops (e.g., prevented planting).
37. On a scale from one to five, where one is very low risk and five is very high risk, provide an overall assessment of risk sources other than yield, quality, and price risks faced by producers of these crops in this region. Where 1 is very low risk and 5 is very high risk.

Sufficient Non-Insurance Coping Mechanisms

38. On a scale from one to five, where one is very low and five is very high, assess the extent to which producers of these crops in this region use risk-reducing inputs as a substitute for crop insurance. Where 1 is very low and 5 is very high.

4

39. Are government crop programs (e.g., marketing loans and counter-cyclical payments) available for these crops? Yes , No

Describe:

Only some of the questions in this section (40 through 53) are relevant to the FFT (Pilot) Insurance Program. The relevant questions have been answered.

40. In this region, is there a history of federal disaster payments for these crops? Yes , No

Describe: No information about such payments was discovered.

41. Approximately what percentage of the total production of these crops is under production contract with a first handler or processor?

Describe contracts: No information about this topic was discovered.

- a. Under the terms of a typical production contract for these crops, is the grower exposed to *production risk* (i.e., the grower must deliver on the contract even if production shortfalls occur)? Yes , No
- b. Under the terms of a typical production contract for these crops, is the grower exposed to quality risk (i.e., there are significant price penalties if the product does not meet the quality characteristics specified in the contract). Yes , No

Delivery may be refused based on quality.

- c. Under the terms of a typical production contract for these crops, is the grower exposed to price risk (i.e., prices for specific quality characteristics are not specified in the contract)? Yes , No

42. In this region, approximately what percentage of the total production of these crops is priced prior to harvest (may or may not be tied to a production contract)?

Describe: 100%. Harvest doesn't occur until a price agreement has been reached.

43. When corn farmers in the Midwest experience low (high) yields, they can often expect higher (lower) market prices (i.e., prices and yields are very negatively correlated). This moderates the revenue impacts of low yields. In contrast, for corn farmers in the Southeast there is very little relationship between their yields and market prices (i.e., prices and yields are independent). In this region the price and yield for these crops are: *Independent, Somewhat Negatively Correlated, or Highly Negatively Correlated?*

Independent

Describe: Prices are influenced by markets, relationships between the buyer and seller, varietal differences, quality judgments by the buyer, etc. more than by supply.

44. On a scale from one to five, where one is "strongly disagree" and five is "strongly agree," provide your reaction to the following statement: "In this region, producers of these crops are financially able to self-insure against production losses."

No information about this topic was discovered.

Describe: No information about this topic was discovered. However, the Contractor would expect producers to be a highly variable group, both in their financial sophistication and in their fiscal resources.

45. For a typical grower of these crops, approximately what percentage of the total farm revenue would be attributable to these crops?

No information about this topic was discovered.

46. What other commodities would typically* be produced on a farm that produces these commodities? What is the correlation between revenue from these other commodities and the revenue from these commodities? For correlation use a scale of one to five, where 1 is "strongly negatively correlated," 2 is "negatively correlated," 3 "independent," 4 is "positively correlated," and 5 is "strongly positively correlated."

*Typically is an inappropriate concept for production of nursery crops in this region by this cohort of producers.

N/A

47. In this region, approximately what percentage of the total production of these crops is produced by part-time farmers who have full-time employment off the farm?

No information about this topic was discovered.

48. On a scale from one to five, where one is “strongly disagree“ and five is “strongly agree,“ provide your reaction to the following statement: “In this region, producers of these crops attempt to manage production risk by spreading their production over several geographic locations.”

No information about this topic was discovered.

Describe: Some producers are geographically diversified within the region. This pattern is less characteristic of the smallest producers. This pattern is truer for producers whose primary income is from nursery crops and the very largest producers.

49. In this region, what private-sector insurance products (if any) are currently available for these crops?

List all: It is possible to insure some of the perennial crop stock against fire through private contract, although such insurance is neither a standard product nor generally marketed.

Private freeze insurance is available in the region.
Private named peril insurance for trees is available
(<http://www.liveassetinsurance.com/index.htm>).

50. Characterize how agricultural lenders in this region view the available RMA-facilitated insurance products for these crops (using Unfavorable, Indifferent, or Favorable). “Unfavorable” implies that lenders actually discourage borrowers from purchasing the product while “favorable” implies that lenders strongly encourage and often require borrowers to purchase the product. If multiple insurance products are offered, answer for each product.

Describe: No information about this topic was discovered.

The importance of agriculture in the region, and the success of agricultural enterprises would lead the Contractor to believe lenders would look favorably on crop insurance.

51. On a scale from one to five, where one is very high and five is very low, assess the sufficiency of non-insurance coping mechanisms for producers of these crops in this region. Where 1 is highly sufficient and 5 is highly insufficient.

Producers in the area seem less concerned about insuring agricultural risk than those in many regions.

Risk Classification

52. On a scale from one to five, where one is strongly disagree and five is strongly agree, provide your reaction to the following statement: “In this region, no producers of these crops are really any more or less risky than any others. They all face about the same risk of loss.”

1

Describe: Weather in the region is not particularly variable. Some producers have greater variety of types and of varieties within types, increasing their potential for losses resulting from weather perils, but decreasing the effects of these losses on the financial condition of the operation. Wildfires seem to be the only variable risk.

53. In this region, for those who are currently not insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

54. In this region, for those who currently are insured, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

About right.

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

55. For this region, to what extent does the system used to establish the guarantee (~~e.g., APH yield or expected revenue~~) for this crop match the true value of the production at risk? An answer of one indicates that the system used to establish the guarantee does a very poor job of matching the true value of the production at risk. An answer of five indicates that the system used to establish the guarantee does a very good job of matching the true value of the production at risk.

No information about this topic was discovered.

56. On a scale from one to five, where one is very low and five is very high, assess the effectiveness of existing RMA-facilitated insurance products in accurately classifying potential policyholders according to their loss exposure (i.e., higher risk growers pay higher premiums while lower risk growers pay lower premiums). Where 1 is very low and 5 is very high.

Because of the low variability of risks, accurately classifying potential policyholders according to their loss exposure is not an issue.

Moral Hazard and Monitoring

57. ~~Yield variation~~ [Inventory loss] can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated crop insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product, 4.

58. To the extent that management affects ~~yield loss~~ risk exposure, how difficult is it to monitor the insured’s behavior?

Not too Difficult.

Explain: Since the indemnities are triggered by specific events, the losses that are purely tied to management practices are generally obvious.

59. Quality variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated insurance product for these crops on a scale from one to five, where one implies that the potential for gaming is low and five implies that the potential for gaming is high. If multiple insurance products are offered, answer for each product. Where 1 is very low and 5 is very high

N/A. Quality standards do not apply to nursery inventory in the sense they do to a yield-based crop insurance.

60. To the extent that management affects quality loss risk exposure, how difficult is it to monitor the insured’s behavior?

N/A

Quality standards do not apply to nursery inventory in the sense they do to yield-based crop insurance.

61. On a scale from one to five, where one is very large and five is very small, assess the extent of moral hazard problems with existing RMA-facilitated insurance products for this crop.

1

Problems Affecting Insurance Participation

62. Have significant problems occurred (either past or current) with policy provisions on [the] existing RMA-facilitated insurance products for the crop? If multiple insurance products are

offered, answer for each product. Yes , No

63. If the answer to the previous question is no, go to next question. If yes, for each significant problem:

No information on this topic was discovered.

a. Briefly describe the problem.

N/A.

b. What has been the impact of the problem (e.g., high loss ratios, reduced demand, etc.)?

N/A.

c. Have policy provisions since been changed to adequately address the problem?

N/A.

d. If policy provisions have not been changed, what changes in policy provisions do you think would increase insurance demand for this crop?

Everyone who expressed an opinion, would like to see the policy simplified.

64. In this region, do reinsured companies have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

The administrative costs of the insurance are very high. The premiums are modest. The reinsured companies in many cases would be happy not to write a nursery policy.

65. In this region, do agents have sufficient incentives to aggressively market new or existing RMA-facilitated insurance products for these crops? Yes , No

If yes, go to next question. If no, explain.

Selling nursery insurance in California is extremely difficult. Most producers do not want to buy the insurance.

66. List any perils that concern growers of these crops but are not covered by existing RMA-facilitated insurance products (e.g., business interruption due to unavailability of irrigation water, disease quarantines, etc.). For each peril assess the extent of growers' concerns about this peril on a scale from one to five where one is minor concern and five is major concern.

Labor shortage: 5

67. Briefly describe the potential for insuring these currently uninsured perils? In answering this, consider the following questions:

Can hidden action/moral hazard and classification/adverse selection problems be avoided?

Can clearly stated policy provisions be developed and accurate premium rates established?

This is not an insurable peril.

68. On a scale from one to five, where one is very high and five is very low, assess the likelihood that problems affecting participation can be adequately addressed by product or policy modifications.

4

It will be difficult to make this program attractive to producers in this region.

Appendix B

Stakeholder Input

Exhibit 1. General Listening Session Agenda

Exhibit 2. Stakeholder Comments

Exhibit 3. Sources of Producer Input (by County)

Exhibit 1. General Listening Session Agenda

Nursery Crop Insurance Program Listening Session

Agenda

- Introductions
 - Watts and Associates, Inc.
 - USDA Risk Management Agency
 - Attendees
- Purpose
 - Gather impressions of the program
 - Learn about possible improvements
 - W&A to make recommendation to USDA about the program
- Background
 - FCIC Insurance Evaluation Contracts
 - Brief History of Nursery Crop Insurance
- Feedback
 - Use of Insurance
 - Experiences with Insurance
 - Surprises
 - Potential Improvements
 - Effects of Changes

Questions

Exhibit 2. Stakeholder Comments (sorted by theme)

Stakeholder Listening Session Comments

Stakeholder listening session comments are cataloged here to address the requirements of the Program Evaluation Handbook (FCIC-22010 (09-2005) (the Handbook). Section 3.B.(10) of the Handbook addresses the requirement to document listening session input and lists themes for a catalog of listening session “observations.” Observations the Contractor deduced from the input documented in this appendix are incorporated into the main body of the report. This appendix is incorporated to organize the specific stakeholder comments categorically according to the themes listed in Section 3.B.(10) of the Handbook. Some comments made by stakeholders address more than one topic in the Handbook list. To assure all the relevant comments are provided for each of the listed topics, the Contractor has repeated each comment under all the topics for which it is relevant. Comments made by producers are identified by the notation *(p)*. Comments made by insurance industry stakeholders are identified by the notation *(i)*. Comments made by stakeholders who represent producer associations are identified by the notation *(a)*. If the affiliation of a stakeholder could not be identified, the comment is annotated with a *(u)*.

Do producers have knowledge of the program? (Here the Contractor has included comments showing stakeholders had knowledge of details of the program)

It’s so onerous in trying to estimate what your crop [is going to be] *(p)*

A lot of people in this room sell every single day and plant every single week that is a huge problem because you are asking you to estimate and I can’t estimate. And God forbid there is a claim and they come back and they want to see exactly what it was at such and such a date and they want to see all the plantings subsequent. So it makes it extremely to adhere to the letter of the insurance policy and it makes really no sense. *(p)*

It makes it almost impossible to stay on top of it with spending, you know, spending 10 percent or 15 percent of your time trying to manage your insurance policy, which is asinine. *(p)*

Growers have a heck of a time trying to figure out I don’t want to underinsure or overinsure. *(p)*

Simplify make it easy. *(p)*

I think the problem with this 10 percent rule is what happened is the policy has created an enormous fear among growers. *(u)*

Went from a 6 dollar plant and potted it into the next pot size and now it is a 25 dollar plant and that also skews are values up and we initially may have been in that 10 percent tolerance but now all the sudden because we potted in the next larger pot size we blown out of that 10 percent. *(p)*

There needs to be more than 2 bumps a year that isn’t sufficient *(p)*

I am paying money and I am exposed to something I can't even control because of a wording. (p)

[People] are looking to work the program within a way that their nurseries actually work (i)

Push this thing a little later would take some of the pressure off of us. (p)

I was asked to provide a list of everybody I purchased plants from and everybody I sold them to. I really don't think this is any of the governments business. (p)

Have to deal with that dreaded DataScope program once or twice a year. (i)

If they have plants of the same pot size but in different forms because they are played with it such an important part of the insurance when you have a claim, they will put those different prices in there which may be under the allowable price and they are going to pay a premium for each of those but when the claim occurs they are going to pay the lowest possible price. So the government is allowing them to pay a higher premium when in fact they know they aren't going to pay that out. (u)

We have heard a lot about the 30 day waiting period because it is a big problem. (p)

At one point it was give us a value that you want to insure (p)

The nursery crop insurance tool is the primary risk management tool for the growers in Florida. The crop insurance policy is needed for all those risk management reasons as well as needed to provide for the expectations for those financial institutions that require crop insurance. (a)

At times the government treats the nursery inventory as a crop. (a)

Always use the report price on the price list at the time of inventory. (a)

30 days later that grower is already potentially out of compliance on the very first day. (a)

The current policy does not allow any mechanism to adjust reported inventory downward in value. (a)

The plant inventory reporting software DataScope does not have a method to report multis as a different value than singles. (a)

In some zones, overhead irrigation is required. Overhead irrigation for large containerized trees is impractical because of the size. It is also impractical to lay them down in anticipation of a storm. (a)

Allow inventory revisions throughout the year. (a)

Omitted plants, it is very challenging to add them mid year. (a)

From the beginning it is obvious they [the government] have tried to pigeonhole the nursery crop insurance program into what it requires for row crops. *(i)*

Why does every single thing on the nursery need to be insured? *(i)*

The diversification of the nursery industry is so dynamic that it's completely impossible...to go through this policy. *(p)*

There is no other insurance that I know of that you can go from 60 to 75 percent and your premiums triple. *(p)*

The guy that spends more money he doesn't get a break on his insurance but the guy who just sits there and nickels and dimes it and just throws stuff on the ground and all the sudden it turns around and gets a flood he gets a claim [regarding flooding]. *(p)*

People are just getting crop insurance as CAT coverage just to make sure they are entitled to SURE payments. *(i)*

Is there a better way to communicate with DataScape? *(i)*

[CAT coverage] is only designed to qualify for disaster payments. *(p)*

For the better growers is it would be real simple is maybe give 3 to 10 percent discount in the first year with no claims, 10 percent second additional and additional 10 percent third year.

Omitted plants have an inventory value and pay a premium but don't get any coverage. *(i)*

It would make sense for different reporting dates. *(i)*

Our policy should be put in on the end of October. *(p)*

They were saying every tree had a value whether it be for firewood or for mulch. *(p)*

It seems like they got some stipulations in the policy that relies to row insurance instead of the nursery. *(p)*

If you got a three year rotation and a one point I you can lose a whole year's crop and not get paid a penny because I don't have a 51 percent loss. *(p)*

If we cut that peach tree off until it gets to 12 inches we have no coverage. *(p)*

This is sort of a one size fits all policy. *(p)*

We can't insure separate farms unless they are in separate counties. *(p)*

Why can't you buy a separate policy for a farm that is 57 miles away? *(p)*

Unfortunately nurseries are treated like a mono-crop like wheat, corn where there would have to be a complete loss and that's just not realistic. *(a)*

It takes hours to input that inventory into DataScape. Then you turn around and then his inventory has totally changed. *(i)*

Eliminate the DataScape. *(i)*

It's too complicated and really the protection is not there. *(i)*

It [DataScape] is just more pressure than I can't stand. *(i)*

Could we not have Special Provisions for unit structure on a state or county basis in the nursery policy? *(i)*

I think my problem...you are asking us to project what our crop is going to be for the next season with a 10 percent tolerance. How am I supposed to know exactly what my inventory is going to be? *(p)*

If we miss it by 30 days it creates problems. *(p)*

There is no insurance available for that at all [referring to once the product has left the field]. *(p)*

It is like you are almost done inventory twice [regarding DataScape]. *(p)*

Why did producers elected or not elect use the program?

It's so onerous in trying to estimate what your crop [is going to be] *(p)*

I think the problem with this 10 percent rule is what happened is the policy has created an enormous fear among growers. *(u)*

There needs to be more than 2 bumps a year that isn't sufficient *(p)*

At one point I am at 60 days exposed to uninsured anywhere from 3 to 6 million dollars...how can that work? *(p)*

I am paying money and I am exposed to something I can't even control because of a wording. *(p)*

How do I know what the age of plant, nobody knows? *(p)*

I was asked to provide a list of everybody I purchased plants from and everybody I sold them to. I really don't think this is any of the governments business. *(p)*

They are so frustrated they just give up [insurance]. (i)

Have to deal with that dreaded DataScape program once or twice a year. (i)

The nursery crop insurance tool is the primary risk management tool for the growers in Florida. (a)

In some zones, overhead irrigation is required. Overhead irrigation for large containerized trees is impractical because of the size. It is also impractical to lay them down in anticipation of a storm. (a)

I would have to think the word “simplify” is a very elegant word (a)

From the beginning it is obvious they [the government] have tried to pigeonhole the nursery crop insurance program into what it requires for row crops. (i)

There is no other insurance that I know of that you can go from 60 to 75 percent and your premiums triple. (p)

They don't have faith in this no more (p)

This is sort of a one size fits all policy. (p)

Unfortunately nurseries are treated like a mono-crop like wheat, corn where there would have to be a complete loss and that's just not realistic. (a)

It's too complicated and really the protection is not there. (i)

It [DataScape] is just more pressure than I can't stand. (i)

I think my problem...you are asking us to project what our crop is going to be for the next season with a 10 percent tolerance. How am I supposed to know exactly what my inventory is going to be? (p)

I think part of the problem is education. (p)

It is like you are almost doing inventory twice [regarding DataScape]. (p)

Did the program meet the growers' risk management needs?

A lot of people in this room sell every single day and plant every single week that is a huge problem because you are asking you to estimate and I can't estimate. And God forbid there is a claim and they come back and they want to see exactly what it was at such and such a date and they want to see all the plantings subsequent. So it makes it extremely to adhere to the letter of the insurance policy and it makes really no sense. (p)

It makes it almost impossible to stay on top of it with spending, you know, spending 10 percent or 15 percent of your time trying to manage your insurance policy, which is asinine. (p)

I think the problem with this 10 percent rule is what happened is the policy has created an enormous fear among growers. (u)

This isn't a 1000 acres of wheat (p)

Went from a 6 dollar plant and potted it into the next pot size and now it is a 25 dollar plant and that also skews are values up and we initially may have been in that 10 percent tolerance but now all the sudden because we potted in the next larger pot size we blown out of that 10 percent. (p)

There needs to be more than 2 bumps a year that isn't sufficient (p)

At one point I am at 60 days exposed to uninsured anywhere from 3 to 6 million dollars...how can that work? (p)

I am paying money and I am exposed to something I can't even control because of a wording. (p)

Push this thing a little later would take some of the pressure off of us. (p)

How do I know what the age of plant, nobody knows? (p)

I was asked to provide a list of everybody I purchased plants from and everybody I sold them to. I really don't think this is any of the governments business. (p)

They are so frustrated they just give up [insurance]. (i)

Have to deal with that dreaded DataScape program once or twice a year. (i)

If they have plants of the same pot size but in different forms because they are played with it such an important part of the insurance when you have a claim, they will put those different prices in there which may be under the allowable price and they are going to pay a premium for each of those but when the claim occurs they are going to pay the lowest possible price. So the government is allowing that to pay a higher premium when in fact they know they aren't to go pay that out. (u)

This is deterring a nursery to think about expanding. (p)

We have heard a lot about the 30 day waiting period because it is a big problem. (p)

The nursery crop insurance tool is the primary risk management tool for the growers in Florida. The crop insurance policy is needed for all those risk management reasons as

well as needed to provide for the expectations for those financial institutions that require crop insurance. (a)

At times the government treats the nursery inventory as a crop. (a)

The current policy does not allow any mechanism to adjust reported inventory downward in value. (a)

The plant inventory reporting software DataScape does not have a method to report multis as a different value than singles. (a)

In some zones, overhead irrigation is required. Overhead irrigation for large containerized trees is impractical because of the size. It is also impractical to lay them down in anticipation of a storm. (a)

Allow inventory revisions throughout the year. (a)

Omitted plants, it is very challenging to add them mid year. (a)

I would have to think the word “simplify” is a very elegant word (a)

From the beginning it is obvious they [the government] have tried to pigeonhole the nursery crop insurance program into what it requires for row crops. (i)

Why does every single thing on the nursery need to be insured? (i)

The diversification of the nursery industry is so dynamic that it’s completely impossible...to go through this policy. (p)

People are just getting crop insurance as CAT coverage just to make sure they are entitled to SURE payments. (i)

Is there a better way to communicate with DataScape? (i)

It [CAT coverage] is only designed to qualify for disaster payments. (p)

Omitted plants have an inventory value and pay a premium but don’t get any coverage. (i)

If we had something like the AGR program it might actually work. (i)

It would make sense for different reporting dates. (i)

Our policy should be put in on the end of October. (p)

They were saying every tree had a value whether it be for firewood or for mulch. (p)

It seems like they got some stipulations in the policy that relies to row insurance instead of the nursery. (p)

If you got a three year rotation and a one point I you can lose a whole year's crop and not get paid a penny because I don't have a 51 percent loss. (p)

Separating this thing out by individual varieties and by individual year classes for it to be worth anything really to me. (p)

This is sort of a one size fits all policy. (p)

We can't insure separate farms unless they are in separate counties. (p)

Why can't you buy a separate policy for a farm that is 57 miles away? (p)

They don't care if we plant a million dollars of seed in the ground, and we don't get coverage, why? (p)

Unfortunately nurseries are treated like a mono-crop like wheat, corn where there would have to be a complete loss and that's just not realistic. (a)

It takes hours to input that inventory into DataScape. Then you turn around and then his inventory has totally changed. (i)

It's too complicated and really the protection is not there. (i)

If we could get unit structure [change to an age production unit structure]. (i)

It [DataScape] is just more pressure than I can't stand. (i)

Could we not have Special Provisions for unit structure on a state or county basis in the nursery policy? (i)

We also work with some groups with controlled varieties...is there a way to get these trees covered? (p)

We would like to see is the opportunity to buy specific insurance for a specific peril. (p)

There is no insurance available for that at all [referring to once the product has left the field]. (p)

I think part of the problem is education. (p)

How did the program affect the growers?

It's so onerous in trying to estimate what your crop [is going to be] (p)

At one point I am at 60 days exposed to uninsured anywhere from 3 to 6 million dollars...how can that work? (p)

I am paying money and I am exposed to something I can't even control because of a wording. (p)

How do I know what the age of plant, nobody knows? (p)

I was asked to provide a list of everybody I purchased plants from and everybody I sold them to. I really don't think this is any of the governments business. (p)

They are so frustrated they just give up [insurance]. (i)

Have to deal with that dreaded DataScope program once or twice a year. (i)

This is deterring a nursery to think about expanding. (p)

Bottom line is the growers want a policy that makes business sense for their business operation. (a)

I would have to think the word "simplify" is a very elegant word (a)

They don't have faith in this no more (p)

They don't care if we plant a million dollars of seed in the ground, and we don't get coverage, why? (p)

I had a team of adjusters there and I had two college professors there on the farm, [... but] the adjusters wouldn't listen to the men with the degrees. (p)

It's too complicated and really the protection is not there. (i)

I think my problem...you are asking us to project what our crop is going to be for the next season with a 10 percent tolerance. How am I supposed to know exactly what my inventory is going to be? (p)

What effect did the program have on the market?

The Contractor did not identify comments that addressed Nursery Program impacts on nursery markets, except perhaps, "This is deterring a nursery to think about expanding." (p)

Impact of program requirements on existing marketing, buyer purchasing methods and claim settlement practices (The intention of this aggregate language is not clear. Consequently the Contractor has collected comments that address both marketing and purchasing of insurance as well as claims settlement practices.)

It's so onerous in trying to estimate what your crop [is going to be] (p)

A lot of people in this room sell every single day and plant every single week that is a huge problem because you are asking you to estimate and I can't estimate. And God forbid there is a claim and they come back and they want to see exactly what it was at such and such a date and they want to see all the plantings subsequent. So it makes it extremely to adhere to the letter of the insurance policy and it makes really no sense. (p)

It makes it almost impossible to stay on top of it with spending, you know, spending 10 percent or 15 percent of your time trying to manage your insurance policy, which is asinine. (p)

Growers have a heck of a time trying to figure out I don't want to underinsure or to overinsure. (p)

I think the problem with this 10 percent rule is what happened is the policy has created an enormous fear among growers. (u)

Went from a 6 dollar plant and potted it into the next pot size and now it is a 25 dollar plant and that also skews are values up and we initially may have been in that 10 percent tolerance but now all the sudden because we potted in the next larger pot size we blown out of that 10 percent. (p)

There needs to be more than 2 bumps a year that isn't sufficient (p)

At one point I am at 60 days exposed to uninsured anywhere from 3 to 6 million dollars...how can that work? (p)

I am paying money and I am exposed to something I can't even control because of a wording. (p)

[People] are looking to work the program within a way that their nurseries actually work (i)

Push this thing a little later would take some of the pressure off of us. (p)

How do I know what the age of plant, nobody knows? (p)

I was asked to provide a list of everybody I purchased plants from and everybody I sold them to. I really don't think this is any of the governments business. (p)

They are so frustrated they just give up [insurance]. (i)

Have to deal with that dreaded DataScope program once or twice a year. (i)

This is deterring a nursery to think about expanding. (p)

We have heard a lot about the 30 day waiting period because it is a big problem. (p)

The current policy does not allow any mechanism to adjust reported inventory downward in value. (a)

The plant inventory reporting software DataScope does not have a method to report multis as a different value than singles. (a)

Omitted plants, it is very challenging to add them mid year. (a)

I would have to think the word “simplify” is a very elegant word (a)

Why does every single thing on the nursery need to be insured? (i)

The diversification of the nursery industry is so dynamic that it’s completely impossible...to go through this policy. (p)

There is no other insurance that I know of that you can go from 60 to 75 percent and your premiums triple. (p)

In January we had a slight freeze...mine didn’t show up damaged until June. (p)

They were saying every tree had a value whether it be for firewood or for mulch. (p)

If you got a cicada problem I guarantee you aren’t going to see those damages within 72 hours. (p)

When you get someone [an adjuster] out there they don’t have enough experience. (p)

If you got a three year rotation and a one point I you can lose a whole year’s crop and not get paid a penny because I don’t have a 51 percent loss. (p)

If we cut that peach tree off until it gets to 12 inches we have no coverage. (p)

I had a team of adjusters there and I had two college professors there on the farm, and I wanted to get them a bottle of water between rounds, because the adjusters wouldn’t listen to the men with the degrees. (p)

Unfortunately nurseries are treated like a mono-crop like wheat, corn where there would have to be a complete loss and that’s just not realistic. (a)

We know [weather damage] within 4 months (p)

I don’t know an adjuster out there that has a nursery background. (i)

Get more horticulturists involved in the nursery industry. (p)

I think my problem...you are asking us to project what our crop is going to be for the next season with a 10 percent tolerance. How am I supposed to know exactly what my inventory is going to be? (p)

If we miss it by 30 days it creates problems. (p)

I have had a lot of nurseries change because of the drought. (i)

We would like to see is the opportunity to buy specific insurance for a specific peril. (p)

Treat it like property type insurance with a co-insurance...rather than voiding the policy...you will have a penalty. (p)

There is no insurance available for that at all [referring to once the product has left the field]. (p)

Looking at one of those individual groups have a policy based on a particular characteristic of each one of those individual groups. (p)

I think part of the problem is education. (p)

It is like you are almost done inventory twice [regarding DataScape]. (p)

For roses we can have a loss in March...then in June or July when the adjuster shows up the roses look great. (p)

Understanding of the policy terms or conditions

An understanding of the policy terms and conditions is implicit in most of the comments recorded above. There were no comments that explicitly addressed understanding policy terms and conditions, although several addressed the logic of these terms and conditions.

Understanding of the loss notification requirements and indemnity calculations

There were no comments that explicitly addressed understanding the loss notification requirements and indemnity calculations, except perhaps, "If you got a cicada problem I guarantee you aren't going to see those damages within 72 hours." (p)

Understanding of the underwriting guidelines

It's so onerous in trying to estimate what your crop [is going to be] (p)

A lot of people in this room sell every single day and plant every single week that is a huge problem because you are asking you to estimate and I can't estimate. And God forbid there is a claim and they come back and they want to see exactly what it was at such and such a date and they want to see all the plantings subsequent. So it makes it extremely to adhere to the letter of the insurance policy and it makes really no sense. (p)

It makes it almost impossible to stay on top of it with spending, you know, spending 10 percent or 15 percent of your time trying to manage your insurance policy, which is asinine. (p)

Growers have a heck of a time trying to figure out I don't want to underinsure or to overinsure. (p)

I think the problem with this 10 percent rule is what happened is the policy has created an enormous fear among growers. (u)

Went from a 6 dollar plant and potted it into the next pot size and now it is a 25 dollar plant and that also skews are values up and we initially may have been in that 10 percent tolerance but now all the sudden because we potted in the next larger pot size we blown out of that 10 percent. (p)

There needs to be more than 2 bumps a year that isn't sufficient (p)

At one point I am at 60 days exposed to uninsured anywhere from 3 to 6 million dollars...how can that work? (p)

I am paying money and I am exposed to something I can't even control because of a wording. (p)

[People] are looking to work the program within a way that their nurseries actually work (i)

How do I know what the age of plant, nobody knows? (p)

I was asked to provide a list of everybody I purchased plants from and everybody I sold them to. I really don't think this is any of the governments business. (p)

We have heard a lot about the 30 day waiting period because it is a big problem. (p)

Whatever tweaks or changes that evolve...that there be no period which the growers would go naked without any coverage. (a)

Bottom line is the growers want a policy that makes business sense for their business operation. (a)

The current policy does not allow any mechanism to adjust reported inventory downward in value. (a)

The plant inventory reporting software DataScope does not have a method to report multis as a different value than singles. (a)

Omitted plants, it is very challenging to add them mid year. (a)

Why does every single thing on the nursery need to be insured? *(i)*

The diversification of the nursery industry is so dynamic that it's completely impossible...to go through this policy. *(p)*

They were saying every tree had a value whether it be for firewood or for mulch. *(p)*

When you get someone out there they don't have enough experience. *(p)*

If we cut that peach tree off until it gets to 12 inches we have no coverage. *(p)*

Unfortunately nurseries are treated like a mono-crop like wheat, corn where there would have to be a complete loss and that's just not realistic. *(a)*

We know [weather damage] within 4 months *(p)*

I think my problem...you are asking us to project what our crop is going to be for the next season with a 10 percent tolerance. How am I supposed to know exactly what my inventory is going to be? *(p)*

If we miss it by 30 days it creates problems. *(p)*

Treat it like property type insurance with a co-insurance...rather than voiding the policy...you will have a penalty. *(p)*

There is no insurance available for that at all [referring to once the product has left the field]. *(p)*

Understanding of the actuarial documents

The Contractor did not identify comments that specifically addressed Nursery Program actuarial documents, except perhaps, "Could we not have Special Provisions for unit structure on a state or county basis in the nursery policy?" *(i)* and "There is no other insurance that I know of that you can go from 60 to 75 percent and your premiums triple." *(p)*

Understanding of rate calculations

The Contractor did not identify comments that addressed Nursery Program rate calculations, except perhaps, "There is no other insurance that I know of that you can go from 60 to 75 percent and your premiums triple." *(p)*

Understanding of the calculations to determine the amounts of insurance

The Contractor did not identify comments that specifically addressed Nursery Program calculations to determine the amount of insurance. However, there were numerous comments already documented above that addressed inventory, inventory valuation, and inventory software.

Understanding of data reporting requirements for Appendix III

The Contractor did not identify comments that specifically addressed Appendix III.

