



Supplemental Area Insurance Plan

2021 AAEA Graduate Student Extension Competition

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Policy Background

2014 Farm Bill

Commodity Program

- Agricultural Risk Coverage (ARC)
- Price Loss Coverage (PLC)

Crop Insurance Program

- Supplemental Coverage Option (SCO)
- Stacked Income Protection Plan (STAX)

2021

Crop Insurance Program

- Enhanced Coverage Option (ECO)

Risk Management Agency (RMA) Insurance Products

Acronym	Name	Unit	Insures
RP	Revenue Protection	Farm level	Revenue
RPHPE	RP with Harvest Price Exclusion		Revenue
YP	Yield Protection		Yield

- SCO and ECO payments are triggered based on losses at the **county-level**.
- SCO and ECO provide **add-on** coverage on top of individual crop insurance plan.
- SCO is only eligible for farmers selecting PLC as commodity program choices.

95% or 90%		
86%	ECO Coverage (95% or 90% to 86%)	
80%	SCO Coverage (86% to 80%)	
0%	Individual Coverage RP, RP-HPE, or YP (80% coverage level)	

Opportunity



Complexity of crop insurance choices has remarkably increased.

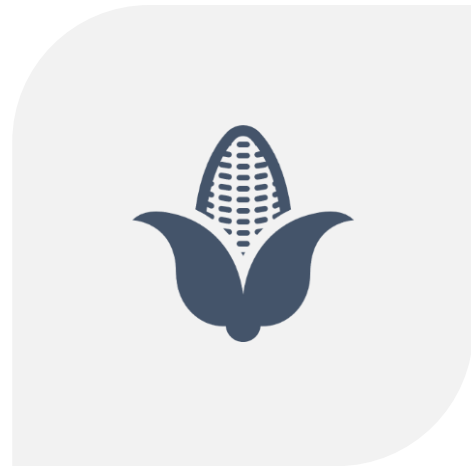


Stakeholders desire to better understand how the new policy might impact risk exposure.

Program Goals and Objectives

- Educate agricultural producers/stakeholder about the Enhanced Coverage Program (ECO) and its relationship with existing insurance and Farm Bill programs.
- Provide information to help producers make optimal, informed decision regarding its use.
- Develop web-based decision tools and teach decisions makers how to use the tools.
- Deliver research findings that may be beneficial to the target audience.