Understanding of the implications of Waste, Fraud, or Abuse of the program

One of the suggestions has been made is get rid of the CAT and do away with that and actually put a premium on. *(i)*

End the democracy of that program, buy them out [the cheaters], pay them off, do something to open it up for the rest of us. *(i)*

As far as fraud in a concern, why not increase inspections on the initiation new policy. *(u)*

The guy that spends more money he doesn't get a break on his insurance but the guy who just sits there and nickels and dimes it and just throws stuff on the ground and all the sudden it turns around and gets a flood he gets a claim [regarding flooding]. *(p)*

It [CAT coverage] is only designed to qualify for disaster payments. *(p)*

Understanding of the Insurance Providers responsibilities

The Contractor did not identify comments that specifically addressed Insurance Providers responsibilities under the Nursery Program. However, there were numerous comments already documented above that addressed loss adjustment and underwriting managed by the Insurance Providers.

Understanding of forms completions and timelines of reporting information

A lot of people in this room sell every single day and plant every single week that is a huge problem because you are asking you to estimate and I can't estimate. And God forbid there is a claim and they come back and they want to see exactly what it was at such and such a date and they want to see all the plantings subsequent. So it makes it extremely to adhere to the letter of the insurance policy and it makes really no sense. *(p)*

There needs to be more than 2 bumps a year that isn't sufficient *(p)*

Push this thing a little later would take some of the pressure off of us. *(p)*

We have heard a lot about the 30 day waiting period because it is a big problem. *(p)*

30 days later that grower is already potentially out of compliance on the very first day. *(a)*

Allow inventory revisions throughout the year. *(a)*

Omitted plants, it is very challenging to add them mid year. *(a)*

Our policy should be put in on the end of October. *(p)*

If you got a cicada problem I guarantee you aren't going to see those damages within 72 hours. (p)

Our inventory changes every minute and we're planting and doing production every day. And so when it's become a plant that is viable and worthy of sale versus a plant that's in the yard that's put its time in and so when we looked at it I mean it was absolutely impossible. (p)

We know [weather damage] within 4 months (p)

Like September 1st or September 30th someplace in there [regarding SCD]. (i)

If we miss it by 30 days it creates problems. (p)

For roses we can have a loss in March...then in June or July when the adjuster shows up the roses look great. (p)

Any other issues identified that do not fall into the previous categories

The themes of the comments are well documented in the lists above, with the possible exception of the need for insurance for grafted production. The complexity of the insurance had an impact on the content of the discussions. Individual producer experiences had an impact on the tone.

Need for Insurance for Grafted Production

From the beginning it is obvious they [the government] have tried to pigeonhole the nursery crop insurance program into what it requires for row crops. (i)

If it a livable tree it needs to be covered whether it is one inch it has some value. (p)

If we cut that peach tree off until it gets to 12 inches we have no coverage. (p)

I don't care if we plant a million dollars of seed in the ground, and we don't get coverage, why? (p)

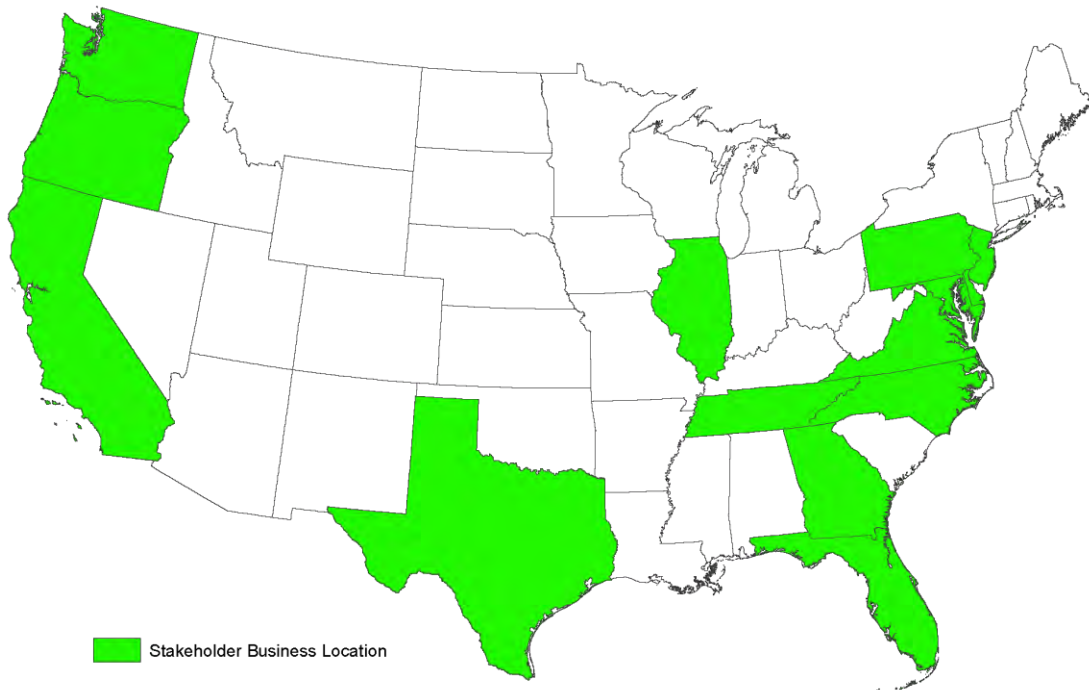
There has been no protection for the sleeping eye trees. (i)

We also work with some groups with controlled varieties...is there a way to get these trees covered? (p)

Exhibit 3. Sources of Producer Input (by State)

Sources of Producer Input (by State)

Insurance is available under the Nursery Program in all states. Input was obtained from stakeholders whose principal place of business is in the states shaded dark green.



Appendix C

Detailed Data Tables for the Rating Review

Data for Figure 1. Annual Loss Ratio

Crop Year	Loss Ratio (All Nursery)	Loss Ratio (Container)	Loss Ratio (Field Grown)
1999	0.206	0.193	0.239
2000	1.071	1.011	1.182
2001	0.891	1.176	0.289
2002	0.170	0.233	0.032
2003	0.437	0.507	0.282
2004	1.304	1.003	1.914
2005	1.995	2.532	0.951
2006	5.799	5.795	5.808
2007	0.486	0.178	1.262
2008	0.065	0.062	0.072
2009	0.532	0.144	1.380
2010	0.661	0.204	1.865
2011	0.078	0.046	0.173

Data for Figure 2. Annual Liability

Crop Year	Liability (All Nursery)	Liability (Container)	Liability (Field Grown)
1999	2,367,529	1,136,033	1,231,497
2000	2,356,727	1,358,965	997,761
2001	2,599,386	1,552,917	1,046,469
2002	3,006,447	1,805,923	1,200,524
2003	3,282,964	1,995,805	1,287,159
2004	3,597,695	2,110,588	1,487,107
2005	3,888,377	2,255,018	1,633,359
2006	3,673,547	2,143,224	1,530,322
2007	4,010,257	2,440,198	1,570,059
2008	4,036,440	2,429,946	1,606,494
2009	3,192,935	2,010,105	1,182,829
2010	2,791,903	1,778,674	1,013,229
2011	2,310,164	1,537,237	772,927

Data for Figure 3. Annual Earned Premium Rate

Crop Year	Earned Premium Rate (All Nursery)	Earned Premium Rate (Container)	Earned Premium Rate (Field Grown)
1999	0.013	0.019	0.007
2000	0.019	0.021	0.015
2001	0.018	0.021	0.014
2002	0.018	0.021	0.014
2003	0.018	0.021	0.015
2004	0.018	0.020	0.014
2005	0.018	0.020	0.014
2006	0.012	0.013	0.010
2007	0.022	0.026	0.016
2008	0.022	0.026	0.017
2009	0.020	0.022	0.017
2010	0.021	0.024	0.016
2011	0.022	0.024	0.016

Data for Figure 4. Frequency of Indemnity Payments

Crop Year	Frequency (All Nursery)	Frequency (Container)	Frequency (Field Grown)
1999	0.016	0.015	0.016
2000	0.056	0.061	0.027
2001	0.067	0.072	0.032
2002	0.024	0.025	0.013
2003	0.040	0.039	0.027
2004	0.102	0.092	0.093
2005	0.104	0.121	0.054
2006	0.146	0.151	0.122
2007	0.058	0.031	0.083
2008	0.021	0.020	0.014
2009	0.046	0.034	0.055
2010	0.071	0.062	0.067
2011	0.027	0.028	0.018

Data for Figure 5. Average Severity of Indemnity Payments

Crop Year	Severity (All Nursery)	Severity (Container)	Severity (Field Grown)
1999	143.514	119.601	165.423
2000	250.537	176.013	506.523
2001	176.775	181.257	95.025
2002	97.609	109.409	25.331
2003	162.345	166.738	110.320
2004	193.742	141.853	227.647
2005	294.985	277.725	194.651
2006	422.607	357.779	377.166
2007	174.802	114.424	200.143
2008	70.337	64.507	78.704
2009	250.611	87.808	365.900
2010	210.255	74.277	372.923
2011	65.507	39.454	127.553

Data for Figure 6. Annual Loss Ratio at Additional Coverage Levels

Crop Year	Loss Ratio (All Nursery)	Loss Ratio (Container)	Loss Ratio (Field Grown)
1999	0.632	0.604	0.889
2000	2.648	2.470	2.997
2001	2.313	2.804	0.660
2002	0.461	0.557	0.114
2003	0.863	0.946	0.579
2004	2.455	1.583	5.562
2005	4.677	5.349	2.641
2006	10.834	9.912	13.106
2007	0.316	0.255	0.531
2008	0.087	0.084	0.094
2009	0.662	0.266	1.631
2010	1.257	0.344	4.087
2011	0.082	0.066	0.144

Data for Figure 7. Annual Liability at Additional Coverage Levels

Crop Year	Liability (All Nursery)	Liability (Container)	Liability (Field Grown)
1999	252,911	195,321	57,590
2000	407,747	270,330	137,416
2001	474,564	362,263	112,300
2002	562,759	412,172	150,587
2003	692,310	516,760	175,549
2004	794,210	578,803	215,407
2005	985,955	682,768	303,187
2006	966,718	656,180	310,537
2007	1,279,071	906,835	372,235
2008	1,309,408	855,629	453,778
2009	837,947	510,706	327,240
2010	743,552	471,836	271,716
2011	618,629	416,793	201,836

Data for Figure 8. Annual Earned Premium Rate at Additional Coverage Levels

Crop Year	Earned Premium Rate (All Nursery)	Earned Premium Rate (Container)	Earned Premium Rate (Field Grown)
1999	0.029	0.034	0.013
2000	0.043	0.043	0.043
2001	0.035	0.036	0.034
2002	0.035	0.038	0.028
2003	0.033	0.034	0.029
2004	0.030	0.032	0.024
2005	0.028	0.031	0.023
2006	0.020	0.021	0.018
2007	0.041	0.045	0.031
2008	0.040	0.045	0.031
2009	0.039	0.046	0.029
2010	0.040	0.047	0.026
2011	0.040	0.048	0.025

Data for Figure 9. Annual Indemnity Frequency at Additional Coverage Levels

Crop Year	Frequency (All Nursery)	Frequency (Container)	Frequency (Field Grown)
1999	0.061	0.055	0.096
2000	0.275	0.271	0.179
2001	0.242	0.250	0.131
2002	0.086	0.089	0.049
2003	0.111	0.120	0.056
2004	0.210	0.191	0.225
2005	0.308	0.349	0.154
2006	0.376	0.385	0.323
2007	0.090	0.067	0.098
2008	0.045	0.045	0.027
2009	0.115	0.087	0.133
2010	0.187	0.166	0.180
2011	0.069	0.074	0.042

Data for Figure 10. Annual Indemnity Average Severity at Additional Coverage Levels

Crop Year	Severity (All Nursery)	Severity (Container)	Severity (Field Grown)
1999	171.259	181.000	91.571
2000	261.712	184.897	519.529
2001	197.730	203.494	76.758
2002	104.483	111.766	30.250
2003	164.325	156.533	134.955
2004	237.219	160.364	287.980
2005	325.160	300.590	220.108
2006	420.116	329.770	431.653
2007	108.149	116.178	86.097
2008	64.606	60.574	69.211
2009	171.937	89.696	230.955
2010	213.405	70.037	380.312
2011	37.889	32.650	49.333

Data for Figure 11. Annual Earned Premium Rate at Additional Coverage Levels Restated to 2012 Premium Rate Levels

Crop Year	Earned Premium Rate (All Nursery)	Earned Premium Rate (Container)	Earned Premium Rate (Field Grown)
1999	0.030	0.036	0.009
2000	0.031	0.036	0.020
2001	0.030	0.033	0.020
2002	0.030	0.035	0.018
2003	0.029	0.032	0.019
2004	0.026	0.030	0.016
2005	0.024	0.029	0.014
2006	0.015	0.017	0.011
2007	0.029	0.033	0.018
2008	0.028	0.032	0.019
2009	0.027	0.032	0.018
2010	0.028	0.033	0.018
2011	0.028	0.033	0.017

Data for Figure 12. Annual Loss Ratio Comparison for all Practices Restated to 2012 Premium Rates – Nursery

Crop Year	Loss Ratio (Adjusted Premium Rates)	Loss Ratio (Historical)
1999	0.567	0.632
2000	2.839	2.648
2001	2.643	2.313
2002	0.511	0.461
2003	0.998	0.863
2004	2.846	2.455
2005	5.490	4.677
2006	14.611	10.834
2007	0.431	0.316
2008	0.128	0.087
2009	1.032	0.662
2010	2.023	1.257
2011	0.130	0.082

Data for Figure 13. Annual Comparison Actual Loss Ratio to Loss Ratio with Premium Rate Re-stated to 2012
 Level – Field Grown

Crop Year	Loss Ratio (Adjusted Premium Rates)	Loss Ratio (Historical)
1999	1.575	0.889
2000	4.286	2.997
2001	1.036	0.660
2002	0.186	0.114
2003	0.944	0.579
2004	9.209	5.562
2005	4.211	2.641
2006	21.824	13.106
2007	0.906	0.531
2008	0.165	0.094
2009	2.851	1.631
2010	6.942	4.087
2011	0.240	0.144

 Data for Figure 14. Annual Comparison Actual Loss Ratio to Loss Ratio with Premium Rate Re-stated to 2012
 Level - Container

Crop Year	Loss Ratio (Adjusted Premium Rates)	Loss Ratio (Historical)
1999	0.514	0.604
2000	2.349	2.470
2001	2.965	2.804
2002	0.567	0.557
2003	1.008	0.946
2004	1.693	1.583
2005	5.776	5.349
2006	12.410	9.912
2007	0.329	0.255
2008	0.117	0.084
2009	0.398	0.266
2010	0.544	0.344
2011	0.103	0.066

Data for Figure 15. Policies Earning Premium 1999 through 2011		
State	County	Policies
Alabama	Autauga	23
Alabama	Baldwin	41
Alabama	Bullock	15
Alabama	Calhoun	19
Alabama	Chambers	8
Alabama	Cherokee	30
Alabama	Chilton	4
Alabama	Cleburne	3
Alabama	Coffee	14
Alabama	Cullman	15
Alabama	Dale	4
Alabama	Dallas	4
Alabama	Elmore	20
Alabama	Escambia	7
Alabama	Etowah	8
Alabama	Franklin	3
Alabama	Geneva	15
Alabama	Greene	2
Alabama	Lauderdale	6
Alabama	Lee	13
Alabama	Limestone	98
Alabama	Macon	16
Alabama	Madison	53
Alabama	Marshall	3
Alabama	Mobile	276
Alabama	Montgomery	21
Alabama	Morgan	4
Alabama	Pickens	2
Alabama	Pike	2
Alabama	Randolph	1
Alabama	Russell	10
Alabama	Saint Clair	3
Alabama	Shelby	21
Alabama	Talladega	2
Alabama	Tuscaloosa	2
Alabama	Washington	6
Arizona	Maricopa	125
Arizona	Mohave	3
Arizona	Pima	19
Arizona	Pinal	20
Arizona	Yavapai	19
Arizona	Yuma	5
Arkansas	Arkansas	2
Arkansas	Benton	4
Arkansas	Clay	13
Arkansas	Columbia	14

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Arkansas	Crawford	7
Arkansas	Faulkner	11
Arkansas	Independence	9
Arkansas	Little River	4
Arkansas	Madison	6
Arkansas	Monroe	1
Arkansas	Montgomery	10
Arkansas	Nevada	1
Arkansas	Newton	2
Arkansas	Poinsett	17
Arkansas	Pulaski	9
Arkansas	Van Buren	3
Arkansas	White	10
California	Alameda	39
California	Butte	12
California	Colusa	5
California	Contra Costa	22
California	Eldorado	7
California	Fresno	89
California	Glenn	6
California	Humboldt	21
California	Imperial	16
California	Kern	152
California	Kings	2
California	Lassen	3
California	Los Angeles	155
California	Madera	36
California	Mendocino	13
California	Merced	41
California	Monterey	94
California	Napa	6
California	Nevada	10
California	Orange	155
California	Placer	25
California	Riverside	153
California	Sacramento	36
California	San Benito	17
California	San Bernardino	71
California	San Diego	388
California	San Joaquin	69
California	San Luis Obispo	87
California	San Mateo	41
California	Santa Barbara	79
California	Santa Clara	37
California	Santa Cruz	84
California	Shasta	8

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
California	Siskiyou	11
California	Solano	31
California	Sonoma	57
California	Stanislaus	52
California	Sutter	11
California	Tehama	17
California	Tulare	89
California	Ventura	185
California	Yolo	1
California	Yuba	7
Colorado	Adams	74
Colorado	Arapahoe	18
Colorado	Boulder	32
Colorado	Broomfield	5
Colorado	Denver	10
Colorado	Douglas	44
Colorado	Elbert	2
Colorado	El Paso	23
Colorado	Fremont	1
Colorado	Garfield	2
Colorado	Gunnison	1
Colorado	Jefferson	31
Colorado	Larimer	47
Colorado	Lincoln	4
Colorado	Logan	7
Colorado	Mesa	5
Colorado	Montezuma	1
Colorado	Otero	5
Colorado	Prowers	11
Colorado	Pueblo	20
Colorado	Routt	8
Colorado	Washington	21
Colorado	Weld	85
Connecticut	Fairfield	18
Connecticut	Hartford	70
Connecticut	Litchfield	18
Connecticut	Middlesex	25
Connecticut	New Haven	30
Connecticut	New London	13
Connecticut	Tolland	12
Connecticut	Windham	20
Delaware	Kent	18
Delaware	New Castle	9
Delaware	Sussex	39
Florida	Alachua	232
Florida	Baker	26

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Florida	Brevard	195
Florida	Broward	894
Florida	Calhoun	9
Florida	Charlotte	55
Florida	Citrus	49
Florida	Clay	53
Florida	Collier	239
Florida	Columbia	60
Florida	Dade	1134
Florida	De Soto	120
Florida	Dixie	4
Florida	Duval	60
Florida	Escambia	13
Florida	Flagler	27
Florida	Gadsden	111
Florida	Gilchrist	45
Florida	Glades	112
Florida	Hamilton	18
Florida	Hardee	285
Florida	Hendry	117
Florida	Hernando	140
Florida	Highlands	309
Florida	Hillsborough	830
Florida	Indian River	149
Florida	Jackson	31
Florida	Jefferson	126
Florida	Lafayette	19
Florida	Lake	1229
Florida	Lee	908
Florida	Leon	24
Florida	Levy	68
Florida	Liberty	14
Florida	Madison	75
Florida	Manatee	539
Florida	Marion	194
Florida	Martin	370
Florida	Miami-Dade	5373
Florida	Monroe	10
Florida	Okaloosa	11
Florida	Okeechobee	91
Florida	Orange	1892
Florida	Osceola	167
Florida	Palm Beach	2214
Florida	Pasco	289
Florida	Pinellas	43
Florida	Polk	496

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Florida	Putnam	75
Florida	St. Johns	56
Florida	St. Lucie	294
Florida	Santa Rosa	51
Florida	Sarasota	121
Florida	Seminole	167
Florida	Sumter	244
Florida	Suwannee	70
Florida	Taylor	10
Florida	Volusia	303
Florida	Wakulla	7
Florida	Walton	6
Georgia	Bacon	12
Georgia	Baker	3
Georgia	Baldwin	3
Georgia	Banks	8
Georgia	Bartow	13
Georgia	Berrien	8
Georgia	Brooks	24
Georgia	Bulloch	33
Georgia	Camden	2
Georgia	Carroll	15
Georgia	Catoosa	3
Georgia	Charlton	1
Georgia	Chatham	12
Georgia	Cherokee	30
Georgia	Clarke	33
Georgia	Clay	3
Georgia	Clinch	7
Georgia	Cobb	8
Georgia	Coffee	22
Georgia	Colquitt	29
Georgia	Cook	5
Georgia	Coweta	10
Georgia	Crawford	43
Georgia	Dawson	11
Georgia	Decatur	14
Georgia	Dooly	8
Georgia	Douglas	10
Georgia	Effingham	5
Georgia	Emanuel	12
Georgia	Evans	40
Georgia	Fannin	1
Georgia	Fayette	13
Georgia	Floyd	4
Georgia	Forsyth	28

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Georgia	Fulton	22
Georgia	Gordon	7
Georgia	Grady	74
Georgia	Greene	13
Georgia	Gwinnett	32
Georgia	Hancock	1
Georgia	Haralson	3
Georgia	Harris	9
Georgia	Hart	13
Georgia	Henry	17
Georgia	Houston	7
Georgia	Jasper	10
Georgia	Jeff Davis	2
Georgia	Johnson	18
Georgia	Lamar	39
Georgia	Lowndes	27
Georgia	Lumpkin	15
Georgia	McDuffie	26
Georgia	Marion	32
Georgia	Meriwether	40
Georgia	Mitchell	2
Georgia	Monroe	3
Georgia	Morgan	16
Georgia	Murray	17
Georgia	Newton	3
Georgia	Oconee	51
Georgia	Oglethorpe	19
Georgia	Paulding	7
Georgia	Peach	28
Georgia	Pierce	2
Georgia	Pike	6
Georgia	Quitman	3
Georgia	Rabun	8
Georgia	Randolph	5
Georgia	Rockdale	1
Georgia	Spalding	7
Georgia	Stewart	11
Georgia	Tattnall	18
Georgia	Thomas	3
Georgia	Tift	14
Georgia	Toombs	13
Georgia	Towns	5
Georgia	Turner	7
Georgia	Union	8
Georgia	Walker	1
Georgia	Walton	21

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Georgia	Washington	6
Georgia	Wayne	16
Georgia	Webster	6
Georgia	Wheeler	11
Georgia	Wilkes	9
Georgia	Worth	3
Hawaii	Hawaii	357
Hawaii	Honolulu	134
Hawaii	Kauai	48
Hawaii	Maui & Kalwao	54
Idaho	Ada	8
Idaho	Bingham	4
Idaho	Bonneville	5
Idaho	Boundary	10
Idaho	Canyon	12
Idaho	Gem	13
Idaho	Gooding	1
Idaho	Jefferson	1
Idaho	Kootenai	2
Idaho	Madison	5
Idaho	Minidoka	7
Idaho	Teton	7
Illinois	Adams	18
Illinois	Boone	32
Illinois	Bureau	3
Illinois	Carroll	5
Illinois	Champaign	15
Illinois	Christian	8
Illinois	Clinton	22
Illinois	Cook	26
Illinois	Cumberland	12
Illinois	De Kalb	56
Illinois	Du Page	3
Illinois	Fayette	21
Illinois	Grundy	18
Illinois	Hamilton	2
Illinois	Hancock	5
Illinois	Henry	10
Illinois	Iroquois	25
Illinois	Jefferson	1
Illinois	Jersey	2
Illinois	Kane	198
Illinois	Kankakee	40
Illinois	Kendall	24
Illinois	Lake	109
Illinois	La Salle	7

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Illinois	Lee	21
Illinois	Logan	1
Illinois	McDonough	4
Illinois	McHenry	237
Illinois	McLean	15
Illinois	Macon	6
Illinois	Madison	15
Illinois	Ogle	15
Illinois	Peoria	13
Illinois	Perry	3
Illinois	Pike	7
Illinois	Putnam	9
Illinois	Rock Island	13
Illinois	St. Clair	13
Illinois	Tazewell	8
Illinois	Union	10
Illinois	Vermilion	1
Illinois	Whiteside	16
Illinois	Will	53
Illinois	Winnebago	18
Illinois	Woodford	13
Indiana	Allen	9
Indiana	Carroll	6
Indiana	Clark	11
Indiana	De Kalb	6
Indiana	Hamilton	14
Indiana	Hancock	10
Indiana	Hendricks	27
Indiana	Howard	6
Indiana	Jasper	4
Indiana	Johnson	12
Indiana	Lake	5
Indiana	Montgomery	6
Indiana	St. Joseph	11
Indiana	Tippecanoe	2
Indiana	Wayne	12
Indiana	Whitley	11
Iowa	Boone	5
Iowa	Cerro Gordo	6
Iowa	Clay	4
Iowa	Davis	7
Iowa	Decatur	3
Iowa	Floyd	13
Iowa	Fremont	23
Iowa	Greene	5
Iowa	Johnson	4

Data for Figure 15. Policies Earning Premium 1999 through 2011		
State	County	Policies
Iowa	Mahaska	9
Iowa	Marion	9
Iowa	Marshall	9
Iowa	Montgomery	5
Iowa	Page	34
Iowa	Polk	7
Iowa	Pottawattamie	16
Iowa	Shelby	12
Iowa	Sioux	12
Iowa	Warren	3
Iowa	Washington	5
Iowa	Winnebago	3
Iowa	Woodbury	5
Kansas	Butler	3
Kansas	Douglas	7
Kansas	Franklin	7
Kansas	Geary	2
Kansas	Johnson	63
Kansas	Linn	9
Kansas	Miami	20
Kansas	Neosho	9
Kansas	Reno	5
Kansas	Sedgwick	8
Kansas	Shawnee	6
Kansas	Trego	2
Kansas	Wabaunsee	2
Kentucky	Boone	10
Kentucky	Bourbon	10
Kentucky	Calloway	39
Kentucky	Carter	1
Kentucky	Daviess	1
Kentucky	Edmonson	2
Kentucky	Fayette	2
Kentucky	Franklin	2
Kentucky	Graves	2
Kentucky	Hardin	13
Kentucky	Henderson	6
Kentucky	Henry	6
Kentucky	Jefferson	8
Kentucky	Jessamine	1
Kentucky	Lincoln	3
Kentucky	McCracken	10
Kentucky	Madison	9
Kentucky	Nelson	9
Kentucky	Nicholas	11
Kentucky	Oldham	9

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Kentucky	Shelby	31
Kentucky	Spencer	5
Kentucky	Warren	4
Kentucky	Washington	12
Louisiana	Acadia	9
Louisiana	Bienville	2
Louisiana	Bossier	10
Louisiana	Caddo	7
Louisiana	Calcasieu	5
Louisiana	Catahoula	8
Louisiana	Claiborne	8
Louisiana	Concordia	4
Louisiana	Franklin	8
Louisiana	Iberia	23
Louisiana	Iberville	5
Louisiana	Jefferson	2
Louisiana	Jefferson Davis	3
Louisiana	Lafayette	16
Louisiana	Lincoln	10
Louisiana	Madison	3
Louisiana	Plaquemines	21
Louisiana	Rapides	296
Louisiana	Richland	1
Louisiana	Sabine	1
Louisiana	Saint Charles	3
Louisiana	Saint Landry	8
Louisiana	Saint Tammany	25
Louisiana	Tangipahoa	16
Louisiana	Vermilion	2
Louisiana	Vernon	1
Louisiana	Washington	34
Louisiana	Webster	2
Louisiana	Winn	6
Maine	Androscoggin	6
Maine	Penobscot	3
Maryland	Anne Arundel	14
Maryland	Baltimore	58
Maryland	Caroline	49
Maryland	Carroll	29
Maryland	Cecil	44
Maryland	Dorchester	21
Maryland	Frederick	31
Maryland	Harford	6
Maryland	Howard	20
Maryland	Kent	49
Maryland	Montgomery	53

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Maryland	Prince George's	6
Maryland	Queen Anne's	82
Maryland	Somerset	5
Maryland	Talbot	3
Maryland	Wicomico	30
Maryland	Worcester	15
Massachusetts	Bristol	23
Massachusetts	Franklin	3
Massachusetts	Hampden	21
Massachusetts	Hampshire	9
Massachusetts	Middlesex	37
Massachusetts	Plymouth	15
Massachusetts	Worcester	8
Michigan	Allegan	61
Michigan	Antrim	1
Michigan	Barry	1
Michigan	Berrien	25
Michigan	Calhoun	6
Michigan	Charlevoix	2
Michigan	Crawford	2
Michigan	Eaton	13
Michigan	Genesee	9
Michigan	Huron	7
Michigan	Ingham	7
Michigan	Ionia	2
Michigan	Jackson	15
Michigan	Kalamazoo	252
Michigan	Kent	22
Michigan	Lapeer	4
Michigan	Lenawee	7
Michigan	Livingston	28
Michigan	Macomb	29
Michigan	Missaukee	2
Michigan	Monroe	41
Michigan	Montcalm	11
Michigan	Newaygo	9
Michigan	Oakland	31
Michigan	Ottawa	76
Michigan	St. Clair	4
Michigan	Sanilac	8
Michigan	Shiawassee	5
Michigan	Tuscola	2
Michigan	Van Buren	69
Michigan	Washtenaw	49
Michigan	Wayne	23
Minnesota	Anoka	20

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Minnesota	Benton	4
Minnesota	Blue Earth	4
Minnesota	Carlton	1
Minnesota	Carver	34
Minnesota	Chisago	2
Minnesota	Cottonwood	27
Minnesota	Dakota	82
Minnesota	Douglas	1
Minnesota	Hennepin	17
Minnesota	Houston	4
Minnesota	Hubbard	19
Minnesota	Isanti	6
Minnesota	Itasca	1
Minnesota	Jackson	27
Minnesota	Kanabec	7
Minnesota	Le Sueur	5
Minnesota	Lincoln	1
Minnesota	Lyon	1
Minnesota	Meeker	9
Minnesota	Mille Lacs	2
Minnesota	Pine	15
Minnesota	Polk	16
Minnesota	Ramsey	25
Minnesota	Rice	32
Minnesota	Scott	10
Minnesota	Stearns	21
Minnesota	Washington	103
Minnesota	Wright	32
Mississippi	Adams	2
Mississippi	Attala	13
Mississippi	Benton	9
Mississippi	Copiah	11
Mississippi	Covington	7
Mississippi	George	100
Mississippi	Harrison	12
Mississippi	Hinds	10
Mississippi	Jackson	17
Mississippi	Lamar	6
Mississippi	Madison	10
Mississippi	Marshall	4
Mississippi	Oktibbeha	2
Mississippi	Pontotoc	8
Mississippi	Stone	13
Mississippi	Tippah	9
Mississippi	Walthall	1
Mississippi	Wayne	17

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Mississippi	Winston	5
Missouri	Atchison	7
Missouri	Bates	4
Missouri	Boone	10
Missouri	Cass	23
Missouri	Clay	5
Missouri	Cole	3
Missouri	Crawford	1
Missouri	Dade	5
Missouri	Franklin	3
Missouri	Grundy	13
Missouri	Harrison	7
Missouri	Holt	8
Missouri	Jackson	20
Missouri	Jasper	15
Missouri	Jefferson	14
Missouri	Lafayette	9
Missouri	Lawrence	1
Missouri	Lincoln	23
Missouri	Linn	6
Missouri	Macon	3
Missouri	Madison	1
Missouri	Maries	3
Missouri	Mississippi	3
Missouri	Moniteau	8
Missouri	Montgomery	28
Missouri	New Madrid	6
Missouri	Pike	19
Missouri	St. Charles	19
Missouri	St. Francois	10
Missouri	St. Louis	67
Missouri	Saline	1
Missouri	Scott	7
Missouri	Warren	7
Missouri	Webster	1
Missouri	St. Louis City	1
Montana	Beaverhead	3
Montana	Cascade	9
Montana	Flathead	13
Montana	Ravalli	23
Montana	Sanders	1
Nebraska	Adams	5
Nebraska	Box Butte	4
Nebraska	Burt	12
Nebraska	Cuming	8
Nebraska	Dodge	5

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Nebraska	Douglas	27
Nebraska	Keith	9
Nebraska	Lancaster	15
Nebraska	Lincoln	9
Nebraska	Madison	6
Nebraska	Sarpy	13
Nebraska	Saunders	14
Nebraska	Scotts Bluff	3
Nebraska	Thayer	13
Nebraska	Washington	1
Nevada	Clark	2
Nevada	Nye	3
New Hampshire	Hillsborough	11
New Hampshire	Merrimack	10
New Hampshire	Rockingham	20
New Hampshire	Strafford	11
New Jersey	Atlantic	24
New Jersey	Burlington	33
New Jersey	Camden	2
New Jersey	Cape May	11
New Jersey	Cumberland	93
New Jersey	Gloucester	10
New Jersey	Hunterdon	7
New Jersey	Mercer	5
New Jersey	Middlesex	8
New Jersey	Monmouth	21
New Jersey	Morris	15
New Jersey	Ocean	5
New Jersey	Salem	38
New Jersey	Somerset	12
New Jersey	Sussex	9
New Jersey	Union	13
New Jersey	Warren	5
New Mexico	Curry	6
New Mexico	Dona Ana	5
New Mexico	Lea	6
New Mexico	Mora	10
New Mexico	Quay	7
New York	Albany	4
New York	Cattaraugus	21
New York	Cayuga	5
New York	Chautauqua	4
New York	Dutchess	5
New York	Erie	43
New York	Genesee	4
New York	Monroe	4

 Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
New York	Oneida	9
New York	Onondaga	19
New York	Ontario	13
New York	Otsego	9
New York	Rensselaer	7
New York	Schenectady	14
New York	Schoharie	10
New York	Schuyler	2
New York	Suffolk	173
New York	Tioga	10
New York	Tompkins	4
New York	Wayne	16
New York	Westchester	2
North Carolina	Alamance	21
North Carolina	Alexander	8
North Carolina	Anson	4
North Carolina	Ashe	10
North Carolina	Avery	39
North Carolina	Beaufort	7
North Carolina	Bladen	1
North Carolina	Brunswick	52
North Carolina	Buncombe	30
North Carolina	Burke	190
North Carolina	Cabarrus	30
North Carolina	Caldwell	286
North Carolina	Caswell	18
North Carolina	Catawba	37
North Carolina	Chatham	29
North Carolina	Cherokee	13
North Carolina	Chowan	17
North Carolina	Cleveland	36
North Carolina	Columbus	33
North Carolina	Craven	8
North Carolina	Cumberland	15
North Carolina	Davie	5
North Carolina	Duplin	28
North Carolina	Edgecombe	18
North Carolina	Forsyth	16
North Carolina	Franklin	13
North Carolina	Gaston	12
North Carolina	Granville	6
North Carolina	Greene	8
North Carolina	Guilford	80
North Carolina	Halifax	8
North Carolina	Harnett	38
North Carolina	Haywood	16

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
North Carolina	Henderson	45
North Carolina	Hyde	5
North Carolina	Iredell	25
North Carolina	Jackson	3
North Carolina	Johnston	125
North Carolina	Lee	10
North Carolina	Lenoir	15
North Carolina	Lincoln	9
North Carolina	McDowell	54
North Carolina	Macon	1
North Carolina	Madison	10
North Carolina	Martin	12
North Carolina	Mecklenburg	39
North Carolina	Mitchell	4
North Carolina	Montgomery	11
North Carolina	Moore	28
North Carolina	Nash	58
North Carolina	New Hanover	10
North Carolina	Northampton	10
North Carolina	Onslow	2
North Carolina	Orange	7
North Carolina	Pasquotank	10
North Carolina	Pender	61
North Carolina	Pitt	36
North Carolina	Polk	16
North Carolina	Randolph	44
North Carolina	Richmond	4
North Carolina	Robeson	13
North Carolina	Rockingham	34
North Carolina	Rowan	30
North Carolina	Rutherford	10
North Carolina	Sampson	32
North Carolina	Stanly	13
North Carolina	Stokes	1
North Carolina	Surry	5
North Carolina	Transylvania	17
North Carolina	Union	46
North Carolina	Vance	10
North Carolina	Wake	63
North Carolina	Warren	20
North Carolina	Watauga	6
North Carolina	Wayne	28
North Carolina	Wilkes	9
North Carolina	Wilson	30
North Carolina	Yadkin	5
North Carolina	Yancey	12

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
North Dakota	Burleigh	7
North Dakota	Dickey	3
North Dakota	La Moure	4
North Dakota	McHenry	7
North Dakota	Nelson	12
North Dakota	Sargent	2
North Dakota	Stark	2
North Dakota	Ward	10
Ohio	Ashland	17
Ohio	Ashtabula	17
Ohio	Athens	6
Ohio	Auglaize	5
Ohio	Brown	5
Ohio	Carroll	11
Ohio	Champaign	3
Ohio	Clark	34
Ohio	Clermont	1
Ohio	Coshocton	3
Ohio	Crawford	14
Ohio	Cuyahoga	3
Ohio	Darke	2
Ohio	Delaware	11
Ohio	Erie	24
Ohio	Franklin	12
Ohio	Greene	3
Ohio	Hardin	4
Ohio	Hocking	6
Ohio	Lake	103
Ohio	Lorain	26
Ohio	Lucas	14
Ohio	Mahoning	2
Ohio	Medina	24
Ohio	Meigs	2
Ohio	Miami	14
Ohio	Montgomery	23
Ohio	Muskingum	13
Ohio	Paulding	2
Ohio	Pickaway	18
Ohio	Portage	6
Ohio	Richland	3
Ohio	Stark	13
Ohio	Summit	2
Ohio	Trumbull	4
Ohio	Union	4
Ohio	Warren	17
Ohio	Wayne	11

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Ohio	Wood	2
Oklahoma	Canadian	8
Oklahoma	Cherokee	63
Oklahoma	Cleveland	31
Oklahoma	Comanche	2
Oklahoma	Garvin	16
Oklahoma	Grady	8
Oklahoma	Kingfisher	6
Oklahoma	McClain	9
Oklahoma	Mayes	2
Oklahoma	Murray	9
Oklahoma	Muskogee	24
Oklahoma	Oklahoma	24
Oklahoma	Okmulgee	2
Oklahoma	Payne	1
Oklahoma	Pontotoc	11
Oklahoma	Rogers	21
Oklahoma	Wagoner	19
Oregon	Benton	8
Oregon	Clackamas	376
Oregon	Columbia	4
Oregon	Curry	7
Oregon	Deschutes	4
Oregon	Douglas	20
Oregon	Hood River	8
Oregon	Jefferson	11
Oregon	Josephine	1
Oregon	Klamath	4
Oregon	Lane	43
Oregon	Lincoln	3
Oregon	Linn	30
Oregon	Marion	412
Oregon	Multnomah	106
Oregon	Polk	49
Oregon	Umatilla	22
Oregon	Washington	225
Oregon	Yamhill	112
Pennsylvania	Adams	19
Pennsylvania	Allegheny	8
Pennsylvania	Armstrong	5
Pennsylvania	Berks	25
Pennsylvania	Bradford	6
Pennsylvania	Bucks	58
Pennsylvania	Butler	16
Pennsylvania	Cambria	5
Pennsylvania	Carbon	4

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Pennsylvania	Centre	1
Pennsylvania	Chester	31
Pennsylvania	Clearfield	7
Pennsylvania	Columbia	5
Pennsylvania	Cumberland	7
Pennsylvania	Erie	20
Pennsylvania	Fayette	4
Pennsylvania	Franklin	15
Pennsylvania	Indiana	25
Pennsylvania	Juniata	5
Pennsylvania	Lackawanna	4
Pennsylvania	Lancaster	38
Pennsylvania	Lehigh	14
Pennsylvania	Luzerne	1
Pennsylvania	Lycoming	4
Pennsylvania	Mercer	4
Pennsylvania	Monroe	4
Pennsylvania	Montgomery	36
Pennsylvania	Montour	10
Pennsylvania	Northampton	11
Pennsylvania	Northumberland	7
Pennsylvania	Perry	4
Pennsylvania	Pike	2
Pennsylvania	Schuylkill	42
Pennsylvania	Snyder	2
Pennsylvania	Somerset	13
Pennsylvania	Tioga	1
Pennsylvania	Union	1
Pennsylvania	Wayne	5
Pennsylvania	Westmoreland	13
Pennsylvania	York	21
Rhode Island	Bristol	14
Rhode Island	Washington	11
South Carolina	Abbeville	11
South Carolina	Aiken	19
South Carolina	Allendale	1
South Carolina	Anderson	33
South Carolina	Bamberg	19
South Carolina	Barnwell	8
South Carolina	Berkeley	24
South Carolina	Calhoun	25
South Carolina	Charleston	89
South Carolina	Cherokee	15
South Carolina	Chesterfield	4
South Carolina	Clarendon	33
South Carolina	Colleton	31

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
South Carolina	Darlington	42
South Carolina	Dorchester	28
South Carolina	Edgefield	27
South Carolina	Fairfield	18
South Carolina	Florence	30
South Carolina	Georgetown	77
South Carolina	Greenville	16
South Carolina	Greenwood	7
South Carolina	Hampton	13
South Carolina	Horry	48
South Carolina	Jasper	24
South Carolina	Kershaw	2
South Carolina	Lancaster	12
South Carolina	Laurens	8
South Carolina	Lee	9
South Carolina	Lexington	16
South Carolina	Marion	4
South Carolina	Marlboro	1
South Carolina	Newberry	7
South Carolina	Oconee	16
South Carolina	Orangeburg	41
South Carolina	Pickens	14
South Carolina	Richland	34
South Carolina	Spartanburg	40
South Carolina	Sumter	22
South Carolina	Williamsburg	13
South Carolina	York	39
South Dakota	Bennett	3
South Dakota	Codington	7
South Dakota	Jackson	9
South Dakota	Lake	7
South Dakota	Pennington	6
South Dakota	Spink	4
South Dakota	Yankton	3
Tennessee	Bedford	2
Tennessee	Blount	24
Tennessee	Cannon	54
Tennessee	Carter	12
Tennessee	Chester	2
Tennessee	Coffee	157
Tennessee	Davidson	2
Tennessee	De Kalb	440
Tennessee	Fentress	6
Tennessee	Franklin	580
Tennessee	Gibson	2
Tennessee	Greene	6

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Tennessee	Grundy	256
Tennessee	Hardin	17
Tennessee	Hawkins	21
Tennessee	Haywood	8
Tennessee	Henderson	2
Tennessee	Hickman	3
Tennessee	Johnson	36
Tennessee	Knox	40
Tennessee	Lake	10
Tennessee	Lawrence	4
Tennessee	Lincoln	33
Tennessee	Loudon	3
Tennessee	McMinn	5
Tennessee	McNairy	2
Tennessee	Madison	3
Tennessee	Marion	1
Tennessee	Marshall	12
Tennessee	Meigs	6
Tennessee	Moore	1
Tennessee	Overton	3
Tennessee	Putnam	5
Tennessee	Rhea	1
Tennessee	Robertson	23
Tennessee	Rutherford	5
Tennessee	Sequatchie	15
Tennessee	Sevier	10
Tennessee	Sullivan	9
Tennessee	Sumner	19
Tennessee	Van Buren	32
Tennessee	Warren	1455
Tennessee	Weakley	3
Tennessee	White	11
Tennessee	Williamson	15
Texas	Anderson	18
Texas	Atascosa	7
Texas	Austin	28
Texas	Bailey	1
Texas	Bastrop	7
Texas	Bexar	71
Texas	Blanco	2
Texas	Borden	1
Texas	Bosque	11
Texas	Bowie	18
Texas	Brazoria	109
Texas	Brazos	13
Texas	Brown	19

Data for Figure 15. Policies Earning Premium 1999 through 2011		
State	County	Policies
Texas	Burleson	6
Texas	Burnet	10
Texas	Caldwell	13
Texas	Callahan	5
Texas	Cameron	153
Texas	Cass	20
Texas	Cherokee	130
Texas	Collin	63
Texas	Colorado	43
Texas	Comal	1
Texas	Comanche	5
Texas	Dallam	17
Texas	Dallas	48
Texas	Dawson	1
Texas	Delta	4
Texas	Denton	44
Texas	Dimmit	1
Texas	Eastland	8
Texas	Ector	1
Texas	Ellis	23
Texas	Erath	36
Texas	Falls	11
Texas	Fannin	42
Texas	Fayette	3
Texas	Fort Bend	82
Texas	Franklin	5
Texas	Frio	25
Texas	Galveston	10
Texas	Gillespie	4
Texas	Gonzales	18
Texas	Grayson	20
Texas	Grimes	40
Texas	Guadalupe	34
Texas	Hamilton	1
Texas	Harris	161
Texas	Hartley	9
Texas	Hays	10
Texas	Henderson	32
Texas	Hidalgo	77
Texas	Hopkins	1
Texas	Houston	4
Texas	Hunt	19
Texas	Jack	2
Texas	Jackson	6
Texas	Jasper	6
Texas	Jeff Davis	4

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Texas	Jim Wells	3
Texas	Johnson	3
Texas	Kaufman	19
Texas	Kendall	1
Texas	Kerr	5
Texas	Lamar	3
Texas	Lamb	5
Texas	Lavaca	5
Texas	Lee	11
Texas	Leon	4
Texas	Liberty	2
Texas	Limestone	9
Texas	Live Oak	3
Texas	Lubbock	19
Texas	McLennan	20
Texas	Marion	1
Texas	Martin	5
Texas	Matagorda	31
Texas	Midland	12
Texas	Montgomery	114
Texas	Nueces	26
Texas	Orange	5
Texas	Palo Pinto	12
Texas	Parker	62
Texas	Polk	5
Texas	Potter	12
Texas	Rains	2
Texas	Randall	5
Texas	Red River	4
Texas	Rockwall	12
Texas	Runnels	2
Texas	Rusk	32
Texas	Sabine	1
Texas	San Jacinto	13
Texas	Smith	204
Texas	Swisher	5
Texas	Tarrant	38
Texas	Taylor	2
Texas	Tom Green	12
Texas	Travis	24
Texas	Tyler	8
Texas	Uvalde	8
Texas	Val Verde	9
Texas	Van Zandt	137
Texas	Walker	50
Texas	Waller	63

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Texas	Washington	69
Texas	Webb	3
Texas	Wharton	54
Texas	Wichita	2
Texas	Willacy	9
Texas	Williamson	24
Texas	Wilson	8
Texas	Wise	5
Texas	Wood	20
Texas	Zavala	2
Utah	Davis	6
Utah	Salt Lake	3
Utah	Utah	6
Utah	Weber	1
Vermont	Lamoille	10
Vermont	Windsor	11
Virginia	Accomack	53
Virginia	Amelia	4
Virginia	Augusta	27
Virginia	Bedford	10
Virginia	Campbell	10
Virginia	Caroline	3
Virginia	Charlotte	2
Virginia	Clarke	7
Virginia	Culpeper	18
Virginia	Essex	15
Virginia	Floyd	30
Virginia	Fluvanna	11
Virginia	Franklin	5
Virginia	Frederick	1
Virginia	Gloucester	22
Virginia	Halifax	8
Virginia	Hanover	30
Virginia	Henrico	5
Virginia	Isle of Wight	23
Virginia	King William	2
Virginia	Loudoun	20
Virginia	Mathews	9
Virginia	Mecklenburg	15
Virginia	Nelson	24
Virginia	New Kent	7
Virginia	Northampton	44
Virginia	Orange	20
Virginia	Patrick	13
Virginia	Pittsylvania	5
Virginia	Prince Edward	10

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Virginia	Rappahannock	9
Virginia	Richmond	21
Virginia	Roanoke	8
Virginia	Rockbridge	10
Virginia	Rockingham	11
Virginia	Shenandoah	4
Virginia	Smyth	5
Virginia	Southampton	1
Virginia	Surry	8
Virginia	Sussex	3
Virginia	Washington	7
Virginia	Westmoreland	19
Virginia	Chesapeake City	22
Virginia	Suffolk City	51
Virginia	Virginia Beach City	12
Washington	Adams	1
Washington	Benton	16
Washington	Clark	1
Washington	Franklin	25
Washington	Grant	55
Washington	Grays Harbor	14
Washington	King	25
Washington	Klickitat	3
Washington	Lewis	20
Washington	Pierce	11
Washington	Skagit	18
Washington	Snohomish	7
Washington	Spokane	6
Washington	Stevens	19
Washington	Thurston	15
Washington	Walla Walla	6
Washington	Whatcom	11
Washington	Yakima	37
West Virginia	Fayette	5
West Virginia	Greenbrier	7
West Virginia	Jefferson	15
West Virginia	Putnam	1
West Virginia	Taylor	1
West Virginia	Wirt	4
Wisconsin	Adams	2
Wisconsin	Bayfield	1
Wisconsin	Brown	8
Wisconsin	Calumet	1
Wisconsin	Chippewa	1
Wisconsin	Columbia	1
Wisconsin	Dane	17

Data for Figure 15. Policies Earning Premium 1999 through 2011

State	County	Policies
Wisconsin	Dodge	4
Wisconsin	Door	12
Wisconsin	Eau Claire	7
Wisconsin	Fond Du Lac	16
Wisconsin	Green Lake	9
Wisconsin	Jackson	23
Wisconsin	Kenosha	38
Wisconsin	Kewaunee	7
Wisconsin	Lincoln	26
Wisconsin	Manitowoc	5
Wisconsin	Marathon	5
Wisconsin	Milwaukee	2
Wisconsin	Monroe	6
Wisconsin	Oneida	2
Wisconsin	Outagamie	3
Wisconsin	Pierce	5
Wisconsin	Polk	6
Wisconsin	Portage	8
Wisconsin	Racine	2
Wisconsin	Rock	24
Wisconsin	St. Croix	5
Wisconsin	Shawano	1
Wisconsin	Walworth	32
Wisconsin	Washington	18
Wisconsin	Waukesha	34
Wisconsin	Waupaca	12
Wisconsin	Waushara	5
Wisconsin	Winnebago	9
Wisconsin	Wood	4
Wyoming	Natrona	13
Wyoming	Platte	1
Wyoming	Teton	1

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Alabama	Autauga	3
Alabama	Baldwin	5
Alabama	Calhoun	1
Alabama	Chilton	1
Alabama	Cleburne	1
Alabama	Dallas	1
Alabama	Elmore	2
Alabama	Geneva	1
Alabama	Greene	1
Alabama	Limestone	4
Alabama	Madison	1
Alabama	Mobile	23
Alabama	Montgomery	1
Alabama	Shelby	1
Arizona	Maricopa	7
Arizona	Pima	1
Arizona	Yavapai	1
Arkansas	Columbia	1
Arkansas	Poinsett	1
California	Alameda	2
California	Contra Costa	1
California	Fresno	3
California	Imperial	1
California	Kern	5
California	Los Angeles	4
California	Madera	4
California	Merced	3
California	Monterey	3
California	Orange	5
California	Riverside	8
California	Sacramento	2
California	San Bernardino	2
California	San Diego	13
California	San Joaquin	3
California	San Luis Obispo	4
California	San Mateo	1
California	Santa Barbara	1
California	Santa Clara	2
California	Santa Cruz	3
California	Solano	2
California	Sonoma	1
California	Stanislaus	4
California	Tehama	1
California	Tulare	3
California	Ventura	15
Colorado	Adams	6

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Colorado	Arapahoe	2
Colorado	Boulder	1
Colorado	Douglas	4
Colorado	El Paso	1
Colorado	Jefferson	1
Colorado	Larimer	3
Colorado	Lincoln	1
Colorado	Logan	1
Colorado	Prowers	1
Colorado	Pueblo	1
Colorado	Washington	2
Colorado	Weld	8
Connecticut	Fairfield	1
Connecticut	Hartford	2
Connecticut	Litchfield	1
Connecticut	Middlesex	1
Connecticut	New London	1
Connecticut	Tolland	2
Connecticut	Windham	1
Delaware	Sussex	1
Florida	Alachua	18
Florida	Baker	1
Florida	Brevard	8
Florida	Broward	28
Florida	Calhoun	1
Florida	Charlotte	3
Florida	Citrus	4
Florida	Clay	3
Florida	Collier	9
Florida	Columbia	2
Florida	De Soto	7
Florida	Duval	2
Florida	Escambia	1
Florida	Gadsden	6
Florida	Gilchrist	3
Florida	Glades	9
Florida	Hamilton	1
Florida	Hardee	17
Florida	Hendry	11
Florida	Hernando	8
Florida	Highlands	20
Florida	Hillsborough	49
Florida	Indian River	8
Florida	Jefferson	10
Florida	Lafayette	1
Florida	Lake	67

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Florida	Lee	69
Florida	Leon	2
Florida	Levy	5
Florida	Madison	5
Florida	Manatee	25
Florida	Marion	12
Florida	Martin	17
Florida	Miami-Dade	371
Florida	Okeechobee	5
Florida	Orange	93
Florida	Osceola	9
Florida	Palm Beach	105
Florida	Pasco	11
Florida	Pinellas	2
Florida	Polk	36
Florida	Putnam	2
Florida	St. Johns	3
Florida	St. Lucie	25
Florida	Santa Rosa	3
Florida	Sarasota	5
Florida	Seminole	2
Florida	Sumter	14
Florida	Suwannee	3
Florida	Taylor	1
Florida	Volusia	19
Georgia	Baker	1
Georgia	Carroll	1
Georgia	Catoosa	1
Georgia	Chatham	1
Georgia	Cherokee	2
Georgia	Clarke	2
Georgia	Colquitt	2
Georgia	Crawford	4
Georgia	Dawson	1
Georgia	Decatur	1
Georgia	Emanuel	2
Georgia	Evans	3
Georgia	Fayette	1
Georgia	Forsyth	1
Georgia	Fulton	1
Georgia	Grady	5
Georgia	Hancock	1
Georgia	Harris	1
Georgia	Hart	1
Georgia	Henry	2
Georgia	Jasper	1

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Georgia	Lamar	3
Georgia	Lowndes	1
Georgia	McDuffie	2
Georgia	Marion	1
Georgia	Meriwether	2
Georgia	Morgan	1
Georgia	Murray	1
Georgia	Oconee	4
Georgia	Oglethorpe	3
Georgia	Paulding	1
Georgia	Peach	3
Georgia	Pike	1
Georgia	Rabun	1
Georgia	Stewart	1
Georgia	Tattnall	1
Georgia	Thomas	1
Georgia	Toombs	1
Georgia	Towns	1
Georgia	Walton	2
Georgia	Wayne	1
Georgia	Webster	1
Georgia	Wilkes	1
Georgia	Worth	1
Hawaii	Hawaii	14
Hawaii	Honolulu	3
Hawaii	Kauai	3
Hawaii	Maui & Kalwao	1
Idaho	Gem	1
Idaho	Minidoka	1
Illinois	Boone	4
Illinois	Champaign	1
Illinois	Clinton	1
Illinois	Cook	1
Illinois	De Kalb	1
Illinois	Fayette	1
Illinois	Grundy	2
Illinois	Iroquois	2
Illinois	Kane	9
Illinois	Kankakee	2
Illinois	Kendall	1
Illinois	Lake	5
Illinois	La Salle	1
Illinois	McHenry	15
Illinois	McLean	2
Illinois	Ogle	1
Illinois	Peoria	1

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Illinois	Rock Island	1
Illinois	Tazewell	1
Illinois	Will	3
Illinois	Winnebago	1
Illinois	Woodford	1
Indiana	Hamilton	1
Indiana	Hendricks	1
Indiana	Wayne	1
Iowa	Floyd	1
Iowa	Johnson	1
Iowa	Pottawattamie	1
Iowa	Shelby	1
Iowa	Sioux	1
Iowa	Winnebago	1
Kansas	Douglas	1
Kansas	Franklin	1
Kansas	Johnson	4
Kansas	Miami	2
Kansas	Shawnee	1
Kentucky	Calloway	5
Kentucky	Hardin	1
Kentucky	Nelson	1
Kentucky	Warren	1
Louisiana	Lafayette	1
Louisiana	Plaquemines	3
Louisiana	Rapides	11
Louisiana	Saint Landry	1
Louisiana	Tangipahoa	1
Louisiana	Washington	2
Maryland	Baltimore	2
Maryland	Caroline	1
Maryland	Cecil	2
Maryland	Frederick	2
Maryland	Howard	1
Maryland	Queen Anne's	3
Maryland	Wicomico	1
Massachusetts	Middlesex	1
Massachusetts	Plymouth	1
Michigan	Allegan	3
Michigan	Berrien	1
Michigan	Eaton	1
Michigan	Huron	1
Michigan	Macomb	1
Michigan	Ottawa	7
Michigan	Van Buren	3
Minnesota	Carver	2

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Minnesota	Dakota	3
Minnesota	Ramsey	2
Minnesota	Rice	1
Minnesota	Stearns	2
Minnesota	Washington	5
Minnesota	Wright	1
Mississippi	Attala	1
Mississippi	Benton	1
Mississippi	George	10
Mississippi	Jackson	1
Mississippi	Pontotoc	1
Mississippi	Stone	1
Mississippi	Tippah	1
Missouri	Atchison	1
Missouri	Cass	2
Missouri	Clay	1
Missouri	Grundy	1
Missouri	Harrison	1
Missouri	Jackson	4
Missouri	Lincoln	1
Missouri	Linn	1
Missouri	St. Charles	1
Missouri	St. Louis	2
Montana	Cascade	1
Montana	Ravalli	1
Nebraska	Box Butte	1
Nebraska	Burt	1
Nebraska	Douglas	1
Nebraska	Keith	1
Nebraska	Lancaster	2
Nebraska	Madison	1
Nebraska	Sarpy	1
Nebraska	Saunders	1
Nebraska	Thayer	1
New Hampshire	Rockingham	1
New Jersey	Atlantic	2
New Jersey	Burlington	2
New Jersey	Cape May	1
New Jersey	Cumberland	6
New Jersey	Gloucester	1
New Jersey	Mercer	1
New Jersey	Monmouth	2
New Jersey	Salem	4
New Mexico	Dona Ana	1
New York	Cattaraugus	2
New York	Erie	2

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
New York	Suffolk	9
New York	Tompkins	1
North Carolina	Avery	1
North Carolina	Brunswick	1
North Carolina	Burke	11
North Carolina	Cabarrus	2
North Carolina	Caldwell	5
North Carolina	Catawba	1
North Carolina	Cherokee	1
North Carolina	Chowan	1
North Carolina	Duplin	1
North Carolina	Edgecombe	1
North Carolina	Franklin	1
North Carolina	Greene	1
North Carolina	Guilford	2
North Carolina	Halifax	1
North Carolina	Harnett	2
North Carolina	Lenoir	1
North Carolina	McDowell	3
North Carolina	Martin	1
North Carolina	Mecklenburg	2
North Carolina	Nash	2
North Carolina	Northampton	1
North Carolina	Pender	3
North Carolina	Pitt	2
North Carolina	Randolph	1
North Carolina	Robeson	1
North Carolina	Rockingham	2
North Carolina	Stanly	1
North Carolina	Wake	2
North Carolina	Warren	1
North Carolina	Wilson	2
North Dakota	Burleigh	1
North Dakota	La Moure	1
North Dakota	Nelson	1
Ohio	Ashtabula	1
Ohio	Clark	1
Ohio	Crawford	1
Ohio	Delaware	1
Ohio	Erie	1
Ohio	Lake	3
Ohio	Lorain	1
Ohio	Medina	1
Ohio	Miami	1
Ohio	Muskingum	1
Ohio	Pickaway	1

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Ohio	Wood	1
Oklahoma	Canadian	1
Oklahoma	Cherokee	5
Oklahoma	Cleveland	2
Oklahoma	Garvin	1
Oklahoma	Grady	1
Oklahoma	Murray	1
Oklahoma	Muskogee	1
Oklahoma	Pontotoc	1
Oklahoma	Rogers	2
Oklahoma	Wagoner	2
Oregon	Clackamas	14
Oregon	Douglas	1
Oregon	Jefferson	1
Oregon	Lane	1
Oregon	Marion	16
Oregon	Multnomah	7
Oregon	Polk	4
Oregon	Umatilla	1
Oregon	Washington	11
Oregon	Yamhill	8
Pennsylvania	Bucks	4
Pennsylvania	Chester	2
Pennsylvania	Lancaster	3
Pennsylvania	Montgomery	1
Pennsylvania	Schuylkill	1
South Carolina	Abbeville	1
South Carolina	Aiken	1
South Carolina	Anderson	2
South Carolina	Bamberg	1
South Carolina	Barnwell	2
South Carolina	Berkeley	1
South Carolina	Calhoun	1
South Carolina	Charleston	7
South Carolina	Clarendon	2
South Carolina	Colleton	3
South Carolina	Darlington	1
South Carolina	Dorchester	2
South Carolina	Edgefield	1
South Carolina	Fairfield	1
South Carolina	Florence	1
South Carolina	Georgetown	4
South Carolina	Greenville	1
South Carolina	Jasper	1
South Carolina	Lexington	1
South Carolina	Oconee	1

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
South Carolina	Orangeburg	5
South Carolina	Richland	1
South Carolina	Spartanburg	2
South Carolina	Sumter	1
South Carolina	Williamsburg	1
South Carolina	York	2
South Dakota	Jackson	1
Tennessee	Cannon	6
Tennessee	Chester	1
Tennessee	Coffee	4
Tennessee	De Kalb	20
Tennessee	Franklin	24
Tennessee	Grundy	1
Tennessee	Haywood	1
Tennessee	Henderson	1
Tennessee	Johnson	3
Tennessee	Lincoln	1
Tennessee	Marshall	1
Tennessee	Robertson	1
Tennessee	Sumner	1
Tennessee	Warren	44
Tennessee	White	1
Texas	Anderson	2
Texas	Austin	1
Texas	Bastrop	1
Texas	Bexar	2
Texas	Bowie	1
Texas	Brazoria	6
Texas	Brazos	1
Texas	Brown	2
Texas	Cameron	6
Texas	Cass	2
Texas	Cherokee	1
Texas	Collin	2
Texas	Colorado	3
Texas	Dallam	1
Texas	Dallas	1
Texas	Denton	1
Texas	Eastland	1
Texas	Ellis	2
Texas	Erath	1
Texas	Falls	1
Texas	Fannin	4
Texas	Fayette	1
Texas	Fort Bend	5
Texas	Frio	1

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Texas	Grayson	1
Texas	Grimes	2
Texas	Harris	6
Texas	Henderson	2
Texas	Hidalgo	4
Texas	Hunt	3
Texas	Jasper	1
Texas	Kerr	1
Texas	Leon	1
Texas	Limestone	1
Texas	McLennan	1
Texas	Matagorda	1
Texas	Montgomery	3
Texas	Nueces	2
Texas	Potter	2
Texas	Rockwall	1
Texas	Rusk	1
Texas	Smith	9
Texas	Tarrant	2
Texas	Tom Green	1
Texas	Uvalde	1
Texas	Van Zandt	7
Texas	Walker	2
Texas	Waller	4
Texas	Washington	2
Texas	Wharton	3
Texas	Williamson	2
Texas	Wood	1
Utah	Davis	1
Utah	Salt Lake	1
Utah	Utah	1
Virginia	Accomack	2
Virginia	Floyd	1
Virginia	Gloucester	2
Virginia	Hanover	1
Virginia	Isle of Wight	1
Virginia	Mathews	1
Virginia	Nelson	1
Virginia	Northampton	4
Virginia	Richmond	1
Virginia	Chesapeake City	1
Virginia	Suffolk City	2
Virginia	Virginia Beach City	1
Washington	Benton	1
Washington	Franklin	3
Washington	Grant	3

Data for Figure 16. Policies Earning Premium 2011

State	County	Policies
Washington	Grays Harbor	1
Washington	King	1
Washington	Lewis	1
Washington	Skagit	1
Washington	Stevens	1
Washington	Yakima	3
Wisconsin	Adams	1
Wisconsin	Door	1
Wisconsin	Eau Claire	1
Wisconsin	Fond Du Lac	1
Wisconsin	Jackson	1
Wisconsin	Kenosha	2
Wisconsin	Outagamie	1
Wisconsin	Pierce	1
Wisconsin	Rock	1
Wisconsin	Walworth	1
Wisconsin	Waukesha	2
Wyoming	Natrona	1
Wyoming	Platte	1