Target Audience

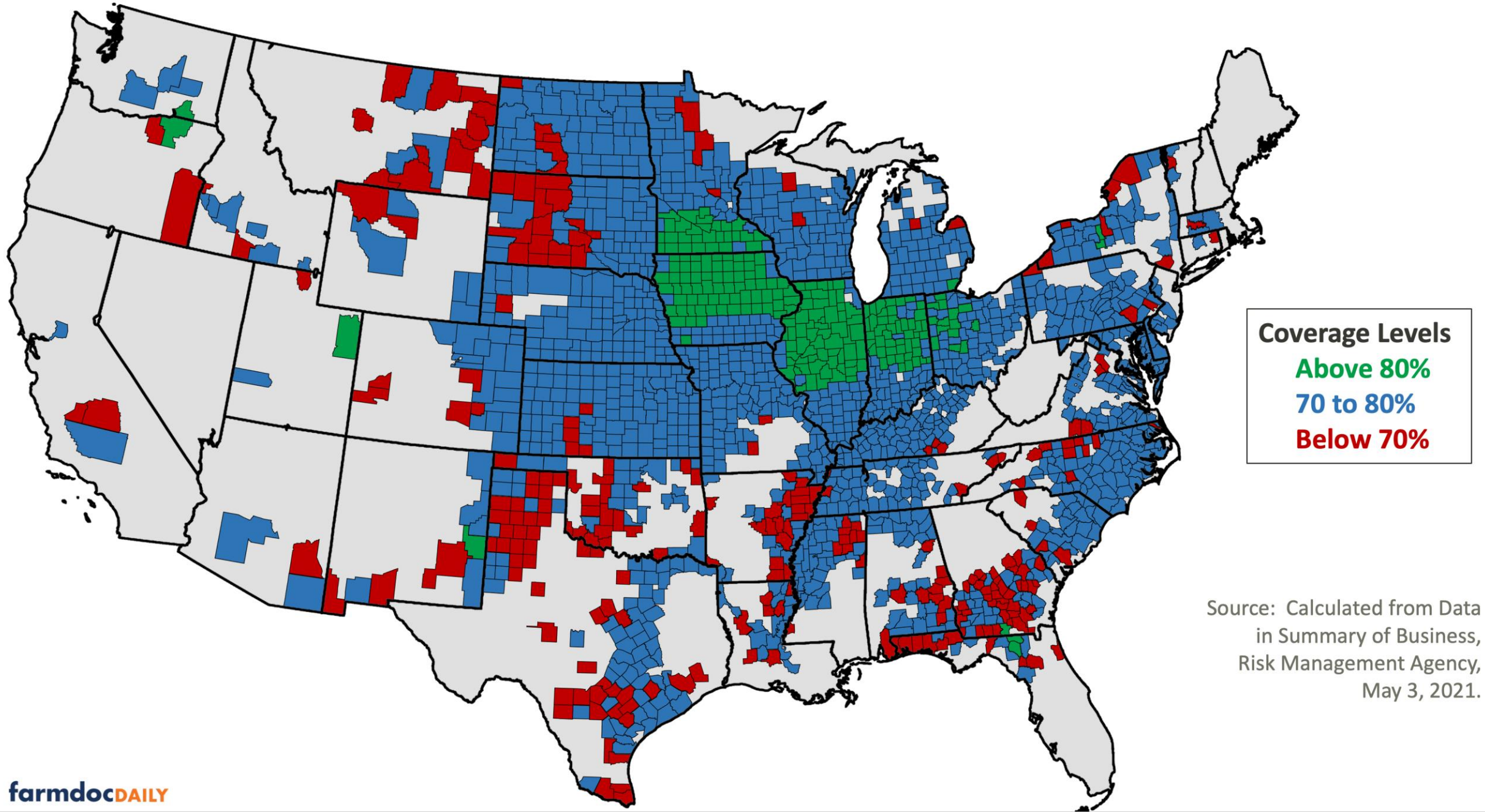


**CORN-BELT AGRICULTURAL
PRODUCERS/STAKEHOLDERS**



POLICY MAKERS

Figure 1. Average Coverage Level for Revenue Protection Policies, Corn, 2020



Source: Calculated from Data in Summary of Business, Risk Management Agency, May 3, 2021.

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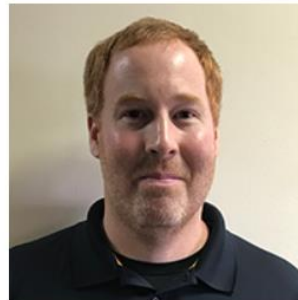
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Outreach Channels



**RESEARCH
ANALYSIS**



**COMMUNITY
EDUCATION**

Research

Research Questions

- How can/should farmers incorporate these area plans into their risk management plans?
- What level of risk reduction do the supplemental plans offer?

Basis risk

- The difference in losses between county-level outcomes and farm-level outcomes.
 - ⑩ Under-compensation
 - ⑩ Over-compensation

Objective

- To quantify **basis risk** and risk reduction.

Research

Data

- County yields from USDA National Agricultural Statistics Service (NASS)
- Futures harvest prices
- Projected insurance price and volatility factor from USDA Risk Management Agency (RMA) for 2021 crop year (\$4.58/bu projected price and 0.23 volatility factor)