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Alabama	Autauga	50.4
Alabama	Baldwin	32.2
Alabama	Bullock	14.8
Alabama	Calhoun	10.7
Alabama	Chambers	1.3
Alabama	Cherokee	37.7
Alabama	Chilton	1.1
Alabama	Cleburne	1.8
Alabama	Coffee	0.7
Alabama	Cullman	21.9
Alabama	Dale	0.3
Alabama	Dallas	13.5
Alabama	Elmore	5.2
Alabama	Escambia	30.6
Alabama	Etowah	0.1
Alabama	Franklin	11.9
Alabama	Geneva	15.0
Alabama	Greene	1.4
Alabama	Lauderdale	0.3
Alabama	Lee	1.4
Alabama	Limestone	53.9
Alabama	Macon	6.1
Alabama	Madison	19.8
Alabama	Marshall	0.9
Alabama	Mobile	198.9
Alabama	Montgomery	28.0
Alabama	Morgan	0.6
Alabama	Pickens	0.0
Alabama	Pike	0.1
Alabama	Randolph	0.0
Alabama	Russell	21.9
Alabama	Saint Clair	1.3
Alabama	Shelby	21.3
Alabama	Talladega	0.1
Alabama	Tuscaloosa	0.1
Alabama	Washington	0.3
Arizona	Maricopa	207.8
Arizona	Mohave	0.1
Arizona	Pima	9.9
Arizona	Pinal	6.4
Arizona	Yavapai	14.1
Arizona	Yuma	0.3
Arkansas	Arkansas	0.1
Arkansas	Benton	0.0
Arkansas	Clay	4.6
Arkansas	Columbia	20.7

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Arkansas	Crawford	3.1
Arkansas	Faulkner	1.0
Arkansas	Independence	0.3
Arkansas	Little River	0.4
Arkansas	Madison	0.3
Arkansas	Monroe	0.2
Arkansas	Montgomery	0.2
Arkansas	Nevada	2.3
Arkansas	Newton	35.8
Arkansas	Poinsett	9.7
Arkansas	Pulaski	5.5
Arkansas	Van Buren	0.1
Arkansas	White	0.6
California	Alameda	31.7
California	Butte	15.6
California	Colusa	8.7
California	Contra Costa	79.0
California	Eldorado	0.3
California	Fresno	75.1
California	Glenn	0.8
California	Humboldt	8.5
California	Imperial	35.0
California	Kern	955.3
California	Kings	2.8
California	Lassen	1.2
California	Los Angeles	353.4
California	Madera	55.4
California	Mendocino	0.8
California	Merced	80.8
California	Monterey	252.6
California	Napa	2.2
California	Nevada	0.6
California	Orange	576.1
California	Placer	12.7
California	Riverside	416.0
California	Sacramento	81.1
California	San Benito	38.4
California	San Bernardino	37.7
California	San Diego	703.7
California	San Joaquin	216.0
California	San Luis Obispo	54.3
California	San Mateo	103.0
California	Santa Barbara	42.1
California	Santa Clara	42.1
California	Santa Cruz	58.8
California	Shasta	3.6

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
California	Siskiyou	20.5
California	Solano	234.4
California	Sonoma	23.0
California	Stanislaus	128.1
California	Sutter	27.6
California	Tehama	4.1
California	Tulare	500.4
California	Ventura	386.6
California	Yolo	0.6
California	Yuba	2.7
Colorado	Adams	114.6
Colorado	Arapahoe	28.9
Colorado	Boulder	14.2
Colorado	Broomfield	0.2
Colorado	Denver	2.9
Colorado	Douglas	25.7
Colorado	Elbert	0.5
Colorado	El Paso	40.2
Colorado	Fremont	0.1
Colorado	Garfield	0.0
Colorado	Gunnison	0.0
Colorado	Jefferson	31.9
Colorado	Larimer	61.1
Colorado	Lincoln	0.5
Colorado	Logan	0.2
Colorado	Mesa	0.5
Colorado	Montezuma	0.0
Colorado	Otero	0.3
Colorado	Prowers	0.9
Colorado	Pueblo	6.7
Colorado	Routt	0.8
Colorado	Washington	11.6
Colorado	Weld	136.6
Connecticut	Fairfield	10.2
Connecticut	Hartford	200.5
Connecticut	Litchfield	5.2
Connecticut	Middlesex	150.9
Connecticut	New Haven	36.0
Connecticut	New London	69.7
Connecticut	Tolland	6.3
Connecticut	Windham	7.3
Delaware	Kent	8.7
Delaware	New Castle	5.4
Delaware	Sussex	13.6
Florida	Alachua	166.6
Florida	Baker	59.3

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Florida	Brevard	68.1
Florida	Broward	208.0
Florida	Calhoun	6.1
Florida	Charlotte	10.9
Florida	Citrus	9.4
Florida	Clay	35.4
Florida	Collier	112.5
Florida	Columbia	16.2
Florida	Dade	694.8
Florida	De Soto	39.5
Florida	Dixie	0.5
Florida	Duval	13.7
Florida	Escambia	2.9
Florida	Flagler	48.1
Florida	Gadsden	258.5
Florida	Gilchrist	20.6
Florida	Glades	42.8
Florida	Hamilton	9.7
Florida	Hardee	147.6
Florida	Hendry	59.8
Florida	Hernando	114.2
Florida	Highlands	125.5
Florida	Hillsborough	370.6
Florida	Indian River	44.3
Florida	Jackson	11.0
Florida	Jefferson	77.3
Florida	Lafayette	20.1
Florida	Lake	670.7
Florida	Lee	570.6
Florida	Leon	6.4
Florida	Levy	121.2
Florida	Liberty	1.0
Florida	Madison	22.5
Florida	Manatee	209.5
Florida	Marion	92.2
Florida	Martin	274.1
Florida	Miami-Dade	3758.8
Florida	Monroe	0.7
Florida	Okaloosa	1.5
Florida	Okeechobee	81.3
Florida	Orange	507.7
Florida	Osceola	37.4
Florida	Palm Beach	1218.8
Florida	Pasco	54.4
Florida	Pinellas	7.0
Florida	Polk	157.5

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Florida	Putnam	88.5
Florida	St. Johns	21.1
Florida	St. Lucie	167.8
Florida	Santa Rosa	33.3
Florida	Sarasota	31.7
Florida	Seminole	82.6
Florida	Sumter	150.4
Florida	Suwannee	52.5
Florida	Taylor	34.1
Florida	Volusia	147.0
Florida	Wakulla	0.8
Florida	Walton	0.5
Georgia	Bacon	1.4
Georgia	Baker	0.9
Georgia	Baldwin	0.1
Georgia	Banks	2.6
Georgia	Bartow	6.6
Georgia	Berrien	0.8
Georgia	Brooks	2.3
Georgia	Bulloch	36.3
Georgia	Camden	0.3
Georgia	Carroll	1.1
Georgia	Catoosa	0.3
Georgia	Charlton	0.0
Georgia	Chatham	2.2
Georgia	Cherokee	5.1
Georgia	Clarke	17.7
Georgia	Clay	0.6
Georgia	Clinch	0.6
Georgia	Cobb	0.7
Georgia	Coffee	10.1
Georgia	Colquitt	17.1
Georgia	Cook	1.5
Georgia	Coweta	1.1
Georgia	Crawford	13.5
Georgia	Dawson	0.8
Georgia	Decatur	13.2
Georgia	Dooly	24.4
Georgia	Douglas	2.4
Georgia	Effingham	0.4
Georgia	Emanuel	9.3
Georgia	Evans	18.5
Georgia	Fannin	22.0
Georgia	Fayette	4.1
Georgia	Floyd	1.5
Georgia	Forsyth	9.7

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Georgia	Fulton	5.4
Georgia	Gordon	0.6
Georgia	Grady	236.2
Georgia	Greene	6.1
Georgia	Gwinnett	8.6
Georgia	Hancock	0.3
Georgia	Haralson	0.1
Georgia	Harris	1.3
Georgia	Hart	7.1
Georgia	Henry	6.4
Georgia	Houston	0.7
Georgia	Jasper	6.8
Georgia	Jeff Davis	1.9
Georgia	Johnson	5.8
Georgia	Lamar	26.3
Georgia	Lowndes	10.7
Georgia	Lumpkin	2.4
Georgia	McDuffie	180.8
Georgia	Marion	24.0
Georgia	Meriwether	50.3
Georgia	Mitchell	0.2
Georgia	Monroe	0.1
Georgia	Morgan	16.6
Georgia	Murray	13.7
Georgia	Newton	0.2
Georgia	Oconee	160.3
Georgia	Oglethorpe	10.6
Georgia	Paulding	2.4
Georgia	Peach	13.0
Georgia	Pierce	0.8
Georgia	Pike	9.7
Georgia	Quitman	0.6
Georgia	Rabun	0.5
Georgia	Randolph	36.3
Georgia	Rockdale	0.0
Georgia	Spalding	1.2
Georgia	Stewart	3.5
Georgia	Tattnall	26.7
Georgia	Thomas	18.8
Georgia	Tift	1.9
Georgia	Toombs	12.4
Georgia	Towns	0.4
Georgia	Turner	28.4
Georgia	Union	2.6
Georgia	Walker	0.1
Georgia	Walton	34.3

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Georgia	Washington	0.4
Georgia	Wayne	6.5
Georgia	Webster	1.0
Georgia	Wheeler	3.5
Georgia	Wilkes	1.8
Georgia	Worth	0.2
Hawaii	Hawaii	199.1
Hawaii	Honolulu	35.5
Hawaii	Kauai	16.0
Hawaii	Maui & Kalwao	8.2
Idaho	Ada	5.7
Idaho	Bingham	0.3
Idaho	Bonneville	0.9
Idaho	Boundary	2.0
Idaho	Canyon	3.0
Idaho	Gem	24.1
Idaho	Gooding	0.0
Idaho	Jefferson	0.0
Idaho	Kootenai	0.0
Idaho	Madison	0.2
Idaho	Minidoka	9.3
Idaho	Teton	2.1
Illinois	Adams	10.1
Illinois	Boone	73.5
Illinois	Bureau	0.1
Illinois	Carroll	0.4
Illinois	Champaign	28.9
Illinois	Christian	2.4
Illinois	Clinton	65.4
Illinois	Cook	25.2
Illinois	Cumberland	11.2
Illinois	De Kalb	108.2
Illinois	Du Page	2.2
Illinois	Fayette	2.6
Illinois	Grundy	4.4
Illinois	Hamilton	2.1
Illinois	Hancock	0.5
Illinois	Henry	7.3
Illinois	Iroquois	40.8
Illinois	Jefferson	0.1
Illinois	Jersey	1.7
Illinois	Kane	273.9
Illinois	Kankakee	165.8
Illinois	Kendall	55.8
Illinois	Lake	85.7
Illinois	La Salle	1.6

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Illinois	Lee	40.3
Illinois	Logan	0.0
Illinois	McDonough	0.0
Illinois	McHenry	223.0
Illinois	McLean	1.6
Illinois	Macon	13.1
Illinois	Madison	24.7
Illinois	Ogle	2.4
Illinois	Peoria	15.9
Illinois	Perry	0.0
Illinois	Pike	24.9
Illinois	Putnam	27.3
Illinois	Rock Island	10.1
Illinois	St. Clair	10.6
Illinois	Tazewell	4.8
Illinois	Union	22.2
Illinois	Vermilion	0.0
Illinois	Whiteside	0.9
Illinois	Will	21.7
Illinois	Winnebago	3.8
Illinois	Woodford	6.2
Indiana	Allen	1.8
Indiana	Carroll	0.7
Indiana	Clark	5.6
Indiana	De Kalb	2.2
Indiana	Hamilton	15.8
Indiana	Hancock	2.4
Indiana	Hendricks	12.7
Indiana	Howard	1.5
Indiana	Jasper	0.4
Indiana	Johnson	31.9
Indiana	Lake	2.1
Indiana	Montgomery	0.2
Indiana	St. Joseph	1.8
Indiana	Tippecanoe	0.0
Indiana	Wayne	4.2
Indiana	Whitley	18.7
Iowa	Boone	0.7
Iowa	Cerro Gordo	1.4
Iowa	Clay	0.5
Iowa	Davis	0.2
Iowa	Decatur	0.1
Iowa	Floyd	29.6
Iowa	Fremont	16.6
Iowa	Greene	1.0
Iowa	Johnson	5.9

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Iowa	Mahaska	0.7
Iowa	Marion	1.5
Iowa	Marshall	10.2
Iowa	Montgomery	5.1
Iowa	Page	6.0
Iowa	Polk	0.9
Iowa	Pottawattamie	24.7
Iowa	Shelby	7.3
Iowa	Sioux	5.1
Iowa	Warren	0.4
Iowa	Washington	0.0
Iowa	Winnebago	0.1
Iowa	Woodbury	0.3
Kansas	Butler	0.3
Kansas	Douglas	7.4
Kansas	Franklin	15.0
Kansas	Geary	2.2
Kansas	Johnson	79.1
Kansas	Linn	2.7
Kansas	Miami	8.1
Kansas	Neosho	0.9
Kansas	Reno	0.5
Kansas	Sedgwick	0.9
Kansas	Shawnee	1.7
Kansas	Trego	0.0
Kansas	Wabaunsee	2.0
Kentucky	Boone	7.0
Kentucky	Bourbon	3.6
Kentucky	Calloway	7.3
Kentucky	Carter	0.1
Kentucky	Daviess	0.3
Kentucky	Edmonson	0.6
Kentucky	Fayette	0.2
Kentucky	Franklin	0.6
Kentucky	Graves	0.1
Kentucky	Hardin	7.4
Kentucky	Henderson	1.7
Kentucky	Henry	1.5
Kentucky	Jefferson	0.5
Kentucky	Jessamine	0.0
Kentucky	Lincoln	2.1
Kentucky	McCracken	2.7
Kentucky	Madison	2.8
Kentucky	Nelson	0.5
Kentucky	Nicholas	3.9
Kentucky	Oldham	6.1

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Kentucky	Shelby	21.9
Kentucky	Spencer	6.7
Kentucky	Warren	0.1
Kentucky	Washington	14.5
Louisiana	Acadia	1.5
Louisiana	Bienville	15.4
Louisiana	Bossier	1.0
Louisiana	Caddo	1.3
Louisiana	Calcasieu	0.4
Louisiana	Catahoula	0.1
Louisiana	Claiborne	0.5
Louisiana	Concordia	1.1
Louisiana	Franklin	0.7
Louisiana	Iberia	8.8
Louisiana	Iberville	2.4
Louisiana	Jefferson	0.2
Louisiana	Jefferson Davis	0.8
Louisiana	Lafayette	3.6
Louisiana	Lincoln	0.6
Louisiana	Madison	0.3
Louisiana	Plaquemines	9.2
Louisiana	Rapides	142.8
Louisiana	Richland	0.2
Louisiana	Sabine	0.0
Louisiana	Saint Charles	0.2
Louisiana	Saint Landry	6.5
Louisiana	Saint Tammany	2.5
Louisiana	Tangipahoa	27.8
Louisiana	Vermilion	0.1
Louisiana	Vernon	0.0
Louisiana	Washington	61.6
Louisiana	Webster	0.2
Louisiana	Winn	0.1
Maine	Androscoggin	2.2
Maine	Penobscot	0.1
Maryland	Anne Arundel	6.7
Maryland	Baltimore	26.6
Maryland	Caroline	13.3
Maryland	Carroll	14.7
Maryland	Cecil	186.9
Maryland	Dorchester	1.6
Maryland	Frederick	33.2
Maryland	Harford	2.7
Maryland	Howard	26.3
Maryland	Kent	124.9
Maryland	Montgomery	39.1

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Maryland	Prince George's	2.5
Maryland	Queen Anne's	78.1
Maryland	Somerset	0.7
Maryland	Talbot	0.2
Maryland	Wicomico	110.5
Maryland	Worcester	1.3
Massachusetts	Bristol	5.6
Massachusetts	Franklin	0.2
Massachusetts	Hampden	12.1
Massachusetts	Hampshire	0.5
Massachusetts	Middlesex	70.6
Massachusetts	Plymouth	1.6
Massachusetts	Worcester	1.7
Michigan	Allegan	118.4
Michigan	Antrim	0.3
Michigan	Barry	0.1
Michigan	Berrien	30.4
Michigan	Calhoun	4.7
Michigan	Charlevoix	0.1
Michigan	Crawford	0.1
Michigan	Eaton	4.8
Michigan	Genesee	3.6
Michigan	Huron	1.2
Michigan	Ingham	0.9
Michigan	Ionia	1.9
Michigan	Jackson	5.3
Michigan	Kalamazoo	104.7
Michigan	Kent	23.5
Michigan	Lapeer	0.7
Michigan	Lenawee	5.2
Michigan	Livingston	7.0
Michigan	Macomb	27.1
Michigan	Missaukee	3.7
Michigan	Monroe	59.3
Michigan	Montcalm	26.7
Michigan	Newaygo	3.2
Michigan	Oakland	8.7
Michigan	Ottawa	440.4
Michigan	St. Clair	2.2
Michigan	Sanilac	2.9
Michigan	Shiawassee	0.2
Michigan	Tuscola	0.0
Michigan	Van Buren	47.0
Michigan	Washtenaw	26.7
Michigan	Wayne	13.2
Minnesota	Anoka	7.0

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Minnesota	Benton	0.3
Minnesota	Blue Earth	0.2
Minnesota	Carlton	0.0
Minnesota	Carver	29.2
Minnesota	Chisago	0.3
Minnesota	Cottonwood	0.7
Minnesota	Dakota	227.5
Minnesota	Douglas	0.1
Minnesota	Hennepin	2.1
Minnesota	Houston	0.4
Minnesota	Hubbard	13.4
Minnesota	Isanti	3.2
Minnesota	Itasca	0.0
Minnesota	Jackson	2.3
Minnesota	Kanabec	6.1
Minnesota	Le Sueur	1.4
Minnesota	Lincoln	1.0
Minnesota	Lyon	0.0
Minnesota	Meeker	0.1
Minnesota	Mille Lacs	0.0
Minnesota	Pine	100.2
Minnesota	Polk	9.3
Minnesota	Ramsey	18.5
Minnesota	Rice	13.9
Minnesota	Scott	8.3
Minnesota	Stearns	5.7
Minnesota	Washington	185.6
Minnesota	Wright	11.4
Mississippi	Adams	0.3
Mississippi	Attala	3.7
Mississippi	Benton	0.4
Mississippi	Copiah	39.6
Mississippi	Covington	0.4
Mississippi	George	42.2
Mississippi	Harrison	1.2
Mississippi	Hinds	0.7
Mississippi	Jackson	2.8
Mississippi	Lamar	0.5
Mississippi	Madison	0.8
Mississippi	Marshall	0.1
Mississippi	Oktibbeha	0.1
Mississippi	Pontotoc	7.5
Mississippi	Stone	20.7
Mississippi	Tippah	6.6
Mississippi	Walthall	0.0
Mississippi	Wayne	29.9

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Mississippi	Winston	0.1
Missouri	Atchison	0.6
Missouri	Bates	0.7
Missouri	Boone	1.0
Missouri	Cass	32.6
Missouri	Clay	1.4
Missouri	Cole	0.2
Missouri	Crawford	0.2
Missouri	Dade	0.2
Missouri	Franklin	0.6
Missouri	Grundy	2.6
Missouri	Harrison	4.7
Missouri	Holt	0.4
Missouri	Jackson	13.3
Missouri	Jasper	11.3
Missouri	Jefferson	4.2
Missouri	Lafayette	0.3
Missouri	Lawrence	0.2
Missouri	Lincoln	16.8
Missouri	Linn	1.8
Missouri	Macon	0.2
Missouri	Madison	2.9
Missouri	Maries	0.1
Missouri	Mississippi	0.3
Missouri	Moniteau	1.5
Missouri	Montgomery	31.2
Missouri	New Madrid	2.5
Missouri	Pike	6.0
Missouri	St. Charles	4.4
Missouri	St. Francois	1.5
Missouri	St. Louis	9.4
Missouri	Saline	0.1
Missouri	Scott	0.2
Missouri	Warren	9.6
Missouri	Webster	0.0
Missouri	St. Louis City	0.0
Montana	Beaverhead	0.1
Montana	Cascade	0.3
Montana	Flathead	9.4
Montana	Ravalli	9.1
Montana	Sanders	4.6
Nebraska	Adams	0.1
Nebraska	Box Butte	0.5
Nebraska	Burt	1.2
Nebraska	Cuming	0.6
Nebraska	Dodge	0.2

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Nebraska	Douglas	6.0
Nebraska	Keith	2.7
Nebraska	Lancaster	4.3
Nebraska	Lincoln	8.5
Nebraska	Madison	0.3
Nebraska	Sarpy	2.7
Nebraska	Saunders	12.2
Nebraska	Scotts Bluff	0.0
Nebraska	Thayer	4.2
Nebraska	Washington	0.0
Nevada	Clark	5.2
Nevada	Nye	0.4
New Hampshire	Hillsborough	1.2
New Hampshire	Merrimack	22.8
New Hampshire	Rockingham	6.9
New Hampshire	Strafford	2.4
New Jersey	Atlantic	3.5
New Jersey	Burlington	67.0
New Jersey	Camden	0.4
New Jersey	Cape May	32.6
New Jersey	Cumberland	307.0
New Jersey	Gloucester	3.0
New Jersey	Hunterdon	1.1
New Jersey	Mercer	1.6
New Jersey	Middlesex	11.8
New Jersey	Monmouth	13.1
New Jersey	Morris	7.1
New Jersey	Ocean	1.1
New Jersey	Salem	14.9
New Jersey	Somerset	3.2
New Jersey	Sussex	1.6
New Jersey	Union	6.8
New Jersey	Warren	1.8
New Mexico	Curry	0.5
New Mexico	Dona Ana	6.3
New Mexico	Lea	1.8
New Mexico	Mora	0.6
New Mexico	Quay	1.1
New York	Albany	2.0
New York	Cattaraugus	45.3
New York	Cayuga	0.4
New York	Chautauqua	5.7
New York	Dutchess	0.7
New York	Erie	59.8
New York	Genesee	0.2
New York	Monroe	0.8

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
New York	Oneida	7.2
New York	Onondaga	4.8
New York	Ontario	1.7
New York	Otsego	0.8
New York	Rensselaer	0.4
New York	Schenectady	4.9
New York	Schoharie	9.1
New York	Schuyler	0.0
New York	Suffolk	175.4
New York	Tioga	2.1
New York	Tompkins	6.0
New York	Wayne	7.1
New York	Westchester	0.9
North Carolina	Alamance	2.3
North Carolina	Alexander	1.7
North Carolina	Anson	0.3
North Carolina	Ashe	0.8
North Carolina	Avery	15.7
North Carolina	Beaufort	0.3
North Carolina	Bladen	1.3
North Carolina	Brunswick	9.0
North Carolina	Buncombe	25.6
North Carolina	Burke	169.3
North Carolina	Cabarrus	16.3
North Carolina	Caldwell	216.7
North Carolina	Caswell	1.9
North Carolina	Catawba	25.1
North Carolina	Chatham	14.8
North Carolina	Cherokee	1.0
North Carolina	Chowan	3.5
North Carolina	Cleveland	5.0
North Carolina	Columbus	6.8
North Carolina	Craven	0.9
North Carolina	Cumberland	10.3
North Carolina	Davie	0.2
North Carolina	Duplin	4.6
North Carolina	Edgecombe	45.8
North Carolina	Forsyth	3.6
North Carolina	Franklin	45.6
North Carolina	Gaston	2.5
North Carolina	Granville	0.4
North Carolina	Greene	0.5
North Carolina	Guilford	38.9
North Carolina	Halifax	2.5
North Carolina	Harnett	52.9
North Carolina	Haywood	1.8

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
North Carolina	Henderson	26.5
North Carolina	Hyde	0.2
North Carolina	Iredell	13.6
North Carolina	Jackson	0.0
North Carolina	Johnston	51.6
North Carolina	Lee	2.0
North Carolina	Lenoir	53.3
North Carolina	Lincoln	3.7
North Carolina	McDowell	82.9
North Carolina	Macon	0.0
North Carolina	Madison	8.3
North Carolina	Martin	1.6
North Carolina	Mecklenburg	145.7
North Carolina	Mitchell	0.1
North Carolina	Montgomery	2.5
North Carolina	Moore	24.4
North Carolina	Nash	33.7
North Carolina	New Hanover	3.5
North Carolina	Northampton	1.9
North Carolina	Onslow	1.7
North Carolina	Orange	2.6
North Carolina	Pasquotank	3.0
North Carolina	Pender	72.1
North Carolina	Pitt	17.9
North Carolina	Polk	5.5
North Carolina	Randolph	28.4
North Carolina	Richmond	0.1
North Carolina	Robeson	37.4
North Carolina	Rockingham	6.6
North Carolina	Rowan	22.0
North Carolina	Rutherford	2.5
North Carolina	Sampson	10.3
North Carolina	Stanly	7.6
North Carolina	Stokes	0.0
North Carolina	Surry	1.2
North Carolina	Transylvania	9.7
North Carolina	Union	18.9
North Carolina	Vance	2.8
North Carolina	Wake	52.0
North Carolina	Warren	5.0
North Carolina	Watauga	1.1
North Carolina	Wayne	33.6
North Carolina	Wilkes	7.3
North Carolina	Wilson	109.8
North Carolina	Yadkin	1.3
North Carolina	Yancey	1.8

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
North Dakota	Burleigh	1.7
North Dakota	Dickey	1.1
North Dakota	La Moure	1.6
North Dakota	McHenry	2.8
North Dakota	Nelson	6.2
North Dakota	Sargent	0.6
North Dakota	Stark	0.0
North Dakota	Ward	2.1
Ohio	Ashland	1.7
Ohio	Ashtabula	6.0
Ohio	Athens	3.8
Ohio	Auglaize	3.9
Ohio	Brown	4.0
Ohio	Carroll	70.1
Ohio	Champaign	0.3
Ohio	Clark	183.4
Ohio	Clermont	0.0
Ohio	Coshocton	1.7
Ohio	Crawford	1.9
Ohio	Cuyahoga	0.5
Ohio	Darke	0.4
Ohio	Delaware	0.6
Ohio	Erie	110.3
Ohio	Franklin	16.5
Ohio	Greene	0.2
Ohio	Hardin	0.0
Ohio	Hocking	1.5
Ohio	Lake	354.9
Ohio	Lorain	132.5
Ohio	Lucas	1.8
Ohio	Mahoning	0.1
Ohio	Medina	13.3
Ohio	Meigs	0.3
Ohio	Miami	5.5
Ohio	Montgomery	9.6
Ohio	Muskingum	7.1
Ohio	Paulding	0.1
Ohio	Pickaway	9.9
Ohio	Portage	0.9
Ohio	Richland	0.4
Ohio	Stark	2.5
Ohio	Summit	1.1
Ohio	Trumbull	0.2
Ohio	Union	2.0
Ohio	Warren	19.3
Ohio	Wayne	3.8

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Ohio	Wood	2.0
Oklahoma	Canadian	1.4
Oklahoma	Cherokee	333.4
Oklahoma	Cleveland	36.8
Oklahoma	Comanche	0.1
Oklahoma	Garvin	10.4
Oklahoma	Grady	0.6
Oklahoma	Kingfisher	0.5
Oklahoma	McClain	6.4
Oklahoma	Mayes	0.1
Oklahoma	Murray	2.5
Oklahoma	Muskogee	72.4
Oklahoma	Oklahoma	11.4
Oklahoma	Okmulgee	0.1
Oklahoma	Payne	0.0
Oklahoma	Pontotoc	1.9
Oklahoma	Rogers	14.1
Oklahoma	Wagoner	10.7
Oregon	Benton	0.8
Oregon	Clackamas	1011.9
Oregon	Columbia	23.8
Oregon	Curry	3.1
Oregon	Deschutes	0.3
Oregon	Douglas	34.9
Oregon	Hood River	1.7
Oregon	Jefferson	3.1
Oregon	Josephine	0.0
Oregon	Klamath	1.8
Oregon	Lane	27.1
Oregon	Lincoln	0.5
Oregon	Linn	32.7
Oregon	Marion	765.7
Oregon	Multnomah	189.4
Oregon	Polk	75.1
Oregon	Umatilla	55.7
Oregon	Washington	1205.4
Oregon	Yamhill	922.5
Pennsylvania	Adams	8.9
Pennsylvania	Allegheny	0.2
Pennsylvania	Armstrong	1.1
Pennsylvania	Berks	18.6
Pennsylvania	Bradford	6.5
Pennsylvania	Bucks	24.2
Pennsylvania	Butler	1.4
Pennsylvania	Cambria	2.6
Pennsylvania	Carbon	0.1

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Pennsylvania	Centre	0.0
Pennsylvania	Chester	41.8
Pennsylvania	Clearfield	0.3
Pennsylvania	Columbia	1.7
Pennsylvania	Cumberland	0.2
Pennsylvania	Erie	72.2
Pennsylvania	Fayette	1.0
Pennsylvania	Franklin	1.4
Pennsylvania	Indiana	8.5
Pennsylvania	Juniata	0.1
Pennsylvania	Lackawanna	1.9
Pennsylvania	Lancaster	15.6
Pennsylvania	Lehigh	12.4
Pennsylvania	Luzerne	0.2
Pennsylvania	Lycoming	1.6
Pennsylvania	Mercer	0.4
Pennsylvania	Monroe	1.7
Pennsylvania	Montgomery	14.0
Pennsylvania	Montour	18.3
Pennsylvania	Northampton	2.7
Pennsylvania	Northumberland	2.7
Pennsylvania	Perry	0.0
Pennsylvania	Pike	0.2
Pennsylvania	Schuylkill	54.1
Pennsylvania	Snyder	0.1
Pennsylvania	Somerset	4.4
Pennsylvania	Tioga	0.1
Pennsylvania	Union	0.1
Pennsylvania	Wayne	0.5
Pennsylvania	Westmoreland	53.5
Pennsylvania	York	4.2
Rhode Island	Bristol	5.6
Rhode Island	Washington	1.9
South Carolina	Abbeville	29.0
South Carolina	Aiken	7.3
South Carolina	Allendale	0.1
South Carolina	Anderson	31.4
South Carolina	Bamberg	17.0
South Carolina	Barnwell	3.0
South Carolina	Berkeley	148.4
South Carolina	Calhoun	17.6
South Carolina	Charleston	43.3
South Carolina	Cherokee	3.7
South Carolina	Chesterfield	2.9
South Carolina	Clarendon	10.4
South Carolina	Colleton	20.3

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
South Carolina	Darlington	8.3
South Carolina	Dorchester	15.3
South Carolina	Edgefield	179.4
South Carolina	Fairfield	7.4
South Carolina	Florence	3.0
South Carolina	Georgetown	74.3
South Carolina	Greenville	3.3
South Carolina	Greenwood	0.8
South Carolina	Hampton	1.7
South Carolina	Horry	5.1
South Carolina	Jasper	5.7
South Carolina	Kershaw	0.2
South Carolina	Lancaster	1.4
South Carolina	Laurens	1.3
South Carolina	Lee	5.2
South Carolina	Lexington	5.2
South Carolina	Marion	0.4
South Carolina	Marlboro	32.1
South Carolina	Newberry	0.8
South Carolina	Oconee	6.2
South Carolina	Orangeburg	109.4
South Carolina	Pickens	18.9
South Carolina	Richland	5.6
South Carolina	Spartanburg	29.1
South Carolina	Sumter	5.5
South Carolina	Williamsburg	11.2
South Carolina	York	135.0
South Dakota	Bennett	0.1
South Dakota	Codington	2.0
South Dakota	Jackson	1.4
South Dakota	Lake	4.9
South Dakota	Pennington	2.9
South Dakota	Spink	0.8
South Dakota	Yankton	3.1
Tennessee	Bedford	0.1
Tennessee	Blount	7.4
Tennessee	Cannon	23.4
Tennessee	Carter	0.9
Tennessee	Chester	0.0
Tennessee	Coffee	177.7
Tennessee	Davidson	0.4
Tennessee	De Kalb	392.2
Tennessee	Fentress	2.7
Tennessee	Franklin	390.1
Tennessee	Gibson	0.2
Tennessee	Greene	0.4

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Tennessee	Grundy	173.4
Tennessee	Hardin	3.1
Tennessee	Hawkins	2.3
Tennessee	Haywood	0.6
Tennessee	Henderson	0.0
Tennessee	Hickman	0.1
Tennessee	Johnson	12.2
Tennessee	Knox	7.5
Tennessee	Lake	1.2
Tennessee	Lawrence	0.6
Tennessee	Lincoln	10.3
Tennessee	Loudon	0.6
Tennessee	McMinn	0.7
Tennessee	McNairy	0.2
Tennessee	Madison	0.9
Tennessee	Marion	0.1
Tennessee	Marshall	13.2
Tennessee	Meigs	0.1
Tennessee	Moore	0.1
Tennessee	Overton	0.2
Tennessee	Putnam	0.5
Tennessee	Rhea	0.0
Tennessee	Robertson	5.3
Tennessee	Rutherford	0.1
Tennessee	Sequatchie	12.3
Tennessee	Sevier	1.1
Tennessee	Sullivan	0.6
Tennessee	Sumner	20.3
Tennessee	Van Buren	14.3
Tennessee	Warren	1243.0
Tennessee	Weakley	0.3
Tennessee	White	1.4
Tennessee	Williamson	10.7
Texas	Anderson	30.6
Texas	Atascosa	3.4
Texas	Austin	12.3
Texas	Bailey	0.4
Texas	Bastrop	1.7
Texas	Bexar	143.0
Texas	Blanco	1.1
Texas	Borden	0.0
Texas	Bosque	29.1
Texas	Bowie	3.7
Texas	Brazoria	31.3
Texas	Brazos	2.5
Texas	Brown	27.6

 Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Texas	Burleson	0.6
Texas	Burnet	4.1
Texas	Caldwell	1.8
Texas	Callahan	0.2
Texas	Cameron	51.6
Texas	Cass	2.6
Texas	Cherokee	86.9
Texas	Collin	8.3
Texas	Colorado	24.5
Texas	Comal	0.0
Texas	Comanche	0.5
Texas	Dallam	0.8
Texas	Dallas	8.0
Texas	Dawson	0.1
Texas	Delta	0.6
Texas	Denton	18.7
Texas	Dimmit	1.1
Texas	Eastland	0.9
Texas	Ector	0.0
Texas	Ellis	6.1
Texas	Erath	58.9
Texas	Falls	0.8
Texas	Fannin	25.0
Texas	Fayette	1.7
Texas	Fort Bend	197.9
Texas	Franklin	0.0
Texas	Frio	18.8
Texas	Galveston	7.3
Texas	Gillespie	0.3
Texas	Gonzales	6.5
Texas	Grayson	14.7
Texas	Grimes	11.1
Texas	Guadalupe	25.6
Texas	Hamilton	0.0
Texas	Harris	57.5
Texas	Hartley	1.0
Texas	Hays	1.3
Texas	Henderson	41.8
Texas	Hidalgo	14.6
Texas	Hopkins	0.1
Texas	Houston	1.2
Texas	Hunt	8.0
Texas	Jack	0.1
Texas	Jackson	0.2
Texas	Jasper	1.8
Texas	Jeff Davis	5.1

 Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Texas	Jim Wells	0.3
Texas	Johnson	0.6
Texas	Kaufman	1.5
Texas	Kendall	0.0
Texas	Kerr	1.1
Texas	Lamar	0.2
Texas	Lamb	9.0
Texas	Lavaca	1.1
Texas	Lee	8.9
Texas	Leon	7.5
Texas	Liberty	0.7
Texas	Limestone	6.9
Texas	Live Oak	1.7
Texas	Lubbock	3.7
Texas	McLennan	10.6
Texas	Marion	0.2
Texas	Martin	0.6
Texas	Matagorda	8.7
Texas	Midland	3.1
Texas	Montgomery	76.3
Texas	Nueces	17.9
Texas	Orange	2.5
Texas	Palo Pinto	1.8
Texas	Parker	14.0
Texas	Polk	10.5
Texas	Potter	1.2
Texas	Rains	0.2
Texas	Randall	0.6
Texas	Red River	0.4
Texas	Rockwall	2.7
Texas	Runnels	0.6
Texas	Rusk	27.0
Texas	Sabine	0.0
Texas	San Jacinto	2.4
Texas	Smith	121.9
Texas	Swisher	3.3
Texas	Tarrant	12.1
Texas	Taylor	0.3
Texas	Tom Green	1.6
Texas	Travis	6.3
Texas	Tyler	15.9
Texas	Uvalde	1.7
Texas	Val Verde	1.0
Texas	Van Zandt	252.8
Texas	Walker	44.5
Texas	Waller	88.3

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Texas	Washington	10.8
Texas	Webb	0.3
Texas	Wharton	247.2
Texas	Wichita	0.3
Texas	Willacy	0.6
Texas	Williamson	2.2
Texas	Wilson	1.1
Texas	Wise	0.4
Texas	Wood	41.4
Texas	Zavala	0.7
Utah	Davis	8.2
Utah	Salt Lake	1.0
Utah	Utah	1.6
Utah	Weber	2.2
Vermont	Lamoille	0.2
Vermont	Windsor	2.0
Virginia	Accomack	41.0
Virginia	Amelia	2.7
Virginia	Augusta	24.5
Virginia	Bedford	2.2
Virginia	Campbell	2.1
Virginia	Caroline	1.3
Virginia	Charlotte	0.2
Virginia	Clarke	3.6
Virginia	Culpeper	12.1
Virginia	Essex	7.3
Virginia	Floyd	34.0
Virginia	Fluvanna	3.3
Virginia	Franklin	0.3
Virginia	Frederick	0.0
Virginia	Gloucester	11.3
Virginia	Halifax	29.3
Virginia	Hanover	11.1
Virginia	Henrico	0.6
Virginia	Isle of Wight	24.7
Virginia	King William	0.5
Virginia	Loudoun	7.5
Virginia	Mathews	7.4
Virginia	Mecklenburg	2.4
Virginia	Nelson	36.1
Virginia	New Kent	1.5
Virginia	Northampton	106.0
Virginia	Orange	13.1
Virginia	Patrick	1.0
Virginia	Pittsylvania	1.1
Virginia	Prince Edward	3.5

Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Virginia	Rappahannock	0.7
Virginia	Richmond	22.9
Virginia	Roanoke	1.2
Virginia	Rockbridge	0.4
Virginia	Rockingham	5.1
Virginia	Shenandoah	0.1
Virginia	Smyth	0.0
Virginia	Southampton	0.4
Virginia	Surry	0.4
Virginia	Sussex	0.1
Virginia	Washington	0.4
Virginia	Westmoreland	80.5
Virginia	Chesapeake City	36.3
Virginia	Suffolk City	56.8
Virginia	Virginia Beach City	3.2
Washington	Adams	2.2
Washington	Benton	5.6
Washington	Clark	0.0
Washington	Franklin	12.1
Washington	Grant	54.2
Washington	Grays Harbor	39.1
Washington	King	9.6
Washington	Klickitat	0.5
Washington	Lewis	63.4
Washington	Pierce	3.2
Washington	Skagit	32.3
Washington	Snohomish	14.5
Washington	Spokane	6.7
Washington	Stevens	56.3
Washington	Thurston	19.2
Washington	Walla Walla	1.2
Washington	Whatcom	14.5
Washington	Yakima	37.2
West Virginia	Fayette	1.8
West Virginia	Greenbrier	0.5
West Virginia	Jefferson	1.6
West Virginia	Putnam	0.2
West Virginia	Taylor	0.5
West Virginia	Wirt	1.3
Wisconsin	Adams	0.9
Wisconsin	Bayfield	0.1
Wisconsin	Brown	5.1
Wisconsin	Calumet	0.8
Wisconsin	Chippewa	0.1
Wisconsin	Columbia	0.1
Wisconsin	Dane	10.6

 Data for Figure 17. Liability 1999 through 2011

State	County	Liability (Millions of \$)
Wisconsin	Dodge	0.1
Wisconsin	Door	12.0
Wisconsin	Eau Claire	6.6
Wisconsin	Fond Du Lac	12.5
Wisconsin	Green Lake	5.1
Wisconsin	Jackson	42.1
Wisconsin	Kenosha	98.0
Wisconsin	Kewaunee	5.5
Wisconsin	Lincoln	5.1
Wisconsin	Manitowoc	0.3
Wisconsin	Marathon	0.1
Wisconsin	Milwaukee	0.1
Wisconsin	Monroe	0.4
Wisconsin	Oneida	0.0
Wisconsin	Outagamie	1.9
Wisconsin	Pierce	0.2
Wisconsin	Polk	0.9
Wisconsin	Portage	3.6
Wisconsin	Racine	0.6
Wisconsin	Rock	26.6
Wisconsin	St. Croix	2.0
Wisconsin	Shawano	0.0
Wisconsin	Walworth	8.1
Wisconsin	Washington	7.5
Wisconsin	Waukesha	30.1
Wisconsin	Waupaca	1.2
Wisconsin	Waushara	1.3
Wisconsin	Winnebago	1.2
Wisconsin	Wood	6.1
Wyoming	Natrona	3.2
Wyoming	Platte	0.0
Wyoming	Teton	0.2

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Alabama	Autauga	5.9
Alabama	Baldwin	9.2
Alabama	Calhoun	1.7
Alabama	Chilton	0.2
Alabama	Cleburne	0.4
Alabama	Dallas	0.1
Alabama	Elmore	0.7
Alabama	Geneva	1.4
Alabama	Greene	0.9
Alabama	Limestone	1.2
Alabama	Madison	0.9
Alabama	Mobile	18.4
Alabama	Montgomery	1.7
Alabama	Shelby	2.6
Arizona	Maricopa	12.0
Arizona	Pima	0.3
Arizona	Yavapai	0.7
Arkansas	Columbia	1.7
Arkansas	Poinsett	0.6
California	Alameda	1.4
California	Contra Costa	0.2
California	Fresno	3.8
California	Imperial	0.4
California	Kern	34.2
California	Los Angeles	5.6
California	Madera	3.4
California	Merced	2.4
California	Monterey	7.7
California	Orange	12.3
California	Riverside	31.9
California	Sacramento	2.1
California	San Bernardino	0.4
California	San Diego	28.4
California	San Joaquin	11.0
California	San Luis Obispo	12.6
California	San Mateo	3.8
California	Santa Barbara	0.2
California	Santa Clara	2.7
California	Santa Cruz	2.3
California	Solano	8.2
California	Sonoma	0.0
California	Stanislaus	18.5
California	Tehama	0.6
California	Tulare	45.8
California	Ventura	30.4
Colorado	Adams	8.2

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Colorado	Arapahoe	1.1
Colorado	Boulder	0.1
Colorado	Douglas	1.7
Colorado	El Paso	0.0
Colorado	Jefferson	0.2
Colorado	Larimer	5.7
Colorado	Lincoln	0.1
Colorado	Logan	0.0
Colorado	Prowers	0.0
Colorado	Pueblo	0.6
Colorado	Washington	2.5
Colorado	Weld	7.8
Connecticut	Fairfield	0.4
Connecticut	Hartford	10.2
Connecticut	Litchfield	0.7
Connecticut	Middlesex	7.7
Connecticut	New London	7.2
Connecticut	Tolland	1.0
Connecticut	Windham	0.4
Delaware	Sussex	1.0
Florida	Alachua	14.6
Florida	Baker	0.1
Florida	Brevard	3.7
Florida	Broward	4.4
Florida	Calhoun	0.8
Florida	Charlotte	0.7
Florida	Citrus	1.6
Florida	Clay	4.1
Florida	Collier	4.7
Florida	Columbia	0.8
Florida	De Soto	2.9
Florida	Duval	0.6
Florida	Escambia	0.3
Florida	Gadsden	17.0
Florida	Gilchrist	0.7
Florida	Glades	2.3
Florida	Hamilton	2.4
Florida	Hardee	8.4
Florida	Hendry	5.6
Florida	Hernando	6.5
Florida	Highlands	6.0
Florida	Hillsborough	20.0
Florida	Indian River	7.5
Florida	Jefferson	6.4
Florida	Lafayette	0.9
Florida	Lake	37.4

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Florida	Lee	34.8
Florida	Leon	0.8
Florida	Levy	10.7
Florida	Madison	3.1
Florida	Manatee	12.7
Florida	Marion	6.7
Florida	Martin	13.9
Florida	Miami-Dade	312.8
Florida	Okeechobee	2.4
Florida	Orange	25.5
Florida	Osceola	1.0
Florida	Palm Beach	67.4
Florida	Pasco	2.1
Florida	Pinellas	0.1
Florida	Polk	11.3
Florida	Putnam	0.9
Florida	St. Johns	0.6
Florida	St. Lucie	16.6
Florida	Santa Rosa	2.7
Florida	Sarasota	1.9
Florida	Seminole	0.7
Florida	Sumter	11.2
Florida	Suwannee	2.4
Florida	Taylor	0.2
Florida	Volusia	6.8
Georgia	Baker	0.2
Georgia	Carroll	0.0
Georgia	Catoosa	0.2
Georgia	Chatham	0.3
Georgia	Cherokee	0.6
Georgia	Clarke	0.6
Georgia	Colquitt	2.7
Georgia	Crawford	0.9
Georgia	Dawson	0.0
Georgia	Decatur	1.0
Georgia	Emanuel	1.1
Georgia	Evans	0.6
Georgia	Fayette	0.4
Georgia	Forsyth	0.3
Georgia	Fulton	0.7
Georgia	Grady	17.6
Georgia	Hancock	0.3
Georgia	Harris	0.2
Georgia	Hart	0.6
Georgia	Henry	1.6
Georgia	Jasper	0.5

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Georgia	Lamar	3.1
Georgia	Lowndes	0.4
Georgia	McDuffie	13.5
Georgia	Marion	0.1
Georgia	Meriwether	2.4
Georgia	Morgan	0.6
Georgia	Murray	0.1
Georgia	Oconee	10.7
Georgia	Oglethorpe	3.1
Georgia	Paulding	0.5
Georgia	Peach	1.7
Georgia	Pike	2.4
Georgia	Rabun	0.0
Georgia	Stewart	0.1
Georgia	Tattnall	0.4
Georgia	Thomas	5.6
Georgia	Toombs	0.9
Georgia	Towns	0.0
Georgia	Walton	2.1
Georgia	Wayne	0.1
Georgia	Webster	0.1
Georgia	Wilkes	0.6
Georgia	Worth	0.1
Hawaii	Hawaii	12.7
Hawaii	Honolulu	0.7
Hawaii	Kauai	1.8
Hawaii	Maui & Kalwao	0.1
Idaho	Gem	2.4
Idaho	Minidoka	2.0
Illinois	Boone	8.0
Illinois	Champaign	3.9
Illinois	Clinton	5.4
Illinois	Cook	0.0
Illinois	De Kalb	0.7
Illinois	Fayette	0.3
Illinois	Grundy	0.9
Illinois	Iroquois	1.3
Illinois	Kane	8.5
Illinois	Kankakee	8.9
Illinois	Kendall	2.3
Illinois	Lake	1.6
Illinois	La Salle	0.2
Illinois	McHenry	13.8
Illinois	McLean	0.4
Illinois	Ogle	0.1
Illinois	Peoria	1.4

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Illinois	Rock Island	0.3
Illinois	Tazewell	0.7
Illinois	Will	1.0
Illinois	Winnebago	0.3
Illinois	Woodford	0.2
Indiana	Hamilton	1.0
Indiana	Hendricks	1.1
Indiana	Wayne	0.4
Iowa	Floyd	1.2
Iowa	Johnson	1.4
Iowa	Pottawattamie	4.3
Iowa	Shelby	0.8
Iowa	Sioux	0.3
Iowa	Winnebago	0.0
Kansas	Douglas	0.5
Kansas	Franklin	1.9
Kansas	Johnson	4.3
Kansas	Miami	0.9
Kansas	Shawnee	0.2
Kentucky	Calloway	1.7
Kentucky	Hardin	0.7
Kentucky	Nelson	0.1
Kentucky	Warren	0.1
Louisiana	Lafayette	0.4
Louisiana	Plaquemines	3.5
Louisiana	Rapides	10.6
Louisiana	Saint Landry	0.7
Louisiana	Tangipahoa	3.2
Louisiana	Washington	5.5
Maryland	Baltimore	1.5
Maryland	Caroline	0.3
Maryland	Cecil	18.3
Maryland	Frederick	3.2
Maryland	Howard	3.3
Maryland	Queen Anne's	6.1
Maryland	Wicomico	1.1
Massachusetts	Middlesex	5.1
Massachusetts	Plymouth	0.2
Michigan	Allegan	8.6
Michigan	Berrien	0.6
Michigan	Eaton	0.0
Michigan	Huron	0.2
Michigan	Macomb	0.5
Michigan	Ottawa	27.6
Michigan	Van Buren	3.9
Minnesota	Carver	2.5

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Minnesota	Dakota	15.4
Minnesota	Ramsey	1.5
Minnesota	Rice	0.8
Minnesota	Stearns	0.7
Minnesota	Washington	10.3
Minnesota	Wright	1.0
Mississippi	Attala	0.1
Mississippi	Benton	0.0
Mississippi	George	3.4
Mississippi	Jackson	0.1
Mississippi	Pontotoc	1.1
Mississippi	Stone	3.5
Mississippi	Tippah	0.9
Missouri	Atchison	0.1
Missouri	Cass	2.2
Missouri	Clay	0.3
Missouri	Grundy	0.1
Missouri	Harrison	0.2
Missouri	Jackson	4.9
Missouri	Lincoln	1.5
Missouri	Linn	0.4
Missouri	St. Charles	0.2
Missouri	St. Louis	0.6
Montana	Cascade	0.0
Montana	Ravalli	0.5
Nebraska	Box Butte	0.1
Nebraska	Burt	0.0
Nebraska	Douglas	0.1
Nebraska	Keith	0.3
Nebraska	Lancaster	0.8
Nebraska	Madison	0.0
Nebraska	Sarpy	0.2
Nebraska	Saunders	1.8
Nebraska	Thayer	0.3
New Hampshire	Rockingham	0.8
New Jersey	Atlantic	0.3
New Jersey	Burlington	1.7
New Jersey	Cape May	1.3
New Jersey	Cumberland	22.0
New Jersey	Gloucester	0.0
New Jersey	Mercer	0.4
New Jersey	Monmouth	2.9
New Jersey	Salem	0.8
New Mexico	Dona Ana	1.5
New York	Cattaraugus	3.8
New York	Erie	4.0

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
New York	Suffolk	7.7
New York	Tompkins	0.5
North Carolina	Avery	0.0
North Carolina	Brunswick	0.0
North Carolina	Burke	14.7
North Carolina	Cabarrus	1.4
North Carolina	Caldwell	1.5
North Carolina	Catawba	1.5
North Carolina	Cherokee	0.0
North Carolina	Chowan	0.2
North Carolina	Duplin	0.1
North Carolina	Edgecombe	5.3
North Carolina	Franklin	6.9
North Carolina	Greene	0.0
North Carolina	Guilford	2.5
North Carolina	Halifax	0.6
North Carolina	Harnett	11.5
North Carolina	Lenoir	5.4
North Carolina	McDowell	10.1
North Carolina	Martin	0.1
North Carolina	Mecklenburg	7.7
North Carolina	Nash	0.2
North Carolina	Northampton	0.0
North Carolina	Pender	1.9
North Carolina	Pitt	1.5
North Carolina	Randolph	2.8
North Carolina	Robeson	1.1
North Carolina	Rockingham	1.4
North Carolina	Stanly	0.4
North Carolina	Wake	3.0
North Carolina	Warren	0.1
North Carolina	Wilson	15.1
North Dakota	Burleigh	0.2
North Dakota	La Moure	0.4
North Dakota	Nelson	0.8
Ohio	Ashtabula	0.1
Ohio	Clark	11.2
Ohio	Crawford	0.2
Ohio	Delaware	0.1
Ohio	Erie	10.5
Ohio	Lake	16.6
Ohio	Lorain	9.3
Ohio	Medina	0.7
Ohio	Miami	0.2
Ohio	Muskingum	0.3
Ohio	Pickaway	1.0

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Ohio	Wood	1.5
Oklahoma	Canadian	0.1
Oklahoma	Cherokee	32.2
Oklahoma	Cleveland	1.3
Oklahoma	Garvin	1.1
Oklahoma	Grady	0.1
Oklahoma	Murray	0.7
Oklahoma	Muskogee	2.6
Oklahoma	Pontotoc	0.3
Oklahoma	Rogers	1.0
Oklahoma	Wagoner	1.1
Oregon	Clackamas	45.5
Oregon	Douglas	0.2
Oregon	Jefferson	0.2
Oregon	Lane	3.4
Oregon	Marion	80.0
Oregon	Multnomah	16.1
Oregon	Polk	3.6
Oregon	Umatilla	3.4
Oregon	Washington	60.6
Oregon	Yamhill	62.2
Pennsylvania	Bucks	2.4
Pennsylvania	Chester	5.4
Pennsylvania	Lancaster	1.5
Pennsylvania	Montgomery	0.6
Pennsylvania	Schuylkill	4.4
South Carolina	Abbeville	4.3
South Carolina	Aiken	0.2
South Carolina	Anderson	1.7
South Carolina	Bamberg	2.2
South Carolina	Barnwell	0.6
South Carolina	Berkeley	10.0
South Carolina	Calhoun	1.6
South Carolina	Charleston	3.2
South Carolina	Clarendon	0.2
South Carolina	Colleton	1.7
South Carolina	Darlington	0.0
South Carolina	Dorchester	0.2
South Carolina	Edgefield	7.2
South Carolina	Fairfield	0.9
South Carolina	Florence	0.2
South Carolina	Georgetown	7.0
South Carolina	Greenville	0.1
South Carolina	Jasper	0.2
South Carolina	Lexington	0.5
South Carolina	Oconee	0.3

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
South Carolina	Orangeburg	8.9
South Carolina	Richland	0.2
South Carolina	Spartanburg	0.9
South Carolina	Sumter	0.4
South Carolina	Williamsburg	1.0
South Carolina	York	5.8
South Dakota	Jackson	0.2
Tennessee	Cannon	2.5
Tennessee	Chester	0.0
Tennessee	Coffee	7.0
Tennessee	De Kalb	22.1
Tennessee	Franklin	11.7
Tennessee	Grundy	0.2
Tennessee	Haywood	0.0
Tennessee	Henderson	0.0
Tennessee	Johnson	1.6
Tennessee	Lincoln	0.5
Tennessee	Marshall	1.4
Tennessee	Robertson	0.1
Tennessee	Sumner	1.6
Tennessee	Warren	31.7
Tennessee	White	0.3
Texas	Anderson	2.4
Texas	Austin	0.2
Texas	Bastrop	0.3
Texas	Bexar	1.8
Texas	Bowie	0.4
Texas	Brazoria	1.3
Texas	Brazos	0.3
Texas	Brown	3.9
Texas	Cameron	1.9
Texas	Cass	0.2
Texas	Cherokee	0.9
Texas	Collin	0.3
Texas	Colorado	2.1
Texas	Dallam	0.1
Texas	Dallas	0.3
Texas	Denton	0.2
Texas	Eastland	0.2
Texas	Ellis	0.9
Texas	Erath	2.6
Texas	Falls	0.0
Texas	Fannin	3.1
Texas	Fayette	0.4
Texas	Fort Bend	7.8
Texas	Frio	0.8

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Texas	Grayson	4.1
Texas	Grimes	0.1
Texas	Harris	1.6
Texas	Henderson	3.8
Texas	Hidalgo	0.6
Texas	Hunt	1.4
Texas	Jasper	0.5
Texas	Kerr	0.1
Texas	Leon	2.6
Texas	Limestone	0.4
Texas	McLennan	0.1
Texas	Matagorda	0.3
Texas	Montgomery	0.6
Texas	Nueces	2.0
Texas	Potter	0.2
Texas	Rockwall	0.3
Texas	Rusk	2.5
Texas	Smith	8.9
Texas	Tarrant	1.1
Texas	Tom Green	0.2
Texas	Uvalde	0.3
Texas	Van Zandt	16.0
Texas	Walker	1.4
Texas	Waller	10.3
Texas	Washington	0.3
Texas	Wharton	21.5
Texas	Williamson	0.1
Texas	Wood	2.0
Utah	Davis	1.0
Utah	Salt Lake	0.1
Utah	Utah	0.5
Virginia	Accomack	3.6
Virginia	Floyd	0.9
Virginia	Gloucester	1.0
Virginia	Hanover	0.5
Virginia	Isle of Wight	3.3
Virginia	Mathews	0.7
Virginia	Nelson	3.9
Virginia	Northampton	12.4
Virginia	Richmond	0.1
Virginia	Chesapeake City	3.2
Virginia	Suffolk City	6.6
Virginia	Virginia Beach City	0.2
Washington	Benton	1.1
Washington	Franklin	3.8
Washington	Grant	4.2

Data for Figure 18. Liability 2011

State	County	Liability (Millions of \$)
Washington	Grays Harbor	3.8
Washington	King	0.8
Washington	Lewis	0.9
Washington	Skagit	2.7
Washington	Stevens	5.9
Washington	Yakima	11.0
Wisconsin	Adams	0.4
Wisconsin	Door	1.4
Wisconsin	Eau Claire	0.0
Wisconsin	Fond Du Lac	0.8
Wisconsin	Jackson	3.6
Wisconsin	Kenosha	9.0
Wisconsin	Outagamie	0.2
Wisconsin	Pierce	0.0
Wisconsin	Rock	0.1
Wisconsin	Walworth	0.7
Wisconsin	Waukesha	0.3
Wyoming	Natrona	0.2
Wyoming	Platte	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Alabama	Autauga	0.3
Alabama	Baldwin	0.0
Alabama	Bullock	0.0
Alabama	Calhoun	0.0
Alabama	Chambers	0.0
Alabama	Cherokee	0.0
Alabama	Chilton	0.0
Alabama	Cleburne	0.0
Alabama	Coffee	0.0
Alabama	Cullman	1.7
Alabama	Dale	0.0
Alabama	Dallas	0.0
Alabama	Elmore	0.0
Alabama	Escambia	0.0
Alabama	Etowah	0.0
Alabama	Franklin	0.0
Alabama	Geneva	0.0
Alabama	Greene	0.0
Alabama	Lauderdale	0.1
Alabama	Lee	0.0
Alabama	Limestone	0.2
Alabama	Macon	0.0
Alabama	Madison	0.7
Alabama	Marshall	0.0
Alabama	Mobile	1.0
Alabama	Montgomery	0.0
Alabama	Morgan	0.0
Alabama	Pickens	0.0
Alabama	Pike	0.0
Alabama	Randolph	0.0
Alabama	Russell	0.0
Alabama	Saint Clair	0.0
Alabama	Shelby	0.0
Alabama	Talladega	0.0
Alabama	Tuscaloosa	0.0
Alabama	Washington	0.0
Arizona	Maricopa	0.0
Arizona	Mohave	0.0
Arizona	Pima	0.0
Arizona	Pinal	0.0
Arizona	Yavapai	0.0
Arizona	Yuma	0.0
Arkansas	Arkansas	0.0
Arkansas	Benton	0.0
Arkansas	Clay	0.0
Arkansas	Columbia	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Arkansas	Crawford	0.0
Arkansas	Faulkner	0.0
Arkansas	Independence	0.0
Arkansas	Little River	0.0
Arkansas	Madison	0.0
Arkansas	Monroe	0.0
Arkansas	Montgomery	0.0
Arkansas	Nevada	0.0
Arkansas	Newton	0.0
Arkansas	Poinsett	0.0
Arkansas	Pulaski	0.0
Arkansas	Van Buren	0.0
Arkansas	White	0.1
California	Alameda	0.0
California	Butte	0.1
California	Colusa	0.0
California	Contra Costa	0.0
California	Eldorado	0.0
California	Fresno	0.0
California	Glenn	0.0
California	Humboldt	0.0
California	Imperial	0.0
California	Kern	0.0
California	Kings	0.0
California	Lassen	0.0
California	Los Angeles	0.0
California	Madera	0.0
California	Mendocino	0.0
California	Merced	0.0
California	Monterey	0.1
California	Napa	0.0
California	Nevada	0.0
California	Orange	0.0
California	Placer	0.0
California	Riverside	0.0
California	Sacramento	0.0
California	San Benito	0.0
California	San Bernardino	0.0
California	San Diego	0.6
California	San Joaquin	0.2
California	San Luis Obispo	0.0
California	San Mateo	0.0
California	Santa Barbara	0.0
California	Santa Clara	0.0
California	Santa Cruz	0.0
California	Shasta	0.0

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
California	Siskiyou	0.3
California	Solano	0.0
California	Sonoma	0.0
California	Stanislaus	0.0
California	Sutter	0.0
California	Tehama	0.0
California	Tulare	0.0
California	Ventura	0.0
California	Yolo	0.0
California	Yuba	0.0
Colorado	Adams	0.7
Colorado	Arapahoe	0.0
Colorado	Boulder	0.0
Colorado	Broomfield	0.0
Colorado	Denver	0.0
Colorado	Douglas	0.2
Colorado	Elbert	0.0
Colorado	El Paso	0.0
Colorado	Fremont	0.0
Colorado	Garfield	0.0
Colorado	Gunnison	0.0
Colorado	Jefferson	0.3
Colorado	Larimer	0.9
Colorado	Lincoln	0.0
Colorado	Logan	0.0
Colorado	Mesa	0.0
Colorado	Montezuma	0.0
Colorado	Otero	0.0
Colorado	Prowers	0.0
Colorado	Pueblo	0.3
Colorado	Routt	0.0
Colorado	Washington	0.0
Colorado	Weld	9.6
Connecticut	Fairfield	0.0
Connecticut	Hartford	0.0
Connecticut	Litchfield	0.0
Connecticut	Middlesex	0.0
Connecticut	New Haven	0.0
Connecticut	New London	0.0
Connecticut	Tolland	0.0
Connecticut	Windham	0.0
Delaware	Kent	0.0
Delaware	New Castle	0.0
Delaware	Sussex	0.0
Florida	Alachua	0.1
Florida	Baker	4.8

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Florida	Brevard	2.6
Florida	Broward	8.9
Florida	Calhoun	0.0
Florida	Charlotte	0.2
Florida	Citrus	0.1
Florida	Clay	0.1
Florida	Collier	0.4
Florida	Columbia	0.0
Florida	Dade	66.7
Florida	De Soto	1.8
Florida	Dixie	0.1
Florida	Duval	0.1
Florida	Escambia	0.0
Florida	Flagler	0.0
Florida	Gadsden	0.2
Florida	Gilchrist	0.0
Florida	Glades	4.7
Florida	Hamilton	0.0
Florida	Hardee	4.7
Florida	Hendry	4.3
Florida	Hernando	0.0
Florida	Highlands	3.7
Florida	Hillsborough	0.5
Florida	Indian River	0.7
Florida	Jackson	0.0
Florida	Jefferson	0.0
Florida	Lafayette	0.0
Florida	Lake	3.2
Florida	Lee	14.5
Florida	Leon	0.0
Florida	Levy	0.4
Florida	Liberty	0.0
Florida	Madison	0.0
Florida	Manatee	3.3
Florida	Marion	0.8
Florida	Martin	12.2
Florida	Miami-Dade	328.7
Florida	Monroe	0.4
Florida	Okaloosa	0.0
Florida	Okeechobee	11.1
Florida	Orange	5.0
Florida	Osceola	0.5
Florida	Palm Beach	117.0
Florida	Pasco	0.0
Florida	Pinellas	0.0
Florida	Polk	1.7