Methodology

- Simulation analysis

Policy Comparison

- RP-85
- RP-80 + SCO
- RP-80 + SCO + ECO-90
- RP-80 + SCO + ECO-95

Figure 1. Likelihood that Indemnity Payments will be Less than RP-85 Indemnities

Under-compensation

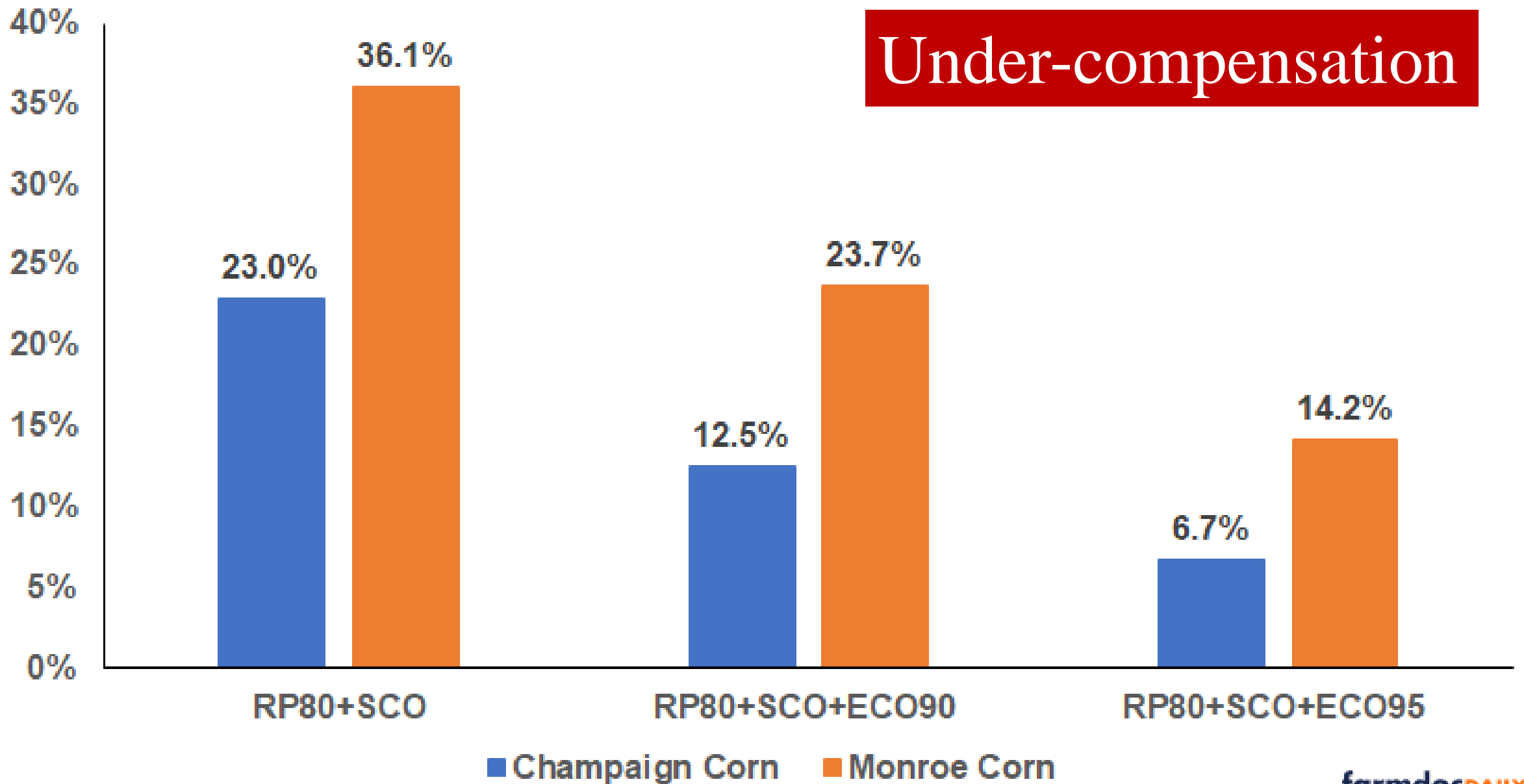
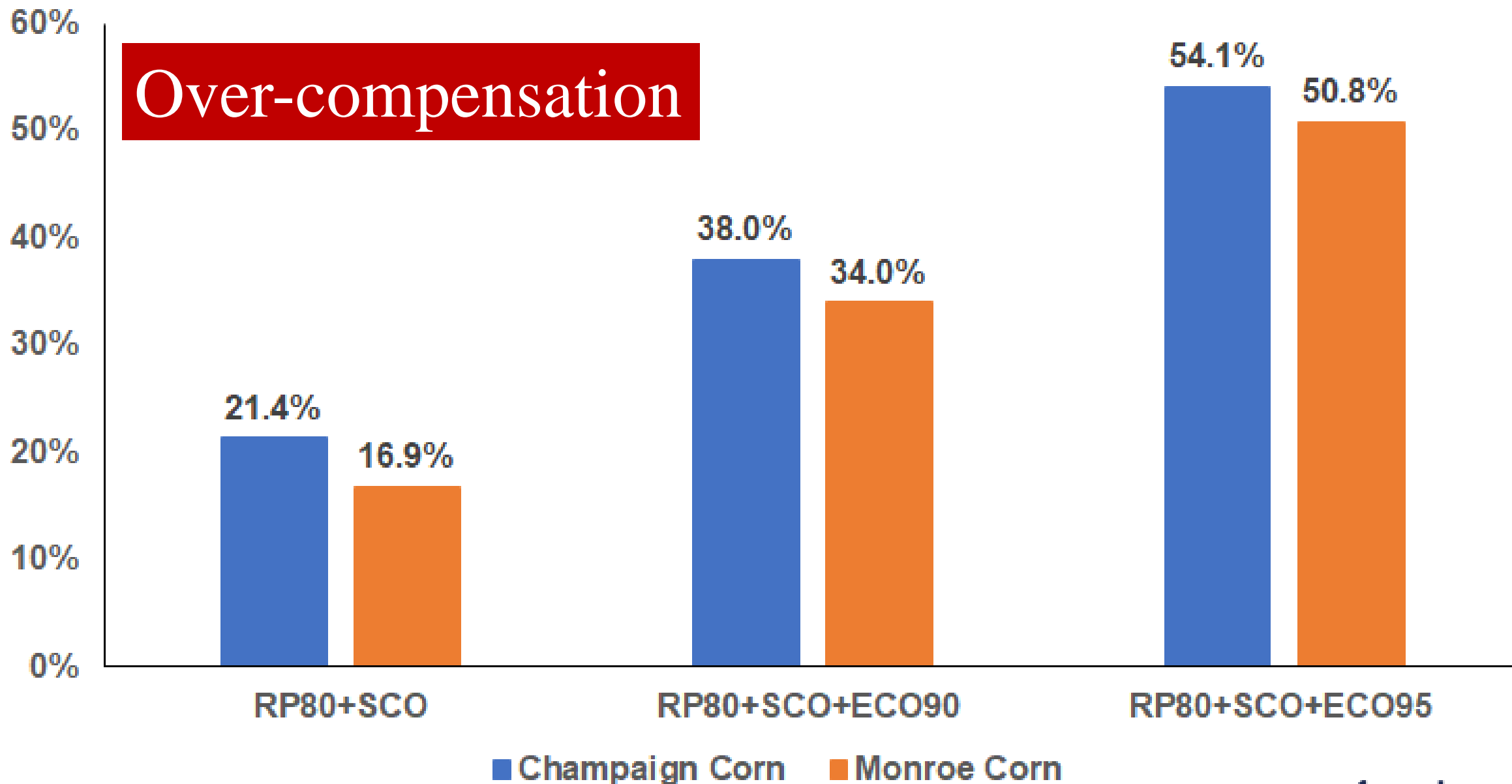
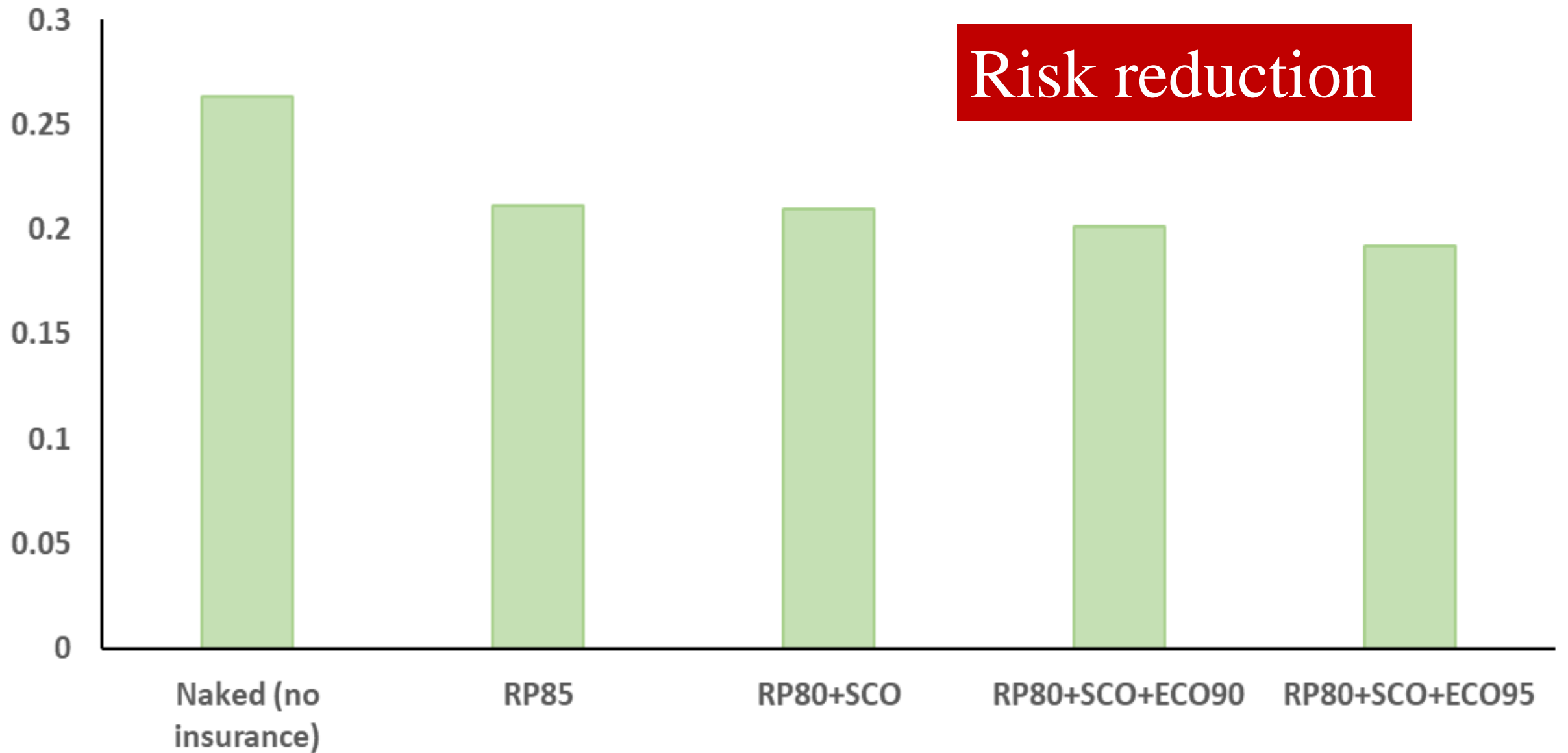