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Florida	Putnam	0.4
Florida	St. Johns	0.1
Florida	St. Lucie	8.4
Florida	Santa Rosa	0.8
Florida	Sarasota	0.0
Florida	Seminole	12.7
Florida	Sumter	0.0
Florida	Suwannee	0.0
Florida	Taylor	0.0
Florida	Volusia	1.6
Florida	Wakulla	0.0
Florida	Walton	0.0
Georgia	Bacon	0.0
Georgia	Baker	0.0
Georgia	Baldwin	0.0
Georgia	Banks	0.0
Georgia	Bartow	0.0
Georgia	Berrien	0.0
Georgia	Brooks	0.0
Georgia	Bulloch	0.0
Georgia	Camden	0.0
Georgia	Carroll	0.0
Georgia	Catoosa	0.0
Georgia	Charlton	0.0
Georgia	Chatham	0.0
Georgia	Cherokee	0.0
Georgia	Clarke	0.0
Georgia	Clay	0.0
Georgia	Clinch	0.0
Georgia	Cobb	0.0
Georgia	Coffee	0.0
Georgia	Colquitt	0.0
Georgia	Cook	0.0
Georgia	Coweta	0.0
Georgia	Crawford	0.0
Georgia	Dawson	0.0
Georgia	Decatur	0.0
Georgia	Dooly	0.0
Georgia	Douglas	0.0
Georgia	Effingham	0.0
Georgia	Emanuel	0.0
Georgia	Evans	0.0
Georgia	Fannin	0.0
Georgia	Fayette	0.0
Georgia	Floyd	0.0
Georgia	Forsyth	0.0

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
Georgia	Fulton	0.0
Georgia	Gordon	0.0
Georgia	Grady	0.0
Georgia	Greene	0.0
Georgia	Gwinnett	0.0
Georgia	Hancock	0.0
Georgia	Haralson	0.0
Georgia	Harris	0.0
Georgia	Hart	0.0
Georgia	Henry	0.0
Georgia	Houston	0.0
Georgia	Jasper	0.0
Georgia	Jeff Davis	0.0
Georgia	Johnson	0.5
Georgia	Lamar	0.0
Georgia	Lowndes	0.0
Georgia	Lumpkin	0.0
Georgia	McDuffie	0.0
Georgia	Marion	0.0
Georgia	Meriwether	0.0
Georgia	Mitchell	0.0
Georgia	Monroe	0.0
Georgia	Morgan	0.0
Georgia	Murray	0.0
Georgia	Newton	0.0
Georgia	Oconee	0.0
Georgia	Oglethorpe	0.0
Georgia	Paulding	0.0
Georgia	Peach	0.0
Georgia	Pierce	0.0
Georgia	Pike	0.0
Georgia	Quitman	0.0
Georgia	Rabun	0.0
Georgia	Randolph	0.0
Georgia	Rockdale	0.0
Georgia	Spalding	0.0
Georgia	Stewart	0.0
Georgia	Tattnall	0.0
Georgia	Thomas	0.0
Georgia	Tift	0.0
Georgia	Toombs	0.0
Georgia	Towns	0.0
Georgia	Turner	0.0
Georgia	Union	0.0
Georgia	Walker	0.0
Georgia	Walton	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Georgia	Washington	0.0
Georgia	Wayne	0.0
Georgia	Webster	0.0
Georgia	Wheeler	0.0
Georgia	Wilkes	0.0
Georgia	Worth	0.0
Hawaii	Hawaii	0.4
Hawaii	Honolulu	0.1
Hawaii	Kauai	0.0
Hawaii	Maui & Kalwao	0.0
Idaho	Ada	0.0
Idaho	Bingham	0.0
Idaho	Bonneville	0.0
Idaho	Boundary	0.0
Idaho	Canyon	0.0
Idaho	Gem	0.0
Idaho	Gooding	0.0
Idaho	Jefferson	0.0
Idaho	Kootenai	0.0
Idaho	Madison	0.0
Idaho	Minidoka	0.0
Idaho	Teton	0.0
Illinois	Adams	0.0
Illinois	Boone	0.0
Illinois	Bureau	0.0
Illinois	Carroll	0.0
Illinois	Champaign	0.0
Illinois	Christian	0.0
Illinois	Clinton	0.0
Illinois	Cook	0.0
Illinois	Cumberland	0.0
Illinois	De Kalb	0.0
Illinois	Du Page	0.0
Illinois	Fayette	0.0
Illinois	Grundy	0.0
Illinois	Hamilton	0.0
Illinois	Hancock	0.0
Illinois	Henry	0.0
Illinois	Iroquois	0.0
Illinois	Jefferson	0.0
Illinois	Jersey	0.0
Illinois	Kane	0.0
Illinois	Kankakee	0.0
Illinois	Kendall	0.0
Illinois	Lake	0.0
Illinois	La Salle	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Illinois	Lee	0.0
Illinois	Logan	0.0
Illinois	McDonough	0.0
Illinois	McHenry	0.0
Illinois	McLean	0.0
Illinois	Macon	0.0
Illinois	Madison	0.0
Illinois	Ogle	0.0
Illinois	Peoria	0.0
Illinois	Perry	0.0
Illinois	Pike	0.0
Illinois	Putnam	0.0
Illinois	Rock Island	0.0
Illinois	St. Clair	0.0
Illinois	Tazewell	0.0
Illinois	Union	0.0
Illinois	Vermilion	0.0
Illinois	Whiteside	0.0
Illinois	Will	0.0
Illinois	Winnebago	0.0
Illinois	Woodford	0.0
Indiana	Allen	0.0
Indiana	Carroll	0.0
Indiana	Clark	0.0
Indiana	De Kalb	0.0
Indiana	Hamilton	0.0
Indiana	Hancock	0.0
Indiana	Hendricks	0.0
Indiana	Howard	0.0
Indiana	Jasper	0.0
Indiana	Johnson	0.0
Indiana	Lake	0.0
Indiana	Montgomery	0.0
Indiana	St. Joseph	0.0
Indiana	Tippecanoe	0.0
Indiana	Wayne	0.0
Indiana	Whitley	0.0
Iowa	Boone	0.0
Iowa	Cerro Gordo	0.0
Iowa	Clay	0.0
Iowa	Davis	0.0
Iowa	Decatur	0.0
Iowa	Floyd	0.0
Iowa	Fremont	0.0
Iowa	Greene	0.0
Iowa	Johnson	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Iowa	Mahaska	0.0
Iowa	Marion	0.0
Iowa	Marshall	0.0
Iowa	Montgomery	0.0
Iowa	Page	0.5
Iowa	Polk	0.0
Iowa	Pottawattamie	0.0
Iowa	Shelby	0.0
Iowa	Sioux	0.0
Iowa	Warren	0.0
Iowa	Washington	0.0
Iowa	Winnebago	0.0
Iowa	Woodbury	0.0
Kansas	Butler	0.0
Kansas	Douglas	0.0
Kansas	Franklin	0.0
Kansas	Geary	0.0
Kansas	Johnson	0.0
Kansas	Linn	0.0
Kansas	Miami	0.0
Kansas	Neosho	0.0
Kansas	Reno	0.0
Kansas	Sedgwick	0.0
Kansas	Shawnee	0.0
Kansas	Trego	0.0
Kansas	Wabaunsee	0.0
Kentucky	Boone	0.0
Kentucky	Bourbon	1.4
Kentucky	Calloway	0.7
Kentucky	Carter	0.0
Kentucky	Daviess	0.0
Kentucky	Edmonson	0.0
Kentucky	Fayette	0.0
Kentucky	Franklin	0.0
Kentucky	Graves	0.0
Kentucky	Hardin	0.0
Kentucky	Henderson	0.0
Kentucky	Henry	0.0
Kentucky	Jefferson	0.0
Kentucky	Jessamine	0.0
Kentucky	Lincoln	0.0
Kentucky	McCracken	0.0
Kentucky	Madison	0.0
Kentucky	Nelson	0.0
Kentucky	Nicholas	0.0
Kentucky	Oldham	0.0

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
Kentucky	Shelby	0.0
Kentucky	Spencer	0.0
Kentucky	Warren	0.0
Kentucky	Washington	0.0
Louisiana	Acadia	0.0
Louisiana	Bienville	0.0
Louisiana	Bossier	0.0
Louisiana	Caddo	0.0
Louisiana	Calcasieu	0.0
Louisiana	Catahoula	0.0
Louisiana	Claiborne	0.0
Louisiana	Concordia	0.0
Louisiana	Franklin	0.0
Louisiana	Iberia	0.0
Louisiana	Iberville	0.0
Louisiana	Jefferson	0.0
Louisiana	Jefferson Davis	0.0
Louisiana	Lafayette	0.0
Louisiana	Lincoln	0.0
Louisiana	Madison	0.0
Louisiana	Plaquemines	0.1
Louisiana	Rapides	0.1
Louisiana	Richland	0.0
Louisiana	Sabine	0.0
Louisiana	Saint Charles	0.0
Louisiana	Saint Landry	0.0
Louisiana	Saint Tammany	0.1
Louisiana	Tangipahoa	0.5
Louisiana	Vermilion	0.0
Louisiana	Vernon	0.0
Louisiana	Washington	0.1
Louisiana	Webster	0.0
Louisiana	Winn	0.0
Maine	Androscoggin	0.0
Maine	Penobscot	0.0
Maryland	Anne Arundel	0.0
Maryland	Baltimore	0.0
Maryland	Caroline	0.0
Maryland	Carroll	0.0
Maryland	Cecil	0.0
Maryland	Dorchester	0.0
Maryland	Frederick	0.0
Maryland	Harford	0.0
Maryland	Howard	0.0
Maryland	Kent	0.0
Maryland	Montgomery	0.1

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
Maryland	Prince George's	0.0
Maryland	Queen Anne's	0.0
Maryland	Somerset	0.0
Maryland	Talbot	0.0
Maryland	Wicomico	0.0
Maryland	Worcester	0.0
Massachusetts	Bristol	0.0
Massachusetts	Franklin	0.0
Massachusetts	Hampden	0.0
Massachusetts	Hampshire	0.0
Massachusetts	Middlesex	0.0
Massachusetts	Plymouth	0.0
Massachusetts	Worcester	0.0
Michigan	Allegan	0.0
Michigan	Antrim	0.0
Michigan	Barry	0.0
Michigan	Berrien	0.0
Michigan	Calhoun	0.0
Michigan	Charlevoix	0.0
Michigan	Crawford	0.0
Michigan	Eaton	0.0
Michigan	Genesee	0.0
Michigan	Huron	0.0
Michigan	Ingham	0.0
Michigan	Ionia	0.0
Michigan	Jackson	0.0
Michigan	Kalamazoo	0.0
Michigan	Kent	0.0
Michigan	Lapeer	0.0
Michigan	Lenawee	0.0
Michigan	Livingston	0.0
Michigan	Macomb	0.0
Michigan	Missaukee	0.0
Michigan	Monroe	0.0
Michigan	Montcalm	0.0
Michigan	Newaygo	0.0
Michigan	Oakland	0.0
Michigan	Ottawa	0.0
Michigan	St. Clair	0.0
Michigan	Sanilac	0.0
Michigan	Shiawassee	0.0
Michigan	Tuscola	0.0
Michigan	Van Buren	0.7
Michigan	Washtenaw	0.0
Michigan	Wayne	0.0
Minnesota	Anoka	0.0

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
Minnesota	Benton	0.0
Minnesota	Blue Earth	0.0
Minnesota	Carlton	0.0
Minnesota	Carver	0.0
Minnesota	Chisago	0.0
Minnesota	Cottonwood	0.0
Minnesota	Dakota	0.0
Minnesota	Douglas	0.0
Minnesota	Hennepin	0.0
Minnesota	Houston	0.0
Minnesota	Hubbard	0.0
Minnesota	Isanti	0.0
Minnesota	Itasca	0.0
Minnesota	Jackson	0.0
Minnesota	Kanabec	0.0
Minnesota	Le Sueur	0.0
Minnesota	Lincoln	0.0
Minnesota	Lyon	0.0
Minnesota	Meeker	0.0
Minnesota	Mille Lacs	0.0
Minnesota	Pine	0.0
Minnesota	Polk	0.0
Minnesota	Ramsey	0.0
Minnesota	Rice	0.0
Minnesota	Scott	0.0
Minnesota	Stearns	0.0
Minnesota	Washington	0.2
Minnesota	Wright	0.0
Mississippi	Adams	0.0
Mississippi	Attala	0.0
Mississippi	Benton	0.0
Mississippi	Copiah	0.0
Mississippi	Covington	0.0
Mississippi	George	0.1
Mississippi	Harrison	0.1
Mississippi	Hinds	0.0
Mississippi	Jackson	0.0
Mississippi	Lamar	0.0
Mississippi	Madison	0.0
Mississippi	Marshall	0.0
Mississippi	Oktibbeha	0.0
Mississippi	Pontotoc	0.0
Mississippi	Stone	0.0
Mississippi	Tippah	0.0
Mississippi	Walthall	0.0
Mississippi	Wayne	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Mississippi	Winston	0.0
Missouri	Atchison	0.0
Missouri	Bates	0.0
Missouri	Boone	0.0
Missouri	Cass	0.0
Missouri	Clay	0.1
Missouri	Cole	0.0
Missouri	Crawford	0.0
Missouri	Dade	0.0
Missouri	Franklin	0.0
Missouri	Grundy	0.0
Missouri	Harrison	0.0
Missouri	Holt	0.0
Missouri	Jackson	0.0
Missouri	Jasper	0.0
Missouri	Jefferson	0.0
Missouri	Lafayette	0.0
Missouri	Lawrence	0.0
Missouri	Lincoln	0.0
Missouri	Linn	0.0
Missouri	Macon	0.0
Missouri	Madison	0.0
Missouri	Maries	0.0
Missouri	Mississippi	0.0
Missouri	Moniteau	0.0
Missouri	Montgomery	0.3
Missouri	New Madrid	0.0
Missouri	Pike	0.0
Missouri	St. Charles	0.0
Missouri	St. Francois	0.0
Missouri	St. Louis	0.0
Missouri	Saline	0.0
Missouri	Scott	0.0
Missouri	Warren	0.0
Missouri	Webster	0.0
Missouri	St. Louis City	0.0
Montana	Beaverhead	0.0
Montana	Cascade	0.0
Montana	Flathead	0.0
Montana	Ravalli	0.0
Montana	Sanders	0.0
Nebraska	Adams	0.0
Nebraska	Box Butte	0.1
Nebraska	Burt	0.0
Nebraska	Cuming	0.0
Nebraska	Dodge	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Nebraska	Douglas	0.4
Nebraska	Keith	0.0
Nebraska	Lancaster	0.0
Nebraska	Lincoln	0.0
Nebraska	Madison	0.0
Nebraska	Sarpy	0.0
Nebraska	Saunders	0.0
Nebraska	Scotts Bluff	0.0
Nebraska	Thayer	0.0
Nebraska	Washington	0.0
Nevada	Clark	0.0
Nevada	Nye	0.0
New Hampshire	Hillsborough	0.0
New Hampshire	Merrimack	0.0
New Hampshire	Rockingham	0.0
New Hampshire	Strafford	0.0
New Jersey	Atlantic	0.0
New Jersey	Burlington	0.0
New Jersey	Camden	0.0
New Jersey	Cape May	0.0
New Jersey	Cumberland	0.0
New Jersey	Gloucester	0.0
New Jersey	Hunterdon	0.0
New Jersey	Mercer	0.0
New Jersey	Middlesex	0.0
New Jersey	Monmouth	0.0
New Jersey	Morris	0.0
New Jersey	Ocean	0.0
New Jersey	Salem	0.1
New Jersey	Somerset	0.0
New Jersey	Sussex	0.0
New Jersey	Union	0.0
New Jersey	Warren	0.0
New Mexico	Curry	0.0
New Mexico	Dona Ana	0.0
New Mexico	Lea	0.0
New Mexico	Mora	0.0
New Mexico	Quay	0.0
New York	Albany	0.0
New York	Cattaraugus	0.0
New York	Cayuga	0.0
New York	Chautauqua	0.0
New York	Dutchess	0.0
New York	Erie	0.1
New York	Genesee	0.0
New York	Monroe	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
New York	Oneida	0.0
New York	Onondaga	0.0
New York	Ontario	0.0
New York	Otsego	0.0
New York	Rensselaer	0.0
New York	Schenectady	0.0
New York	Schoharie	0.0
New York	Schuyler	0.0
New York	Suffolk	0.0
New York	Tioga	0.0
New York	Tompkins	0.0
New York	Wayne	0.0
New York	Westchester	0.0
North Carolina	Alamance	0.0
North Carolina	Alexander	0.0
North Carolina	Anson	0.0
North Carolina	Ashe	0.0
North Carolina	Avery	0.0
North Carolina	Beaufort	0.0
North Carolina	Bladen	0.0
North Carolina	Brunswick	0.5
North Carolina	Buncombe	0.0
North Carolina	Burke	2.0
North Carolina	Cabarrus	0.0
North Carolina	Caldwell	3.6
North Carolina	Caswell	0.0
North Carolina	Catawba	0.0
North Carolina	Chatham	0.0
North Carolina	Cherokee	0.0
North Carolina	Chowan	0.0
North Carolina	Cleveland	0.0
North Carolina	Columbus	0.1
North Carolina	Craven	0.0
North Carolina	Cumberland	0.0
North Carolina	Davie	0.0
North Carolina	Duplin	0.0
North Carolina	Edgecombe	0.0
North Carolina	Forsyth	0.0
North Carolina	Franklin	0.0
North Carolina	Gaston	0.0
North Carolina	Granville	0.0
North Carolina	Greene	0.0
North Carolina	Guilford	0.0
North Carolina	Halifax	0.0
North Carolina	Harnett	0.0
North Carolina	Haywood	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
North Carolina	Henderson	0.0
North Carolina	Hyde	0.0
North Carolina	Iredell	0.0
North Carolina	Jackson	0.0
North Carolina	Johnston	0.1
North Carolina	Lee	0.0
North Carolina	Lenoir	0.0
North Carolina	Lincoln	0.0
North Carolina	McDowell	1.0
North Carolina	Macon	0.0
North Carolina	Madison	0.0
North Carolina	Martin	0.0
North Carolina	Mecklenburg	0.0
North Carolina	Mitchell	0.0
North Carolina	Montgomery	0.0
North Carolina	Moore	0.0
North Carolina	Nash	0.0
North Carolina	New Hanover	0.0
North Carolina	Northampton	0.0
North Carolina	Onslow	0.0
North Carolina	Orange	0.0
North Carolina	Pasquotank	0.0
North Carolina	Pender	0.6
North Carolina	Pitt	0.0
North Carolina	Polk	0.0
North Carolina	Randolph	0.0
North Carolina	Richmond	0.0
North Carolina	Robeson	0.0
North Carolina	Rockingham	0.0
North Carolina	Rowan	0.0
North Carolina	Rutherford	0.0
North Carolina	Sampson	0.0
North Carolina	Stanly	0.0
North Carolina	Stokes	0.0
North Carolina	Surry	0.0
North Carolina	Transylvania	0.0
North Carolina	Union	0.0
North Carolina	Vance	0.0
North Carolina	Wake	0.0
North Carolina	Warren	0.0
North Carolina	Watauga	0.0
North Carolina	Wayne	0.0
North Carolina	Wilkes	0.4
North Carolina	Wilson	0.0
North Carolina	Yadkin	0.0
North Carolina	Yancey	0.0

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
North Dakota	Burleigh	0.0
North Dakota	Dickey	0.0
North Dakota	La Moure	0.0
North Dakota	McHenry	0.0
North Dakota	Nelson	0.0
North Dakota	Sargent	0.0
North Dakota	Stark	0.0
North Dakota	Ward	0.0
Ohio	Ashland	0.0
Ohio	Ashtabula	0.1
Ohio	Athens	0.0
Ohio	Auglaize	0.0
Ohio	Brown	0.0
Ohio	Carroll	0.0
Ohio	Champaign	0.0
Ohio	Clark	0.0
Ohio	Clermont	0.0
Ohio	Coshocton	0.0
Ohio	Crawford	0.0
Ohio	Cuyahoga	0.0
Ohio	Darke	0.0
Ohio	Delaware	0.0
Ohio	Erie	0.0
Ohio	Franklin	0.0
Ohio	Greene	0.0
Ohio	Hardin	0.0
Ohio	Hocking	0.0
Ohio	Lake	0.0
Ohio	Lorain	0.0
Ohio	Lucas	0.0
Ohio	Mahoning	0.0
Ohio	Medina	0.0
Ohio	Meigs	0.0
Ohio	Miami	0.0
Ohio	Montgomery	0.0
Ohio	Muskingum	0.0
Ohio	Paulding	0.0
Ohio	Pickaway	0.1
Ohio	Portage	0.0
Ohio	Richland	0.0
Ohio	Stark	0.0
Ohio	Summit	0.0
Ohio	Trumbull	0.0
Ohio	Union	0.0
Ohio	Warren	0.0
Ohio	Wayne	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Ohio	Wood	0.0
Oklahoma	Canadian	0.0
Oklahoma	Cherokee	0.0
Oklahoma	Cleveland	0.1
Oklahoma	Comanche	0.0
Oklahoma	Garvin	0.0
Oklahoma	Grady	0.0
Oklahoma	Kingfisher	0.0
Oklahoma	McClain	0.0
Oklahoma	Mayes	0.0
Oklahoma	Murray	0.0
Oklahoma	Muskogee	0.0
Oklahoma	Oklahoma	0.1
Oklahoma	Okmulgee	0.0
Oklahoma	Payne	0.0
Oklahoma	Pontotoc	0.0
Oklahoma	Rogers	0.0
Oklahoma	Wagoner	0.0
Oregon	Benton	0.0
Oregon	Clackamas	0.0
Oregon	Columbia	0.0
Oregon	Curry	0.0
Oregon	Deschutes	0.0
Oregon	Douglas	0.0
Oregon	Hood River	0.0
Oregon	Jefferson	0.0
Oregon	Josephine	0.0
Oregon	Klamath	0.0
Oregon	Lane	0.0
Oregon	Lincoln	0.0
Oregon	Linn	0.0
Oregon	Marion	0.0
Oregon	Multnomah	0.0
Oregon	Polk	0.0
Oregon	Umatilla	0.0
Oregon	Washington	0.0
Oregon	Yamhill	0.0
Pennsylvania	Adams	0.0
Pennsylvania	Allegheny	0.0
Pennsylvania	Armstrong	0.0
Pennsylvania	Berks	0.0
Pennsylvania	Bradford	0.0
Pennsylvania	Bucks	0.1
Pennsylvania	Butler	0.0
Pennsylvania	Cambria	0.0
Pennsylvania	Carbon	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Pennsylvania	Centre	0.0
Pennsylvania	Chester	0.0
Pennsylvania	Clearfield	0.0
Pennsylvania	Columbia	0.0
Pennsylvania	Cumberland	0.0
Pennsylvania	Erie	0.0
Pennsylvania	Fayette	0.0
Pennsylvania	Franklin	0.0
Pennsylvania	Indiana	0.0
Pennsylvania	Juniata	0.0
Pennsylvania	Lackawanna	0.0
Pennsylvania	Lancaster	0.0
Pennsylvania	Lehigh	0.0
Pennsylvania	Luzerne	0.0
Pennsylvania	Lycoming	0.0
Pennsylvania	Mercer	0.0
Pennsylvania	Monroe	0.0
Pennsylvania	Montgomery	0.0
Pennsylvania	Montour	0.0
Pennsylvania	Northampton	0.0
Pennsylvania	Northumberland	0.0
Pennsylvania	Perry	0.0
Pennsylvania	Pike	0.0
Pennsylvania	Schuylkill	0.0
Pennsylvania	Snyder	0.0
Pennsylvania	Somerset	0.0
Pennsylvania	Tioga	0.0
Pennsylvania	Union	0.0
Pennsylvania	Wayne	0.0
Pennsylvania	Westmoreland	0.0
Pennsylvania	York	0.0
Rhode Island	Bristol	0.0
Rhode Island	Washington	0.0
South Carolina	Abbeville	0.0
South Carolina	Aiken	0.0
South Carolina	Allendale	0.0
South Carolina	Anderson	0.0
South Carolina	Bamberg	0.0
South Carolina	Barnwell	0.0
South Carolina	Berkeley	0.0
South Carolina	Calhoun	0.0
South Carolina	Charleston	0.0
South Carolina	Cherokee	0.0
South Carolina	Chesterfield	0.0
South Carolina	Clarendon	0.1
South Carolina	Colleton	0.0

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
South Carolina	Darlington	0.0
South Carolina	Dorchester	0.0
South Carolina	Edgefield	0.0
South Carolina	Fairfield	0.0
South Carolina	Florence	0.0
South Carolina	Georgetown	0.0
South Carolina	Greenville	0.0
South Carolina	Greenwood	0.0
South Carolina	Hampton	0.0
South Carolina	Horry	0.0
South Carolina	Jasper	0.0
South Carolina	Kershaw	0.0
South Carolina	Lancaster	0.0
South Carolina	Laurens	0.0
South Carolina	Lee	0.0
South Carolina	Lexington	0.0
South Carolina	Marion	0.0
South Carolina	Marlboro	0.0
South Carolina	Newberry	0.0
South Carolina	Oconee	0.0
South Carolina	Orangeburg	0.0
South Carolina	Pickens	0.0
South Carolina	Richland	0.0
South Carolina	Spartanburg	0.0
South Carolina	Sumter	0.0
South Carolina	Williamsburg	0.0
South Carolina	York	0.0
South Dakota	Bennett	0.0
South Dakota	Codington	0.0
South Dakota	Jackson	0.0
South Dakota	Lake	0.0
South Dakota	Pennington	0.9
South Dakota	Spink	0.0
South Dakota	Yankton	0.0
Tennessee	Bedford	0.0
Tennessee	Blount	0.1
Tennessee	Cannon	5.6
Tennessee	Carter	0.0
Tennessee	Chester	0.0
Tennessee	Coffee	0.0
Tennessee	Davidson	0.0
Tennessee	De Kalb	12.1
Tennessee	Fentress	0.0
Tennessee	Franklin	4.1
Tennessee	Gibson	0.0
Tennessee	Greene	0.0

Data for Figure 19. Indemnities Paid		
State	County	Indemnity (Millions of \$)
Tennessee	Grundy	4.4
Tennessee	Hardin	0.4
Tennessee	Hawkins	0.0
Tennessee	Haywood	0.0
Tennessee	Henderson	0.0
Tennessee	Hickman	0.0
Tennessee	Johnson	0.0
Tennessee	Knox	0.0
Tennessee	Lake	0.3
Tennessee	Lawrence	0.0
Tennessee	Lincoln	0.1
Tennessee	Loudon	0.0
Tennessee	McMinn	0.0
Tennessee	McNairy	0.0
Tennessee	Madison	0.5
Tennessee	Marion	0.0
Tennessee	Marshall	0.0
Tennessee	Meigs	0.0
Tennessee	Moore	0.0
Tennessee	Overton	0.0
Tennessee	Putnam	0.0
Tennessee	Rhea	0.0
Tennessee	Robertson	0.0
Tennessee	Rutherford	0.0
Tennessee	Sequatchie	0.0
Tennessee	Sevier	0.0
Tennessee	Sullivan	0.0
Tennessee	Sumner	0.0
Tennessee	Van Buren	0.3
Tennessee	Warren	28.8
Tennessee	Weakley	0.0
Tennessee	White	0.0
Tennessee	Williamson	0.0
Texas	Anderson	0.0
Texas	Atascosa	0.0
Texas	Austin	0.0
Texas	Bailey	0.0
Texas	Bastrop	0.0
Texas	Bexar	0.0
Texas	Blanco	0.0
Texas	Borden	0.0
Texas	Bosque	0.0
Texas	Bowie	0.0
Texas	Brazoria	0.0
Texas	Brazos	0.0
Texas	Brown	0.0

 Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Texas	Burleson	0.0
Texas	Burnet	0.0
Texas	Caldwell	0.0
Texas	Callahan	0.0
Texas	Cameron	0.4
Texas	Cass	0.0
Texas	Cherokee	0.0
Texas	Collin	0.0
Texas	Colorado	0.0
Texas	Comal	0.0
Texas	Comanche	0.0
Texas	Dallam	0.1
Texas	Dallas	0.0
Texas	Dawson	0.1
Texas	Delta	0.0
Texas	Denton	0.0
Texas	Dimmit	0.0
Texas	Eastland	0.0
Texas	Ector	0.0
Texas	Ellis	0.0
Texas	Erath	6.8
Texas	Falls	0.0
Texas	Fannin	0.0
Texas	Fayette	0.0
Texas	Fort Bend	0.1
Texas	Franklin	0.0
Texas	Frio	0.0
Texas	Galveston	0.0
Texas	Gillespie	0.0
Texas	Gonzales	0.0
Texas	Grayson	0.0
Texas	Grimes	0.0
Texas	Guadalupe	0.0
Texas	Hamilton	0.0
Texas	Harris	0.0
Texas	Hartley	0.1
Texas	Hays	0.0
Texas	Henderson	0.0
Texas	Hidalgo	0.0
Texas	Hopkins	0.0
Texas	Houston	0.0
Texas	Hunt	0.0
Texas	Jack	0.0
Texas	Jackson	0.0
Texas	Jasper	0.0
Texas	Jeff Davis	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Texas	Jim Wells	0.0
Texas	Johnson	0.0
Texas	Kaufman	0.0
Texas	Kendall	0.0
Texas	Kerr	0.0
Texas	Lamar	0.0
Texas	Lamb	0.0
Texas	Lavaca	0.0
Texas	Lee	0.0
Texas	Leon	0.0
Texas	Liberty	0.0
Texas	Limestone	0.0
Texas	Live Oak	0.0
Texas	Lubbock	0.0
Texas	McLennan	0.0
Texas	Marion	0.0
Texas	Martin	0.0
Texas	Matagorda	0.0
Texas	Midland	0.1
Texas	Montgomery	0.0
Texas	Nueces	0.0
Texas	Orange	0.0
Texas	Palo Pinto	0.0
Texas	Parker	0.0
Texas	Polk	0.0
Texas	Potter	0.0
Texas	Rains	0.0
Texas	Randall	0.0
Texas	Red River	0.0
Texas	Rockwall	0.0
Texas	Runnels	0.0
Texas	Rusk	0.1
Texas	Sabine	0.0
Texas	San Jacinto	0.0
Texas	Smith	0.0
Texas	Swisher	0.0
Texas	Tarrant	0.0
Texas	Taylor	0.0
Texas	Tom Green	0.0
Texas	Travis	0.0
Texas	Tyler	0.0
Texas	Uvalde	0.0
Texas	Val Verde	0.0
Texas	Van Zandt	0.0
Texas	Walker	0.2
Texas	Waller	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Texas	Washington	0.0
Texas	Webb	0.0
Texas	Wharton	0.0
Texas	Wichita	0.0
Texas	Willacy	0.0
Texas	Williamson	0.0
Texas	Wilson	0.0
Texas	Wise	0.0
Texas	Wood	0.0
Texas	Zavala	0.0
Utah	Davis	0.0
Utah	Salt Lake	0.0
Utah	Utah	0.0
Utah	Weber	0.0
Vermont	Lamoille	0.0
Vermont	Windsor	0.0
Virginia	Accomack	0.0
Virginia	Amelia	0.0
Virginia	Augusta	0.0
Virginia	Bedford	0.0
Virginia	Campbell	0.0
Virginia	Caroline	0.0
Virginia	Charlotte	0.0
Virginia	Clarke	0.0
Virginia	Culpeper	0.0
Virginia	Essex	0.0
Virginia	Floyd	0.0
Virginia	Fluvanna	0.0
Virginia	Franklin	0.0
Virginia	Frederick	0.0
Virginia	Gloucester	0.0
Virginia	Halifax	0.0
Virginia	Hanover	0.0
Virginia	Henrico	0.0
Virginia	Isle of Wight	0.0
Virginia	King William	0.0
Virginia	Loudoun	0.0
Virginia	Mathews	0.0
Virginia	Mecklenburg	0.0
Virginia	Nelson	0.0
Virginia	New Kent	0.0
Virginia	Northampton	0.0
Virginia	Orange	0.0
Virginia	Patrick	0.0
Virginia	Pittsylvania	0.0
Virginia	Prince Edward	0.0

Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Virginia	Rappahannock	0.0
Virginia	Richmond	0.0
Virginia	Roanoke	0.0
Virginia	Rockbridge	0.0
Virginia	Rockingham	0.0
Virginia	Shenandoah	0.0
Virginia	Smyth	0.0
Virginia	Southampton	0.0
Virginia	Surry	0.0
Virginia	Sussex	0.0
Virginia	Washington	0.0
Virginia	Westmoreland	0.0
Virginia	Chesapeake City	0.0
Virginia	Suffolk City	0.0
Virginia	Virginia Beach City	0.0
Washington	Adams	0.0
Washington	Benton	0.0
Washington	Clark	0.0
Washington	Franklin	0.0
Washington	Grant	0.1
Washington	Grays Harbor	0.0
Washington	King	0.0
Washington	Klickitat	0.0
Washington	Lewis	0.0
Washington	Pierce	0.0
Washington	Skagit	0.0
Washington	Snohomish	0.1
Washington	Spokane	0.0
Washington	Stevens	0.0
Washington	Thurston	0.0
Washington	Walla Walla	0.0
Washington	Whatcom	0.0
Washington	Yakima	3.2
West Virginia	Fayette	0.0
West Virginia	Greenbrier	0.0
West Virginia	Jefferson	0.0
West Virginia	Putnam	0.0
West Virginia	Taylor	0.0
West Virginia	Wirt	0.0
Wisconsin	Adams	0.0
Wisconsin	Bayfield	0.0
Wisconsin	Brown	0.0
Wisconsin	Calumet	0.0
Wisconsin	Chippewa	0.0
Wisconsin	Columbia	0.0
Wisconsin	Dane	0.1

 Data for Figure 19. Indemnities Paid

State	County	Indemnity (Millions of \$)
Wisconsin	Dodge	0.0
Wisconsin	Door	0.0
Wisconsin	Eau Claire	0.0
Wisconsin	Fond Du Lac	0.0
Wisconsin	Green Lake	0.0
Wisconsin	Jackson	0.0
Wisconsin	Kenosha	0.0
Wisconsin	Kewaunee	0.0
Wisconsin	Lincoln	0.0
Wisconsin	Manitowoc	0.0
Wisconsin	Marathon	0.0
Wisconsin	Milwaukee	0.0
Wisconsin	Monroe	0.0
Wisconsin	Oneida	0.0
Wisconsin	Outagamie	0.0
Wisconsin	Pierce	0.0
Wisconsin	Polk	0.0
Wisconsin	Portage	0.0
Wisconsin	Racine	0.0
Wisconsin	Rock	0.0
Wisconsin	St. Croix	0.0
Wisconsin	Shawano	0.0
Wisconsin	Walworth	0.0
Wisconsin	Washington	0.0
Wisconsin	Waukesha	0.0
Wisconsin	Waupaca	0.0
Wisconsin	Waushara	0.0
Wisconsin	Winnebago	0.0
Wisconsin	Wood	0.0
Wyoming	Natrona	0.0
Wyoming	Platte	0.0
Wyoming	Teton	0.0

Data for Figure 20. Loss Ratio

State	County	Loss Ratio
Alabama	Autauga	0.37
Alabama	Baldwin	0.04
Alabama	Bullock	0.00
Alabama	Calhoun	0.20
Alabama	Chambers	0.00
Alabama	Cherokee	0.00
Alabama	Chilton	0.00
Alabama	Cleburne	0.00
Alabama	Coffee	0.00
Alabama	Cullman	5.15
Alabama	Dale	0.00
Alabama	Dallas	0.00
Alabama	Elmore	0.04
Alabama	Escambia	0.00
Alabama	Etowah	0.00
Alabama	Franklin	0.00
Alabama	Geneva	0.00
Alabama	Greene	0.00
Alabama	Lauderdale	13.72
Alabama	Lee	0.00
Alabama	Limestone	0.23
Alabama	Macon	0.00
Alabama	Madison	2.77
Alabama	Marshall	0.00
Alabama	Mobile	0.25
Alabama	Montgomery	0.00
Alabama	Morgan	0.00
Alabama	Pickens	0.00
Alabama	Pike	0.00
Alabama	Randolph	0.00
Alabama	Russell	0.00
Alabama	Saint Clair	0.00
Alabama	Shelby	0.00
Alabama	Talladega	0.00
Alabama	Tuscaloosa	0.00
Alabama	Washington	0.73
Arizona	Maricopa	0.00
Arizona	Mohave	0.00
Arizona	Pima	0.00
Arizona	Pinal	0.46
Arizona	Yavapai	0.00
Arizona	Yuma	0.00
Arkansas	Arkansas	0.00
Arkansas	Benton	0.00
Arkansas	Clay	0.00
Arkansas	Columbia	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Arkansas	Crawford	0.00
Arkansas	Faulkner	0.00
Arkansas	Independence	0.00
Arkansas	Little River	0.00
Arkansas	Madison	0.00
Arkansas	Monroe	0.00
Arkansas	Montgomery	0.00
Arkansas	Nevada	0.00
Arkansas	Newton	0.00
Arkansas	Poinsett	0.00
Arkansas	Pulaski	0.00
Arkansas	Van Buren	0.00
Arkansas	White	15.97
California	Alameda	0.00
California	Butte	0.71
California	Colusa	0.00
California	Contra Costa	0.00
California	Eldorado	0.00
California	Fresno	0.00
California	Glenn	0.00
California	Humboldt	0.00
California	Imperial	0.00
California	Kern	0.00
California	Kings	0.00
California	Lassen	0.00
California	Los Angeles	0.00
California	Madera	0.00
California	Mendocino	0.00
California	Merced	0.06
California	Monterey	0.07
California	Napa	0.00
California	Nevada	0.00
California	Orange	0.00
California	Placer	0.00
California	Riverside	0.00
California	Sacramento	0.00
California	San Benito	0.05
California	San Bernardino	0.00
California	San Diego	0.10
California	San Joaquin	0.09
California	San Luis Obispo	0.00
California	San Mateo	0.00
California	Santa Barbara	0.00
California	Santa Clara	0.06
California	Santa Cruz	0.00
California	Shasta	3.21

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
California	Siskiyou	1.58
California	Solano	0.00
California	Sonoma	0.00
California	Stanislaus	0.00
California	Sutter	0.00
California	Tehama	0.00
California	Tulare	0.00
California	Ventura	0.00
California	Yolo	0.00
California	Yuba	0.00
Colorado	Adams	0.47
Colorado	Arapahoe	0.00
Colorado	Boulder	0.00
Colorado	Broomfield	0.00
Colorado	Denver	0.00
Colorado	Douglas	0.76
Colorado	Elbert	0.00
Colorado	El Paso	0.00
Colorado	Fremont	0.00
Colorado	Garfield	0.00
Colorado	Gunnison	0.00
Colorado	Jefferson	0.50
Colorado	Larimer	1.36
Colorado	Lincoln	0.00
Colorado	Logan	0.00
Colorado	Mesa	0.00
Colorado	Montezuma	0.00
Colorado	Otero	0.00
Colorado	Prowers	0.28
Colorado	Pueblo	2.97
Colorado	Routt	0.00
Colorado	Washington	0.02
Colorado	Weld	4.26
Connecticut	Fairfield	0.00
Connecticut	Hartford	0.00
Connecticut	Litchfield	0.00
Connecticut	Middlesex	0.00
Connecticut	New Haven	0.00
Connecticut	New London	0.00
Connecticut	Tolland	0.00
Connecticut	Windham	0.00
Delaware	Kent	0.00
Delaware	New Castle	0.00
Delaware	Sussex	0.00
Florida	Alachua	0.04
Florida	Baker	3.22

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Florida	Brevard	1.27
Florida	Broward	1.15
Florida	Calhoun	0.00
Florida	Charlotte	0.81
Florida	Citrus	0.46
Florida	Clay	0.11
Florida	Collier	0.11
Florida	Columbia	0.00
Florida	Dade	2.31
Florida	De Soto	1.68
Florida	Dixie	14.97
Florida	Duval	0.37
Florida	Escambia	0.00
Florida	Flagler	0.00
Florida	Gadsden	0.05
Florida	Gilchrist	0.01
Florida	Glades	3.91
Florida	Hamilton	0.00
Florida	Hardee	1.08
Florida	Hendry	2.21
Florida	Hernando	0.00
Florida	Highlands	0.85
Florida	Hillsborough	0.05
Florida	Indian River	0.46
Florida	Jackson	0.12
Florida	Jefferson	0.00
Florida	Lafayette	0.00
Florida	Lake	0.17
Florida	Lee	0.93
Florida	Leon	0.00
Florida	Levy	0.21
Florida	Liberty	0.00
Florida	Madison	0.04
Florida	Manatee	0.57
Florida	Marion	0.37
Florida	Martin	1.21
Florida	Miami-Dade	1.79
Florida	Monroe	19.04
Florida	Okaloosa	0.00
Florida	Okeechobee	4.81
Florida	Orange	0.34
Florida	Osceola	0.49
Florida	Palm Beach	2.29
Florida	Pasco	0.01
Florida	Pinellas	0.00
Florida	Polk	0.38

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Florida	Putnam	0.17
Florida	St. Johns	0.09
Florida	St. Lucie	1.48
Florida	Santa Rosa	1.26
Florida	Sarasota	0.00
Florida	Seminole	6.08
Florida	Sumter	0.00
Florida	Suwannee	0.02
Florida	Taylor	0.00
Florida	Volusia	0.33
Florida	Wakulla	0.00
Florida	Walton	0.00
Georgia	Bacon	0.00
Georgia	Baker	0.00
Georgia	Baldwin	0.00
Georgia	Banks	0.00
Georgia	Bartow	0.00
Georgia	Berrien	0.00
Georgia	Brooks	0.00
Georgia	Bulloch	0.00
Georgia	Camden	0.00
Georgia	Carroll	0.82
Georgia	Catoosa	0.00
Georgia	Charlton	0.00
Georgia	Chatham	0.00
Georgia	Cherokee	0.00
Georgia	Clarke	0.00
Georgia	Clay	0.00
Georgia	Clinch	0.00
Georgia	Cobb	0.00
Georgia	Coffee	0.00
Georgia	Colquitt	0.00
Georgia	Cook	0.00
Georgia	Coweta	0.00
Georgia	Crawford	0.00
Georgia	Dawson	0.00
Georgia	Decatur	0.00
Georgia	Dooly	0.00
Georgia	Douglas	0.00
Georgia	Effingham	0.00
Georgia	Emanuel	0.00
Georgia	Evans	0.00
Georgia	Fannin	0.00
Georgia	Fayette	0.00
Georgia	Floyd	0.00
Georgia	Forsyth	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Georgia	Fulton	0.00
Georgia	Gordon	0.00
Georgia	Grady	0.00
Georgia	Greene	0.00
Georgia	Gwinnett	0.00
Georgia	Hancock	0.00
Georgia	Haralson	2.93
Georgia	Harris	0.00
Georgia	Hart	0.16
Georgia	Henry	0.00
Georgia	Houston	0.00
Georgia	Jasper	0.00
Georgia	Jeff Davis	0.00
Georgia	Johnson	3.76
Georgia	Lamar	0.00
Georgia	Lowndes	0.00
Georgia	Lumpkin	0.00
Georgia	McDuffie	0.00
Georgia	Marion	0.00
Georgia	Meriwether	0.00
Georgia	Mitchell	0.00
Georgia	Monroe	0.00
Georgia	Morgan	0.00
Georgia	Murray	0.00
Georgia	Newton	0.00
Georgia	Oconee	0.00
Georgia	Oglethorpe	0.00
Georgia	Paulding	0.00
Georgia	Peach	0.00
Georgia	Pierce	0.00
Georgia	Pike	0.00
Georgia	Quitman	0.00
Georgia	Rabun	0.00
Georgia	Randolph	0.00
Georgia	Rockdale	0.00
Georgia	Spalding	0.00
Georgia	Stewart	0.00
Georgia	Tattnall	0.00
Georgia	Thomas	0.00
Georgia	Tift	0.00
Georgia	Toombs	0.00
Georgia	Towns	0.00
Georgia	Turner	0.00
Georgia	Union	0.00
Georgia	Walker	0.00
Georgia	Walton	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Georgia	Washington	0.00
Georgia	Wayne	0.00
Georgia	Webster	0.09
Georgia	Wheeler	0.00
Georgia	Wilkes	0.00
Georgia	Worth	0.00
Hawaii	Hawaii	0.23
Hawaii	Honolulu	0.30
Hawaii	Kauai	0.00
Hawaii	Maui & Kalwao	0.00
Idaho	Ada	0.00
Idaho	Bingham	0.00
Idaho	Bonneville	0.00
Idaho	Boundary	0.00
Idaho	Canyon	0.00
Idaho	Gem	0.00
Idaho	Gooding	0.00
Idaho	Jefferson	0.00
Idaho	Kootenai	0.00
Idaho	Madison	0.00
Idaho	Minidoka	0.00
Idaho	Teton	0.00
Illinois	Adams	0.00
Illinois	Boone	0.00
Illinois	Bureau	4.83
Illinois	Carroll	0.00
Illinois	Champaign	0.00
Illinois	Christian	0.00
Illinois	Clinton	0.00
Illinois	Cook	0.00
Illinois	Cumberland	0.00
Illinois	De Kalb	0.00
Illinois	Du Page	0.00
Illinois	Fayette	0.00
Illinois	Grundy	0.00
Illinois	Hamilton	0.00
Illinois	Hancock	0.00
Illinois	Henry	0.00
Illinois	Iroquois	0.00
Illinois	Jefferson	0.00
Illinois	Jersey	0.00
Illinois	Kane	0.00
Illinois	Kankakee	0.00
Illinois	Kendall	0.00
Illinois	Lake	0.00
Illinois	La Salle	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Illinois	Lee	0.00
Illinois	Logan	10.67
Illinois	McDonough	0.00
Illinois	McHenry	0.00
Illinois	McLean	0.00
Illinois	Macon	0.00
Illinois	Madison	0.00
Illinois	Ogle	0.00
Illinois	Peoria	0.00
Illinois	Perry	0.00
Illinois	Pike	0.00
Illinois	Putnam	0.00
Illinois	Rock Island	0.00
Illinois	St. Clair	0.00
Illinois	Tazewell	0.00
Illinois	Union	0.00
Illinois	Vermilion	0.00
Illinois	Whiteside	0.83
Illinois	Will	0.00
Illinois	Winnebago	0.00
Illinois	Woodford	0.00
Indiana	Allen	0.00
Indiana	Carroll	0.00
Indiana	Clark	0.00
Indiana	De Kalb	0.00
Indiana	Hamilton	0.00
Indiana	Hancock	0.00
Indiana	Hendricks	0.00
Indiana	Howard	0.00
Indiana	Jasper	0.00
Indiana	Johnson	0.00
Indiana	Lake	0.00
Indiana	Montgomery	0.00
Indiana	St. Joseph	0.00
Indiana	Tippecanoe	0.00
Indiana	Wayne	0.00
Indiana	Whitley	0.00
Iowa	Boone	0.00
Iowa	Cerro Gordo	0.00
Iowa	Clay	0.00
Iowa	Davis	0.00
Iowa	Decatur	9.84
Iowa	Floyd	0.00
Iowa	Fremont	0.00
Iowa	Greene	0.00
Iowa	Johnson	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Iowa	Mahaska	0.00
Iowa	Marion	0.00
Iowa	Marshall	0.00
Iowa	Montgomery	0.00
Iowa	Page	9.39
Iowa	Polk	0.00
Iowa	Pottawattamie	0.00
Iowa	Shelby	0.00
Iowa	Sioux	0.00
Iowa	Warren	0.00
Iowa	Washington	0.00
Iowa	Winnebago	0.00
Iowa	Woodbury	0.00
Kansas	Butler	0.00
Kansas	Douglas	0.00
Kansas	Franklin	0.00
Kansas	Geary	0.00
Kansas	Johnson	0.00
Kansas	Linn	0.00
Kansas	Miami	0.00
Kansas	Neosho	0.00
Kansas	Reno	0.00
Kansas	Sedgwick	0.00
Kansas	Shawnee	0.00
Kansas	Trego	0.00
Kansas	Wabaunsee	0.00
Kentucky	Boone	0.00
Kentucky	Bourbon	41.56
Kentucky	Calloway	6.32
Kentucky	Carter	0.00
Kentucky	Daviess	0.00
Kentucky	Edmonson	0.00
Kentucky	Fayette	0.00
Kentucky	Franklin	0.00
Kentucky	Graves	0.00
Kentucky	Hardin	0.00
Kentucky	Henderson	0.00
Kentucky	Henry	0.00
Kentucky	Jefferson	0.00
Kentucky	Jessamine	0.00
Kentucky	Lincoln	0.00
Kentucky	McCracken	0.00
Kentucky	Madison	0.00
Kentucky	Nelson	0.00
Kentucky	Nicholas	0.00
Kentucky	Oldham	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Kentucky	Shelby	0.00
Kentucky	Spencer	0.00
Kentucky	Warren	0.00
Kentucky	Washington	0.00
Louisiana	Acadia	1.21
Louisiana	Bienville	0.00
Louisiana	Bossier	0.54
Louisiana	Caddo	0.00
Louisiana	Calcasieu	3.10
Louisiana	Catahoula	0.00
Louisiana	Claiborne	0.00
Louisiana	Concordia	0.00
Louisiana	Franklin	0.00
Louisiana	Iberia	0.00
Louisiana	Iberville	0.00
Louisiana	Jefferson	0.00
Louisiana	Jefferson Davis	0.00
Louisiana	Lafayette	0.00
Louisiana	Lincoln	0.00
Louisiana	Madison	0.00
Louisiana	Plaquemines	0.29
Louisiana	Rapides	0.04
Louisiana	Richland	0.00
Louisiana	Sabine	0.00
Louisiana	Saint Charles	0.00
Louisiana	Saint Landry	0.00
Louisiana	Saint Tammany	1.40
Louisiana	Tangipahoa	0.85
Louisiana	Vermilion	0.00
Louisiana	Vernon	0.00
Louisiana	Washington	0.05
Louisiana	Webster	0.00
Louisiana	Winn	0.00
Maine	Androscoggin	0.00
Maine	Penobscot	0.00
Maryland	Anne Arundel	0.00
Maryland	Baltimore	0.00
Maryland	Caroline	0.00
Maryland	Carroll	0.00
Maryland	Cecil	0.00
Maryland	Dorchester	0.00
Maryland	Frederick	0.00
Maryland	Harford	0.00
Maryland	Howard	0.00
Maryland	Kent	0.00
Maryland	Montgomery	0.31

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Maryland	Prince George's	0.00
Maryland	Queen Anne's	0.00
Maryland	Somerset	0.00
Maryland	Talbot	0.00
Maryland	Wicomico	0.00
Maryland	Worcester	0.00
Massachusetts	Bristol	0.05
Massachusetts	Franklin	0.00
Massachusetts	Hampden	0.00
Massachusetts	Hampshire	0.00
Massachusetts	Middlesex	0.00
Massachusetts	Plymouth	0.00
Massachusetts	Worcester	0.00
Michigan	Allegan	0.00
Michigan	Antrim	0.00
Michigan	Barry	0.00
Michigan	Berrien	0.00
Michigan	Calhoun	0.00
Michigan	Charlevoix	0.00
Michigan	Crawford	0.00
Michigan	Eaton	0.00
Michigan	Genesee	0.00
Michigan	Huron	0.00
Michigan	Ingham	0.00
Michigan	Ionia	0.00
Michigan	Jackson	0.00
Michigan	Kalamazoo	0.00
Michigan	Kent	0.00
Michigan	Lapeer	0.00
Michigan	Lenawee	0.00
Michigan	Livingston	0.00
Michigan	Macomb	0.00
Michigan	Missaukee	0.00
Michigan	Monroe	0.00
Michigan	Montcalm	0.00
Michigan	Newaygo	0.00
Michigan	Oakland	0.00
Michigan	Ottawa	0.00
Michigan	St. Clair	0.00
Michigan	Sanilac	0.00
Michigan	Shiawassee	0.00
Michigan	Tuscola	0.00
Michigan	Van Buren	1.69
Michigan	Washtenaw	0.00
Michigan	Wayne	0.00
Minnesota	Anoka	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Minnesota	Benton	0.00
Minnesota	Blue Earth	0.00
Minnesota	Carlton	0.00
Minnesota	Carver	0.00
Minnesota	Chisago	0.00
Minnesota	Cottonwood	0.00
Minnesota	Dakota	0.00
Minnesota	Douglas	0.00
Minnesota	Hennepin	0.00
Minnesota	Houston	0.00
Minnesota	Hubbard	0.00
Minnesota	Isanti	0.00
Minnesota	Itasca	0.00
Minnesota	Jackson	0.00
Minnesota	Kanabec	0.00
Minnesota	Le Sueur	0.00
Minnesota	Lincoln	0.00
Minnesota	Lyon	0.00
Minnesota	Meeker	0.00
Minnesota	Mille Lacs	0.00
Minnesota	Pine	0.00
Minnesota	Polk	0.00
Minnesota	Ramsey	0.00
Minnesota	Rice	0.00
Minnesota	Scott	0.00
Minnesota	Stearns	0.00
Minnesota	Washington	0.10
Minnesota	Wright	0.00
Mississippi	Adams	0.00
Mississippi	Attala	0.00
Mississippi	Benton	0.10
Mississippi	Copiah	0.00
Mississippi	Covington	4.88
Mississippi	George	0.11
Mississippi	Harrison	7.87
Mississippi	Hinds	0.00
Mississippi	Jackson	0.06
Mississippi	Lamar	0.00
Mississippi	Madison	0.00
Mississippi	Marshall	1.03
Mississippi	Oktibbeha	0.00
Mississippi	Pontotoc	0.00
Mississippi	Stone	0.00
Mississippi	Tippah	0.00
Mississippi	Walthall	0.00
Mississippi	Wayne	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Mississippi	Winston	0.00
Missouri	Atchison	0.00
Missouri	Bates	0.00
Missouri	Boone	0.00
Missouri	Cass	0.00
Missouri	Clay	2.97
Missouri	Cole	0.00
Missouri	Crawford	0.00
Missouri	Dade	0.69
Missouri	Franklin	0.00
Missouri	Grundy	0.00
Missouri	Harrison	0.00
Missouri	Holt	0.00
Missouri	Jackson	0.03
Missouri	Jasper	0.00
Missouri	Jefferson	0.07
Missouri	Lafayette	0.00
Missouri	Lawrence	0.00
Missouri	Lincoln	0.04
Missouri	Linn	0.00
Missouri	Macon	1.16
Missouri	Madison	0.00
Missouri	Maries	0.00
Missouri	Mississippi	0.00
Missouri	Moniteau	0.00
Missouri	Montgomery	1.10
Missouri	New Madrid	0.00
Missouri	Pike	0.00
Missouri	St. Charles	0.00
Missouri	St. Francois	0.00
Missouri	St. Louis	0.00
Missouri	Saline	0.00
Missouri	Scott	0.00
Missouri	Warren	0.00
Missouri	Webster	0.00
Missouri	St. Louis City	0.00
Montana	Beaverhead	3.03
Montana	Cascade	0.00
Montana	Flathead	0.00
Montana	Ravalli	0.00
Montana	Sanders	0.00
Nebraska	Adams	0.00
Nebraska	Box Butte	8.85
Nebraska	Burt	0.00
Nebraska	Cuming	0.00
Nebraska	Dodge	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Nebraska	Douglas	4.45
Nebraska	Keith	0.00
Nebraska	Lancaster	0.00
Nebraska	Lincoln	0.00
Nebraska	Madison	2.44
Nebraska	Sarpy	0.00
Nebraska	Saunders	0.00
Nebraska	Scotts Bluff	3.97
Nebraska	Thayer	0.00
Nebraska	Washington	0.00
Nevada	Clark	0.00
Nevada	Nye	0.00
New Hampshire	Hillsborough	0.00
New Hampshire	Merrimack	0.00
New Hampshire	Rockingham	0.00
New Hampshire	Strafford	0.00
New Jersey	Atlantic	0.00
New Jersey	Burlington	0.00
New Jersey	Camden	0.00
New Jersey	Cape May	0.00
New Jersey	Cumberland	0.00
New Jersey	Gloucester	0.00
New Jersey	Hunterdon	0.00
New Jersey	Mercer	0.00
New Jersey	Middlesex	0.00
New Jersey	Monmouth	0.00
New Jersey	Morris	0.00
New Jersey	Ocean	0.00
New Jersey	Salem	0.33
New Jersey	Somerset	0.00
New Jersey	Sussex	0.00
New Jersey	Union	0.00
New Jersey	Warren	0.00
New Mexico	Curry	3.85
New Mexico	Dona Ana	0.00
New Mexico	Lea	0.00
New Mexico	Mora	0.00
New Mexico	Quay	0.00
New York	Albany	0.00
New York	Cattaraugus	0.00
New York	Cayuga	0.00
New York	Chautauqua	0.00
New York	Dutchess	0.00
New York	Erie	0.27
New York	Genesee	0.00
New York	Monroe	0.00

Data for Figure 20. Loss Ratio

State	County	Loss Ratio
New York	Oneida	0.00
New York	Onondaga	0.00
New York	Ontario	0.00
New York	Otsego	0.00
New York	Rensselaer	0.00
New York	Schenectady	0.00
New York	Schoharie	0.00
New York	Schuyler	7.58
New York	Suffolk	0.00
New York	Tioga	0.00
New York	Tompkins	0.00
New York	Wayne	0.00
New York	Westchester	0.00
North Carolina	Alamance	0.00
North Carolina	Alexander	0.00
North Carolina	Anson	0.00
North Carolina	Ashe	0.00
North Carolina	Avery	0.15
North Carolina	Beaufort	0.00
North Carolina	Bladen	0.00
North Carolina	Brunswick	2.16
North Carolina	Buncombe	0.00
North Carolina	Burke	0.84
North Carolina	Cabarrus	0.00
North Carolina	Caldwell	1.08
North Carolina	Caswell	0.00
North Carolina	Catawba	0.00
North Carolina	Chatham	0.01
North Carolina	Cherokee	0.00
North Carolina	Chowan	0.00
North Carolina	Cleveland	0.56
North Carolina	Columbus	0.55
North Carolina	Craven	0.00
North Carolina	Cumberland	0.00
North Carolina	Davie	0.00
North Carolina	Duplin	0.22
North Carolina	Edgecombe	0.00
North Carolina	Forsyth	0.20
North Carolina	Franklin	0.00
North Carolina	Gaston	0.00
North Carolina	Granville	0.00
North Carolina	Greene	0.00
North Carolina	Guilford	0.00
North Carolina	Halifax	0.00
North Carolina	Harnett	0.01
North Carolina	Haywood	0.00

Data for Figure 20. Loss Ratio

State	County	Loss Ratio
North Carolina	Henderson	0.02
North Carolina	Hyde	0.81
North Carolina	Iredell	0.00
North Carolina	Jackson	0.00
North Carolina	Johnston	0.15
North Carolina	Lee	0.00
North Carolina	Lenoir	0.00
North Carolina	Lincoln	0.00
North Carolina	McDowell	0.79
North Carolina	Macon	0.00
North Carolina	Madison	0.00
North Carolina	Martin	0.00
North Carolina	Mecklenburg	0.00
North Carolina	Mitchell	1.27
North Carolina	Montgomery	0.00
North Carolina	Moore	0.00
North Carolina	Nash	0.00
North Carolina	New Hanover	0.00
North Carolina	Northampton	0.00
North Carolina	Onslow	0.00
North Carolina	Orange	0.00
North Carolina	Pasquotank	0.57
North Carolina	Pender	0.47
North Carolina	Pitt	0.00
North Carolina	Polk	0.00
North Carolina	Randolph	0.00
North Carolina	Richmond	0.00
North Carolina	Robeson	0.03
North Carolina	Rockingham	0.36
North Carolina	Rowan	0.00
North Carolina	Rutherford	0.00
North Carolina	Sampson	0.00
North Carolina	Stanly	0.00
North Carolina	Stokes	0.00
North Carolina	Surry	0.00
North Carolina	Transylvania	0.00
North Carolina	Union	0.00
North Carolina	Vance	0.00
North Carolina	Wake	0.01
North Carolina	Warren	0.00
North Carolina	Watauga	0.00
North Carolina	Wayne	0.00
North Carolina	Wilkes	4.03
North Carolina	Wilson	0.00
North Carolina	Yadkin	0.00
North Carolina	Yancey	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
North Dakota	Burleigh	0.57
North Dakota	Dickey	0.00
North Dakota	La Moure	0.00
North Dakota	McHenry	0.00
North Dakota	Nelson	0.00
North Dakota	Sargent	0.00
North Dakota	Stark	0.00
North Dakota	Ward	0.00
Ohio	Ashland	0.00
Ohio	Ashtabula	0.88
Ohio	Athens	0.00
Ohio	Auglaize	0.00
Ohio	Brown	0.00
Ohio	Carroll	0.00
Ohio	Champaign	0.00
Ohio	Clark	0.00
Ohio	Clermont	0.00
Ohio	Coshocton	0.00
Ohio	Crawford	0.00
Ohio	Cuyahoga	0.00
Ohio	Darke	0.00
Ohio	Delaware	0.00
Ohio	Erie	0.00
Ohio	Franklin	0.00
Ohio	Greene	0.00
Ohio	Hardin	0.00
Ohio	Hocking	0.00
Ohio	Lake	0.00
Ohio	Lorain	0.00
Ohio	Lucas	0.00
Ohio	Mahoning	0.00
Ohio	Medina	0.00
Ohio	Meigs	0.00
Ohio	Miami	0.00
Ohio	Montgomery	0.00
Ohio	Muskingum	0.00
Ohio	Paulding	0.00
Ohio	Pickaway	1.16
Ohio	Portage	0.00
Ohio	Richland	0.00
Ohio	Stark	0.00
Ohio	Summit	0.00
Ohio	Trumbull	0.00
Ohio	Union	0.00
Ohio	Warren	0.00
Ohio	Wayne	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Ohio	Wood	0.00
Oklahoma	Canadian	1.11
Oklahoma	Cherokee	0.00
Oklahoma	Cleveland	0.16
Oklahoma	Comanche	0.00
Oklahoma	Garvin	0.00
Oklahoma	Grady	0.00
Oklahoma	Kingfisher	2.18
Oklahoma	McClain	0.00
Oklahoma	Mayes	0.00
Oklahoma	Murray	0.00
Oklahoma	Muskogee	0.00
Oklahoma	Oklahoma	0.30
Oklahoma	Okmulgee	9.63
Oklahoma	Payne	0.00
Oklahoma	Pontotoc	0.00
Oklahoma	Rogers	0.00
Oklahoma	Wagoner	0.00
Oregon	Benton	0.00
Oregon	Clackamas	0.00
Oregon	Columbia	0.00
Oregon	Curry	0.00
Oregon	Deschutes	0.00
Oregon	Douglas	0.00
Oregon	Hood River	0.00
Oregon	Jefferson	0.00
Oregon	Josephine	0.00
Oregon	Klamath	0.00
Oregon	Lane	0.00
Oregon	Lincoln	0.00
Oregon	Linn	0.00
Oregon	Marion	0.00
Oregon	Multnomah	0.00
Oregon	Polk	0.00
Oregon	Umatilla	0.00
Oregon	Washington	0.00
Oregon	Yamhill	0.00
Pennsylvania	Adams	0.00
Pennsylvania	Allegheny	0.00
Pennsylvania	Armstrong	0.00
Pennsylvania	Berks	0.00
Pennsylvania	Bradford	0.00
Pennsylvania	Bucks	0.51
Pennsylvania	Butler	0.59
Pennsylvania	Cambria	0.00
Pennsylvania	Carbon	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Pennsylvania	Centre	0.00
Pennsylvania	Chester	0.00
Pennsylvania	Clearfield	0.00
Pennsylvania	Columbia	0.00
Pennsylvania	Cumberland	0.00
Pennsylvania	Erie	0.00
Pennsylvania	Fayette	0.00
Pennsylvania	Franklin	0.00
Pennsylvania	Indiana	0.00
Pennsylvania	Juniata	0.00
Pennsylvania	Lackawanna	0.00
Pennsylvania	Lancaster	0.00
Pennsylvania	Lehigh	0.00
Pennsylvania	Luzerne	0.00
Pennsylvania	Lycoming	0.00
Pennsylvania	Mercer	0.00
Pennsylvania	Monroe	0.00
Pennsylvania	Montgomery	0.00
Pennsylvania	Montour	0.00
Pennsylvania	Northampton	0.00
Pennsylvania	Northumberland	0.00
Pennsylvania	Perry	0.00
Pennsylvania	Pike	0.00
Pennsylvania	Schuylkill	0.00
Pennsylvania	Snyder	0.00
Pennsylvania	Somerset	0.00
Pennsylvania	Tioga	0.00
Pennsylvania	Union	0.00
Pennsylvania	Wayne	0.00
Pennsylvania	Westmoreland	0.00
Pennsylvania	York	0.00
Rhode Island	Bristol	0.13
Rhode Island	Washington	0.00
South Carolina	Abbeville	0.00
South Carolina	Aiken	0.00
South Carolina	Allendale	0.00
South Carolina	Anderson	0.00
South Carolina	Bamberg	0.00
South Carolina	Barnwell	0.00
South Carolina	Berkeley	0.00
South Carolina	Calhoun	0.00
South Carolina	Charleston	0.02
South Carolina	Cherokee	0.00
South Carolina	Chesterfield	0.00
South Carolina	Clarendon	0.29
South Carolina	Colleton	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
South Carolina	Darlington	0.00
South Carolina	Dorchester	0.00
South Carolina	Edgefield	0.00
South Carolina	Fairfield	0.00
South Carolina	Florence	0.00
South Carolina	Georgetown	0.00
South Carolina	Greenville	0.00
South Carolina	Greenwood	0.00
South Carolina	Hampton	0.00
South Carolina	Horry	0.00
South Carolina	Jasper	0.00
South Carolina	Kershaw	0.00
South Carolina	Lancaster	0.00
South Carolina	Laurens	1.26
South Carolina	Lee	0.00
South Carolina	Lexington	0.00
South Carolina	Marion	0.00
South Carolina	Marlboro	0.00
South Carolina	Newberry	0.00
South Carolina	Oconee	0.00
South Carolina	Orangeburg	0.00
South Carolina	Pickens	0.00
South Carolina	Richland	0.00
South Carolina	Spartanburg	0.03
South Carolina	Sumter	0.00
South Carolina	Williamsburg	0.17
South Carolina	York	0.00
South Dakota	Bennett	0.00
South Dakota	Codington	0.00
South Dakota	Jackson	1.64
South Dakota	Lake	0.00
South Dakota	Pennington	22.59
South Dakota	Spink	0.00
South Dakota	Yankton	0.00
Tennessee	Bedford	0.00
Tennessee	Blount	0.38
Tennessee	Cannon	26.79
Tennessee	Carter	0.00
Tennessee	Chester	0.00
Tennessee	Coffee	0.03
Tennessee	Davidson	0.00
Tennessee	De Kalb	2.77
Tennessee	Fentress	0.00
Tennessee	Franklin	0.83
Tennessee	Gibson	0.00
Tennessee	Greene	8.01