Figure 1. Likelihood that Indemnity Payments will be Greater than RP-85 Indemnities



Coefficient of Variation of Farm Revenue + Net Indemnities, Champaign County Corn



Program Outputs: Publication

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Supplemental Area Insurance and Basis Risk Measures: Part I

Juo-Han Tsay, Nick Paulson, and Gary Schnitkey

Department of Agricultural and Consumer Economics
University of Illinois

May 5, 2021

farmdoc daily (11): 72

Gardner Policy Series

Recommended citation format: Tsay, J., N. Paulson, and G. Schnitkey. "Supplemental Area Insurance and Basis Risk Measures: Part I." *farmdoc daily* (11): 72, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, May 5, 2021.

Permalink: <https://farmdocdaily.illinois.edu/2021/05/supplemental-area-insurance-and-basis-risk-measures-part-1.html>

The Enhanced Coverage Option (ECO) is a new supplemental insurance program introduced this year, providing county coverage from 90% or 95% coverage level down to 86% (see *farmdoc daily* articles on [November 24, 2020](#), [December 8, 2020](#), [December 10, 2020](#), [December 15, 2020](#), [December 22, 2020](#), [February 23, 2021](#), [March 2, 2021](#) for more information). The Supplemental Coverage Option (SCO) is another county-based policy that can be used, with or without ECO, to supplement underlying farm-level coverage.

Since ECO and SCO payments are triggered based on losses experienced at the county-level, indemnities may not always match losses experienced at the farm-level over the coverage range. This potential mismatch in loss coverage between farm and area insurance products is often referred to as basis risk and may reduce demand for county-level insurances (Yu et al. 2019).

This article compares some insurance coverage scenarios which use the ECO and SCO products with Revenue Protection (RP) coverage to a baseline case of 85% RP. This year, some farmers may have considered lowering their RP coverage level to 80% and then using SCO and ECO to provide protection above 80%. Herein, we look at the likelihood that county-based coverage triggers smaller payments than 85% RP, a situation also referred to as a "false negative" or under-compensation of farm-level losses.

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Supplemental Area Insurance and Basis Risk Measures: Part II

Juo-Han Tsay, Nick Paulson, and Gary Schnitkey

Department of Agricultural and Consumer Economics
University of Illinois

May 6, 2021

farmdoc daily (11): 73

Gardner Policy Series

Recommended citation format: Tsay, J., N. Paulson, and G. Schnitkey. "Supplemental Area Insurance and Basis Risk Measures: Part II." *farmdoc daily* (11): 73, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, May 6, 2021.

Permalink: <https://farmdocdaily.illinois.edu/2021/05/supplemental-area-insurance-and-basis-risk-measures-part-2.html>

Yesterday, we examined the likelihood that payments from crop insurance policy combinations utilizing SCO and ECO would under-compensate farm-level losses compared to using a higher level RP policy, also referred to as "false-negatives" (see *farmdoc daily* article from [May 5, 2021](#)). Today, we examine the likelihood that policy combinations utilizing SCO and ECO might over-compensate losses, also referred to as "false-positives". Under-compensation results in insufficient coverage at the farm level and concerns over the effectiveness of risk protection offered by the supplemental area plans. Over-compensation results in concerns related to program efficiency, particularly since the crop insurance program is supported with public resources. Both these articles contribute to the understanding of basis risk, which refers to the potential mismatch in coverage between individual (farm-level) and area (county-level) insurance programs.

Area Insurance Basis Risk

Basis risk associated with area insurance plans refers to the potential difference between losses experienced at the farm-level for individual insurance plans and those experienced at the county-level for the area plan. There are two potential mismatches, or errors, that can result from the use of area-based coverage:

1. Indemnity payments from the area plan will be insufficient to cover farm-level losses when they occur (under compensation or a false-negative error) (see *farmdoc daily* article from [May 5, 2021](#) for more information).
2. Indemnity payments from the area plan will be larger than what is needed to fully cover farm-level losses (over-compensation or a false-positive error).

Today's article focuses on the likelihood of over-compensation or false-positive errors.

Series of Presentation and Webinars



Farm Program and Crop Insurance Decisions for 2021

ILLINOIS
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Gary Schnitkey **farmdocDAILY** **Nick Paulson**



What is Enhanced Coverage Option (ECO)?

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farmdocDAILY 5 minute farmdoc

Setting up for a Profitable 2021 for Illinois and Midwest Farms

ECO and Crop Insurance **farmdocDAILY**

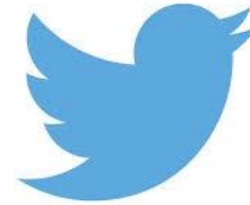
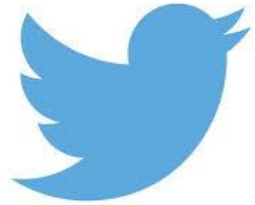
Gary Schnitkey **Bruce J. Sherrick, Ph.D.**
Soybean Industry Chair, In Agricultural Strategy Director, TMAA Center for Farmland Research, Ewin Professor of Farmland Economics

Setting up for a Profitable 2021 for Illinois and Midwest Farms

Final Look at Commodity Title and Crop Insurance Decisions

Nick Paulson **Gary Schnitkey** **Bruce J. Sherrick, Ph.D.**
farmdocDAILY Director, TMAA Center for Farmland Research, Ewin Professor of Farmland Economics