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Tennessee	Grundy	2.03
Tennessee	Hardin	9.00
Tennessee	Hawkins	0.32
Tennessee	Haywood	0.00
Tennessee	Henderson	0.00
Tennessee	Hickman	7.02
Tennessee	Johnson	0.34
Tennessee	Knox	0.00
Tennessee	Lake	8.31
Tennessee	Lawrence	0.00
Tennessee	Lincoln	0.94
Tennessee	Loudon	0.00
Tennessee	McMinn	0.00
Tennessee	McNairy	0.00
Tennessee	Madison	26.54
Tennessee	Marion	0.00
Tennessee	Marshall	0.00
Tennessee	Meigs	0.00
Tennessee	Moore	0.00
Tennessee	Overton	0.00
Tennessee	Putnam	0.00
Tennessee	Rhea	0.00
Tennessee	Robertson	0.00
Tennessee	Rutherford	0.00
Tennessee	Sequatchie	0.00
Tennessee	Sevier	0.00
Tennessee	Sullivan	6.10
Tennessee	Sumner	0.00
Tennessee	Van Buren	1.44
Tennessee	Warren	2.40
Tennessee	Weakley	0.00
Tennessee	White	0.00
Tennessee	Williamson	0.00
Texas	Anderson	0.00
Texas	Atascosa	0.00
Texas	Austin	0.00
Texas	Bailey	0.00
Texas	Bastrop	0.00
Texas	Bexar	0.01
Texas	Blanco	0.00
Texas	Borden	0.00
Texas	Bosque	0.00
Texas	Bowie	0.00
Texas	Brazoria	0.01
Texas	Brazos	0.00
Texas	Brown	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Texas	Burleson	0.00
Texas	Burnet	0.00
Texas	Caldwell	0.00
Texas	Callahan	0.00
Texas	Cameron	0.27
Texas	Cass	0.00
Texas	Cherokee	0.00
Texas	Collin	0.00
Texas	Colorado	0.00
Texas	Comal	0.00
Texas	Comanche	0.00
Texas	Dallam	5.37
Texas	Dallas	0.00
Texas	Dawson	53.12
Texas	Delta	0.00
Texas	Denton	0.00
Texas	Dimmit	0.00
Texas	Eastland	0.00
Texas	Ector	0.00
Texas	Ellis	0.00
Texas	Erath	4.50
Texas	Falls	0.00
Texas	Fannin	0.00
Texas	Fayette	0.00
Texas	Fort Bend	0.01
Texas	Franklin	0.00
Texas	Frio	0.00
Texas	Galveston	0.00
Texas	Gillespie	0.00
Texas	Gonzales	0.00
Texas	Grayson	0.00
Texas	Grimes	0.00
Texas	Guadalupe	0.00
Texas	Hamilton	0.00
Texas	Harris	0.00
Texas	Hartley	5.13
Texas	Hays	0.00
Texas	Henderson	0.00
Texas	Hidalgo	0.09
Texas	Hopkins	0.00
Texas	Houston	0.00
Texas	Hunt	0.00
Texas	Jack	0.00
Texas	Jackson	0.00
Texas	Jasper	0.00
Texas	Jeff Davis	0.00

Data for Figure 20. Loss Ratio

State	County	Loss Ratio
Texas	Jim Wells	0.00
Texas	Johnson	0.00
Texas	Kaufman	0.00
Texas	Kendall	0.00
Texas	Kerr	0.00
Texas	Lamar	0.00
Texas	Lamb	0.00
Texas	Lavaca	0.24
Texas	Lee	0.00
Texas	Leon	0.00
Texas	Liberty	0.00
Texas	Limestone	0.00
Texas	Live Oak	0.00
Texas	Lubbock	0.13
Texas	McLennan	0.00
Texas	Marion	0.00
Texas	Martin	0.00
Texas	Matagorda	0.00
Texas	Midland	0.83
Texas	Montgomery	0.02
Texas	Nueces	0.00
Texas	Orange	0.76
Texas	Palo Pinto	0.00
Texas	Parker	0.00
Texas	Polk	0.00
Texas	Potter	0.80
Texas	Rains	0.00
Texas	Randall	0.00
Texas	Red River	0.00
Texas	Rockwall	0.27
Texas	Runnels	0.00
Texas	Rusk	0.26
Texas	Sabine	0.00
Texas	San Jacinto	0.00
Texas	Smith	0.00
Texas	Swisher	0.00
Texas	Tarrant	0.06
Texas	Taylor	0.00
Texas	Tom Green	0.00
Texas	Travis	0.00
Texas	Tyler	0.00
Texas	Uvalde	0.00
Texas	Val Verde	0.00
Texas	Van Zandt	0.00
Texas	Walker	0.20
Texas	Waller	0.00

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Texas	Washington	0.06
Texas	Webb	0.00
Texas	Wharton	0.00
Texas	Wichita	0.00
Texas	Willacy	0.00
Texas	Williamson	0.00
Texas	Wilson	0.00
Texas	Wise	0.00
Texas	Wood	0.00
Texas	Zavala	0.00
Utah	Davis	0.00
Utah	Salt Lake	0.00
Utah	Utah	0.00
Utah	Weber	0.00
Vermont	Lamoille	0.00
Vermont	Windsor	0.00
Virginia	Accomack	0.01
Virginia	Amelia	0.00
Virginia	Augusta	0.00
Virginia	Bedford	0.00
Virginia	Campbell	0.00
Virginia	Caroline	0.00
Virginia	Charlotte	0.00
Virginia	Clarke	0.00
Virginia	Culpeper	0.00
Virginia	Essex	0.00
Virginia	Floyd	0.00
Virginia	Fluvanna	0.00
Virginia	Franklin	0.00
Virginia	Frederick	0.00
Virginia	Gloucester	0.00
Virginia	Halifax	0.00
Virginia	Hanover	0.01
Virginia	Henrico	0.00
Virginia	Isle of Wight	0.00
Virginia	King William	0.00
Virginia	Loudoun	0.00
Virginia	Mathews	0.00
Virginia	Mecklenburg	0.00
Virginia	Nelson	0.00
Virginia	New Kent	0.00
Virginia	Northampton	0.01
Virginia	Orange	0.00
Virginia	Patrick	0.00
Virginia	Pittsylvania	0.00
Virginia	Prince Edward	0.00

Data for Figure 20. Loss Ratio

State	County	Loss Ratio
Virginia	Rappahannock	0.00
Virginia	Richmond	0.00
Virginia	Roanoke	0.00
Virginia	Rockbridge	0.00
Virginia	Rockingham	0.00
Virginia	Shenandoah	0.00
Virginia	Smyth	0.00
Virginia	Southampton	0.00
Virginia	Surry	0.00
Virginia	Sussex	0.00
Virginia	Washington	0.00
Virginia	Westmoreland	0.00
Virginia	Chesapeake City	0.00
Virginia	Suffolk City	0.00
Virginia	Virginia Beach City	0.00
Washington	Adams	0.00
Washington	Benton	0.00
Washington	Clark	0.00
Washington	Franklin	0.00
Washington	Grant	0.12
Washington	Grays Harbor	0.00
Washington	King	0.00
Washington	Klickitat	0.00
Washington	Lewis	0.00
Washington	Pierce	0.00
Washington	Skagit	0.00
Washington	Snohomish	0.52
Washington	Spokane	0.00
Washington	Stevens	0.01
Washington	Thurston	0.00
Washington	Walla Walla	0.00
Washington	Whatcom	0.00
Washington	Yakima	7.18
West Virginia	Fayette	0.00
West Virginia	Greenbrier	0.00
West Virginia	Jefferson	0.00
West Virginia	Putnam	0.00
West Virginia	Taylor	0.00
West Virginia	Wirt	0.00
Wisconsin	Adams	0.00
Wisconsin	Bayfield	0.00
Wisconsin	Brown	0.00
Wisconsin	Calumet	0.00
Wisconsin	Chippewa	0.00
Wisconsin	Columbia	0.00
Wisconsin	Dane	0.50

Data for Figure 20. Loss Ratio		
State	County	Loss Ratio
Wisconsin	Dodge	0.00
Wisconsin	Door	0.00
Wisconsin	Eau Claire	0.00
Wisconsin	Fond Du Lac	0.10
Wisconsin	Green Lake	0.00
Wisconsin	Jackson	0.00
Wisconsin	Kenosha	0.00
Wisconsin	Kewaunee	0.00
Wisconsin	Lincoln	0.20
Wisconsin	Manitowoc	0.00
Wisconsin	Marathon	0.00
Wisconsin	Milwaukee	0.00
Wisconsin	Monroe	0.00
Wisconsin	Oneida	0.00
Wisconsin	Outagamie	0.00
Wisconsin	Pierce	0.00
Wisconsin	Polk	0.00
Wisconsin	Portage	0.00
Wisconsin	Racine	0.00
Wisconsin	Rock	0.00
Wisconsin	St. Croix	0.00
Wisconsin	Shawano	0.00
Wisconsin	Walworth	0.00
Wisconsin	Washington	0.00
Wisconsin	Waukesha	0.00
Wisconsin	Waupaca	0.00
Wisconsin	Waushara	0.00
Wisconsin	Winnebago	0.00
Wisconsin	Wood	0.00
Wyoming	Natrona	0.00
Wyoming	Platte	0.00
Wyoming	Teton	0.00

Data for Figure 21. State Loss Ratios 1999 through 2011

State	Loss Ratio
Alabama	0.08
Arizona	0.03
Arkansas	0.00
California	0.14
Colorado	1.58
Connecticut	0.00
Delaware	0.00
Florida	1.15
Georgia	0.21
Hawaii	0.00
Idaho	0.00
Illinois	0.01
Indiana	0.00
Iowa	0.05
Kansas	0.00
Kentucky	2.80
Louisiana	0.04
Maine	0.00
Maryland	0.00
Massachusetts	0.00
Michigan	0.00
Minnesota	0.10
Mississippi	0.03
Missouri	0.47
Montana	0.00
Nebraska	1.02
New Hampshire	0.00
New Jersey	0.76
New Mexico	1.01
New York	0.00
North Carolina	0.32
North Dakota	0.14
Ohio	0.18
Oklahoma	0.08
Oregon	0.00
Pennsylvania	0.00
South Carolina	0.00
South Dakota	0.43
Tennessee	1.47
Texas	0.25
Virginia	0.00
Washington	3.46
Wisconsin	0.01

Data for Figure 22. Florida Policies Earning Premium 1999 through 2011

State	County	Policies
Florida	Alachua	232
Florida	Baker	26
Florida	Brevard	195
Florida	Broward	894
Florida	Calhoun	9
Florida	Charlotte	55
Florida	Citrus	49
Florida	Clay	53
Florida	Collier	239
Florida	Columbia	60
Florida	Dade	1134
Florida	De Soto	120
Florida	Dixie	4
Florida	Duval	60
Florida	Escambia	13
Florida	Flagler	27
Florida	Gadsden	111
Florida	Gilchrist	45
Florida	Glades	112
Florida	Hamilton	18
Florida	Hardee	285
Florida	Hendry	117
Florida	Hernando	140
Florida	Highlands	309
Florida	Hillsborough	830
Florida	Indian River	149
Florida	Jackson	31
Florida	Jefferson	126
Florida	Lafayette	19
Florida	Lake	1229
Florida	Lee	908
Florida	Leon	24
Florida	Levy	68
Florida	Liberty	14
Florida	Madison	75
Florida	Manatee	539
Florida	Marion	194
Florida	Martin	370
Florida	Miami-Dade	5373
Florida	Monroe	10
Florida	Okaloosa	11
Florida	Okeechobee	91
Florida	Orange	1892
Florida	Osceola	167
Florida	Palm Beach	2214
Florida	Pasco	289

Data for Figure 22. Florida Policies Earning Premium 1999 through 2011

State	County	Policies
Florida	Pinellas	43
Florida	Polk	496
Florida	Putnam	75
Florida	St. Johns	56
Florida	St. Lucie	294
Florida	Santa Rosa	51
Florida	Sarasota	121
Florida	Seminole	167
Florida	Sumter	244
Florida	Suwannee	70
Florida	Taylor	10
Florida	Volusia	303
Florida	Wakulla	7
Florida	Walton	6

Data for Figure 23. Florida Liability 1999 through 2011

State	County	Liability (Millions of \$)
Florida	Alachua	166.6
Florida	Baker	59.3
Florida	Brevard	68.1
Florida	Broward	208.0
Florida	Calhoun	6.1
Florida	Charlotte	10.9
Florida	Citrus	9.4
Florida	Clay	35.4
Florida	Collier	112.5
Florida	Columbia	16.2
Florida	Dade	694.8
Florida	De Soto	39.5
Florida	Dixie	0.5
Florida	Duval	13.7
Florida	Escambia	2.9
Florida	Flagler	48.1
Florida	Gadsden	258.5
Florida	Gilchrist	20.6
Florida	Glades	42.8
Florida	Hamilton	9.7
Florida	Hardee	147.6
Florida	Hendry	59.8
Florida	Hernando	114.2
Florida	Highlands	125.5
Florida	Hillsborough	370.6
Florida	Indian River	44.3
Florida	Jackson	11.0
Florida	Jefferson	77.3
Florida	Lafayette	20.1
Florida	Lake	670.7
Florida	Lee	570.6
Florida	Leon	6.4
Florida	Levy	121.2
Florida	Liberty	1.0
Florida	Madison	22.5
Florida	Manatee	209.5
Florida	Marion	92.2
Florida	Martin	274.1
Florida	Miami-Dade	3758.8
Florida	Monroe	0.7
Florida	Okaloosa	1.5
Florida	Okeechobee	81.3
Florida	Orange	507.7
Florida	Osceola	37.4
Florida	Palm Beach	1218.8
Florida	Pasco	54.4

Data for Figure 23. Florida Liability 1999 through 2011

State	County	Liability (Millions of \$)
Florida	Pinellas	7.0
Florida	Polk	157.5
Florida	Putnam	88.5
Florida	St. Johns	21.1
Florida	St. Lucie	167.8
Florida	Santa Rosa	33.3
Florida	Sarasota	31.7
Florida	Seminole	82.6
Florida	Sumter	150.4
Florida	Suwannee	52.5
Florida	Taylor	34.1
Florida	Volusia	147.0
Florida	Wakulla	0.8
Florida	Walton	0.5

Data for Figure 24. Florida Indemnities Paid 1999 through 2011

State	County	Indemnity (Millions of \$)
Florida	Alachua	0.1
Florida	Baker	4.8
Florida	Brevard	2.6
Florida	Broward	8.9
Florida	Calhoun	0.0
Florida	Charlotte	0.2
Florida	Citrus	0.1
Florida	Clay	0.1
Florida	Collier	0.4
Florida	Columbia	0.0
Florida	Dade	66.7
Florida	De Soto	1.8
Florida	Dixie	0.1
Florida	Duval	0.1
Florida	Escambia	0.0
Florida	Flagler	0.0
Florida	Gadsden	0.2
Florida	Gilchrist	0.0
Florida	Glades	4.7
Florida	Hamilton	0.0
Florida	Hardee	4.7
Florida	Hendry	4.3
Florida	Hernando	0.0
Florida	Highlands	3.7
Florida	Hillsborough	0.5
Florida	Indian River	0.7
Florida	Jackson	0.0
Florida	Jefferson	0.0
Florida	Lafayette	0.0
Florida	Lake	3.2
Florida	Lee	14.5
Florida	Leon	0.0
Florida	Levy	0.4
Florida	Liberty	0.0
Florida	Madison	0.0
Florida	Manatee	3.3
Florida	Marion	0.8
Florida	Martin	12.2
Florida	Miami-Dade	328.7
Florida	Monroe	0.4
Florida	Okaloosa	0.0
Florida	Okeechobee	11.1
Florida	Orange	5.0
Florida	Osceola	0.5
Florida	Palm Beach	117.0
Florida	Pasco	0.0

Data for Figure 24. Florida Indemnities Paid 1999 through 2011		
State	County	Indemnity (Millions of \$)
Florida	Pinellas	0.0
Florida	Polk	1.7
Florida	Putnam	0.4
Florida	St. Johns	0.1
Florida	St. Lucie	8.4
Florida	Santa Rosa	0.8
Florida	Sarasota	0.0
Florida	Seminole	12.7
Florida	Sumter	0.0
Florida	Suwannee	0.0
Florida	Taylor	0.0
Florida	Volusia	1.6
Florida	Wakulla	0.0
Florida	Walton	0.0

Data for Figure 25. Florida Loss Ratios 1999 through 2011

State	County	Loss Ratio
Florida	Alachua	0.04
Florida	Baker	3.22
Florida	Brevard	1.27
Florida	Broward	1.15
Florida	Calhoun	0.00
Florida	Charlotte	0.81
Florida	Citrus	0.46
Florida	Clay	0.11
Florida	Collier	0.11
Florida	Columbia	0.00
Florida	Dade	2.31
Florida	De Soto	1.68
Florida	Dixie	14.97
Florida	Duval	0.37
Florida	Escambia	0.00
Florida	Flagler	0.00
Florida	Gadsden	0.05
Florida	Gilchrist	0.01
Florida	Glades	3.91
Florida	Hamilton	0.00
Florida	Hardee	1.08
Florida	Hendry	2.21
Florida	Hernando	0.00
Florida	Highlands	0.85
Florida	Hillsborough	0.05
Florida	Indian River	0.46
Florida	Jackson	0.12
Florida	Jefferson	0.00
Florida	Lafayette	0.00
Florida	Lake	0.17
Florida	Lee	0.93
Florida	Leon	0.00
Florida	Levy	0.21
Florida	Liberty	0.00
Florida	Madison	0.04
Florida	Manatee	0.57
Florida	Marion	0.37
Florida	Martin	1.21
Florida	Miami-Dade	1.79
Florida	Monroe	19.04
Florida	Okaloosa	0.00
Florida	Okeechobee	4.81
Florida	Orange	0.34
Florida	Osceola	0.49
Florida	Palm Beach	2.29
Florida	Pasco	0.01

Data for Figure 25. Florida Loss Ratios 1999 through 2011		
State	County	Loss Ratio
Florida	Pinellas	0.00
Florida	Polk	0.38
Florida	Putnam	0.17
Florida	St. Johns	0.09
Florida	St. Lucie	1.48
Florida	Santa Rosa	1.26
Florida	Sarasota	0.00
Florida	Seminole	6.08
Florida	Sumter	0.00
Florida	Suwannee	0.02
Florida	Taylor	0.00
Florida	Volusia	0.33
Florida	Wakulla	0.00
Florida	Walton	0.00

Attachments

- Attachment I. 2008 Nursery Crop Provisions
- Attachment II. 2008 Peak Inventory Endorsement
- Attachment III. 2006 Rehabilitation Endorsement
- Attachment IV. 2006 Nursery Grower's Pilot Price Endorsement
- Attachment V. 2011 Common Crop Insurance Policy, Basic Provisions
- Attachment VI. 2012 Nursery Loss Adjustment Standards Handbook
- Attachment VII. 2011 Loss Adjustment Manual Standards Handbook
- Attachment VIII. Sample Actuarial Materials
- Attachment IX. Other Material Cited in the Report or Used in its Preparation
 - Attachment IXa. 2012 Nursery Crop Underwriting Guide
 - Attachment IXb. 2011 Crop Insurance Handbook

With RMA's consent, the Contractor is incorporating these attachments by reference identifying on the title page of the attachment the location on RMA's website of the relevant RMA document.

Attachment I

2008 Nursery Crop Provisions

The 2008 Nursery Crop Provisions (08-073 (rev. 10-06) can be found at
<http://www.rma.usda.gov/policies/2008/08-073.pdf>.

Attachment II

2008 Peak Inventory Endorsement

The 2008 Peak Inventory Endorsement (08-073A) can be found at
<http://www.rma.usda.gov/policies/2008/08-073a.pdf>.

Attachment III

2006 Rehabilitation Endorsement

The 2006 Rehabilitation Endorsement (06-073B) can be found at
http://www.rma.usda.gov/policies/2006/crops/pdf/06_073b.pdf.

Attachment IV

2006 Nursery Grower's Pilot Price Endorsement

The 2006 Pilot Nursery Grower's Pilot Price Endorsement (06-073C) can be found at
<http://www.rma.usda.gov/policies/2006/pilot/pdf/06073nur-c.pdf>.

Attachment V

2011 Common Crop Insurance Policy, Basic Provisions

USDA RMA provides both current and historic Common Crop Insurance Policy, Basic Provisions on its Website (<http://www.rma.usda.gov/>). The Common Crop Insurance Policy, Basic Provisions (11-br), whose use is not limited to the Nursery Program, can be found at <http://www.rma.usda.gov/policies/2011/11-br.pdf>.

Attachment VI

2012 Nursery Loss Adjustment Standards Handbook

The 2012 Nursery Loss Adjustment Standards Handbook can be found at
http://www.rma.usda.gov/handbooks/25000/2012/12_25750.pdf.

Attachment VII

2011 Loss Adjustment Manual Standards Handbook

USDA RMA provides both current and historic Loss Adjustment Manual (LAM) Standards Handbook on its Website (<http://www.rma.usda.gov/>). The LAM Standards Handbook (FCIC-25010 (02-2011)), whose application is not limited to the Nursery Program, can be found at http://www.rma.usda.gov/handbooks/25000/2011/11_25010.pdf.

Attachment VIII

Actuarial Materials

The Type 11, 15 and 21 data were the actuarial materials used to prepare the rating analysis. These records are confidential and can therefore not be incorporated in this report. Alternative rating output is available from the RMA Actuarial Information Browser (<http://webapp.rma.usda.gov/apps/actuarialinformationbrowser/>). The output from the RMA Actuarial Information Browser for the Nursery Program is several thousand pages. To limit the impact on paper usage when this report is printed, sample RMA Actuarial Information Browser documents are provided to illustrate the nature of the output from the browser, with agreement of the Government.

Exhibit 1. Sample output from the RMA Information Browser Report Display illustrating output from the Types/Practices tab.

Hide Selection Criteria

Criteria Order

- Commodity
- Commodity Year
- Insurance Plan
- State/County

Select - Criteria

*Commodity : Nursery (FG&C) (0073)

*Commodity Year : 2012

*Insurance Plan : Dollar Amount Of Insurance (50)

*State : Tennessee (47)

*County : Benton (005)

Reinsurance Year 2011 Version 2.7.5

Types / Practices
Unit Structure
Dates
Rates
Special Provisions
Subsidy Factors
Maps
Links

Types/Practices Selection Criteria

Year: 2012 Commodity: Nursery (FG&C) (0073) State: Tennessee (47)
 Data: Released Plan: Dollar Amount Of Insurance (50) County: Benton (005)

Types / Practices						
Type	Deciduous Trees (Shade, Flower) 056	Deciduous Trees (Shade, Flower) 056	Deciduous Trees (Shade, Flower) 056	Deciduous Trees (Shade, Flower) 056	Deciduous Trees (Shade, Flower) 056	Deciduous Trees (Shade, Flower) 056
Practice	Field Grown 007	Container 008	Field Grown(OC) 765	Field Grown(OT) 766	Container(OC) 767	Container(OC) 767

Exhibit 2. Sample output from the RMA Information Browser Report Display illustrating output from the Unit Structure tab.

☑ Show Selection Criteria

Types / Practices | **Unit Structure** | Dates | Rates | Special Provisions | Subsidy Factors | **Maps** | Links

1 of 1 | 100% | Find | Next

Unit Structure
Selection Criteria

Year: 2012 Commodity: Nursery (FG&C) (0073) State: Tennessee (47)
Data: Released Plan: Dollar Amount Of Insurance (50) County: Benton (005)

Types / Practices					
Type	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	D
Practice	Field Grown 007	Container 008	Field Grown(OC) 765	Field Grown(OT) 766	C
Unit Availability					
Basic Unit Allowed Flag	Y	Y	Y	Y	Y
Optional Unit Allowed Flag	N	N	N	N	N
Enterprise Unit Allowed Flag	N	N	N	N	N
Whole Farm Unit Allowed Flag	N	N	N	N	N

Exhibit 3. Sample output from the RMA Information Browser Report Display illustrating output from the Dates tab.

☑ Show Selection Criteria

Types / Practices | Unit Structure | **Dates** | Rates | Special Provisions | Subsidy Factors | Maps | Links

1 of 1 | 100% | Find | Next

Dates
Selection Criteria

Year: 2012 Commodity: Nursery (FG&C) (0073) State: Tennessee (47)
Data: Released Plan: Dollar Amount Of Insurance (50) County: Benton (005)

Types / Practices					
Type	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous T (Shade,Flow
Practice Code	Field Grown 007	Container 008	Field Grown(OC) 765	Field Grown(OT) 766	Container(O
Type/Practice (T/P #)	T/P 1	T/P 2	T/P 3	T/P 4	T/P 5
Base County Dates					
Sales Closing Date	05/01/2011	05/01/2011	05/01/2011	05/01/2011	05/01/2011
Cancellation Date	05/31/2011	05/31/2011	05/31/2011	05/31/2011	05/31/2011
Earliest Planting Date					
Final Planting Date					
Acreage Reporting Date					
Premium Billing Date	03/01/2012	03/01/2012	03/01/2012	03/01/2012	03/01/2012
End Of Insurance Date	05/31/2012	05/31/2012	05/31/2012	05/31/2012	05/31/2012
Termination Date	05/31/2012	05/31/2012	05/31/2012	05/31/2012	05/31/2012
Contract Change Date	01/31/2012	01/31/2012	01/31/2012	01/31/2012	01/31/2012

Exhibit 4. Sample output from the RMA Information Browser Report Display illustrating output from the Rates tab.

Show Selection Criteria

Types / Practices | Unit Structure | Dates | **Rates** | Special Provisions | Subsidy Factors | Maps | Links

1 of 1 | 100% | Find | Next

Rates
Selection Criteria

Year: 2012 Commodity: Nursery (FG&C) (0073) State: Tennessee (47)
Data: Released Plan: Dollar Amount Of Insurance (50) County: Benton (005)

Types / Practices					
Type	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous Trees (Shade,Flower) 056	Deciduous Tre (Shade,Flower)
Practice	Field Grown 007	Container 008	Field Grown(OC) 765	Field Grown(OT) 766	Container(OC)
Type/Practice (T/P #)	T/P 1	T/P 2	T/P 3	T/P 4	T/P 5

Base County Rate(s)					
Type/Practice (T/P #)	T/P 1	T/P 2	T/P 3	T/P 4	T/P 5
Coverage Level Percent	0.65	0.65	0.65	0.65	0.65
Base Rate	0.0210	0.0210	0.0210	0.0210	0.0210
Unit Of Measure	DOL	DOL	DOL	DOL	DOL

Exhibit 5. Sample output from the RMA Information Browser Report Display illustrating output from the Special Provisions tab.

Statement
General
The insurable value of damaged plants that are accepted for coverage and will fully recover at some time after the loss occurrence is calculated as follows:
<ol style="list-style-type: none">1. Determine the number of months that was required for the plant to reach the stage of growth at which damage occurred;2. Determine the number of months that will be required for the plant to recover to the stage of growth at which damage occurred;3. Divide the results of number 2 by the results of number 1;4. Subtract the results of number 3 from 1.00; and5. Multiply the results of number 4 by the insurable plant price.
MISSING SIZES - If at any time while determining the inventory or loss values in the nursery, it is determined the size of a plant is not listed in your nursery catalog or price list, but the genus, species, subspecies, variety or cultivar is listed in the nursery catalog or price list, the wholesale price for the missing plant size will be determined using the lower of the price determined from the calculation listed below or the price in the EPL/PPS, unless the plant is endorsed under the Nursery Grower's Price Endorsement (NGPE). If the plant is endorsed under the NGPE and the calculated wholesale price for the missing plant size determined in (a) or (b) below is greater than the EPL/PPS price, then the price used for insurance purposes is the calculated wholesale price, not the EPL/PPS price.
(a) When only one plant size listed in the catalog or price list is nearest to the size of the missing plant, calculate the proration factor using the calculation listed below:

Exhibit 6. Sample output from the RMA Information Browser Report Display illustrating the output from the Subsidy Factors tab.

Subsidy Factors								
Selection Criteria								
Year: 2012	Commodity: Nursery (FG&C) (0073)	State: Tennessee (47)						
Data: Released	Plan: Dollar Amount Of Insurance (50)	County: Benton (005)						
Subsidy Factors								
Coverage Level	CAT	0.50	0.55	0.60	0.65	0.70	0.75	
Subsidy Factor	Basic Unit	1.000	0.670	0.640	0.640	0.590	0.590	0.550

Attachment IX

Other Material Cited in the Report or Used in its Preparation

Attachment IXa

2012 Nursery Crop Underwriting Guide

The 2012 Nursery Crop Underwriting Guide (24090-1 (2-2011)) can be found at
<http://www.rma.usda.gov/handbooks/24000/2012/24090-1.pdf>.

Attachment IXb

2011 Crop Insurance Handbook

USDA RMA provides both current and historic Crop Insurance Handbooks on its Website (<http://www.rma.usda.gov/>). For this report, the 2011 Crop Insurance Handbook (FCIC 18010-1 (11-2010)), which has applications beyond the Nursery Program, can be found at http://www.rma.usda.gov/handbooks/18000/2011/11_18010-2.pdf.