Communication Outlets



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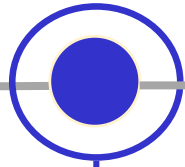
Publish one article of research-based analysis each business day

Farm Policy News

Publish updates on current developments in the farm economy and U.S. farm policy

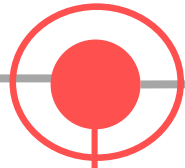
Timeline

Crop Insurance
Deadline
March 15th



November 2020

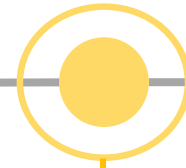
- The New Enhanced Coverage Option (ECO) Crop Insurance Program



December 2020

- Coverage levels on RP
- **Premium** for ECO
- **Historical analysis** of the frequency triggering ECO payments
- **Payments examples** under ECO

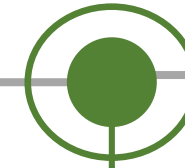
- IFES 2020: Farm Program and Crop Insurance Decisions for 2021



January 2021

- Release of the 2021 crop insurance **decision tool**
- **Potential Payouts** from ECO

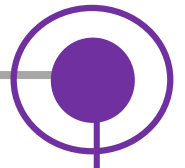
- 2021 Crop Insurance Premium for Corn
- ECO and Crop Insurance



March 2021

- RP, ECO, and SCO **tradeoffs**
- Crop Insurance Decisions for 2021

- What is ECO
- Final Look at Crop Insurance Decisions



May 2021

- **ECO use** on corn
- **Basis risk** measure

Evaluation

Webinars

Youtube

Publication/decision tools

Evaluation – Survey before Webinars

Registration
Date/Time

Time in
Session

State/Postal
Code/Country

Questions and
Comments

Which best
describes
you?

**Evaluation –
Survey
during
Webinars**
(Feb. 11th, 2021)

How is the audio?

Are you going to change your commodity title choices?

What do you think the harvest price will be?

Will the higher premiums cause you to lower coverage or change plans?

Are you interested in ECO?

Evaluation – Survey after Webinars

Please rate this webinar. (1 to 10)

How may we improve the webinars?

What future webinars would you like to see?

Any additional questions or comments you wish to make.

Evaluation – YouTube Stats



Your video

Final Look at Commodity Title and C...

 Details

 Analytics

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Overview

Reach

Engagement

Audience

This video has gotten 457 views since it was published

Views

457 

About the same as usual

Watch time (hours)

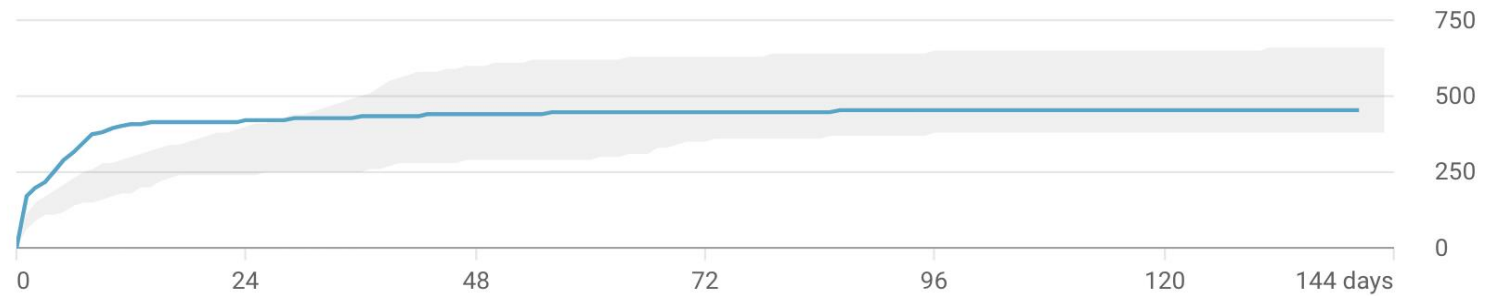
164.9 

24.9 more than usual

Subscribers 

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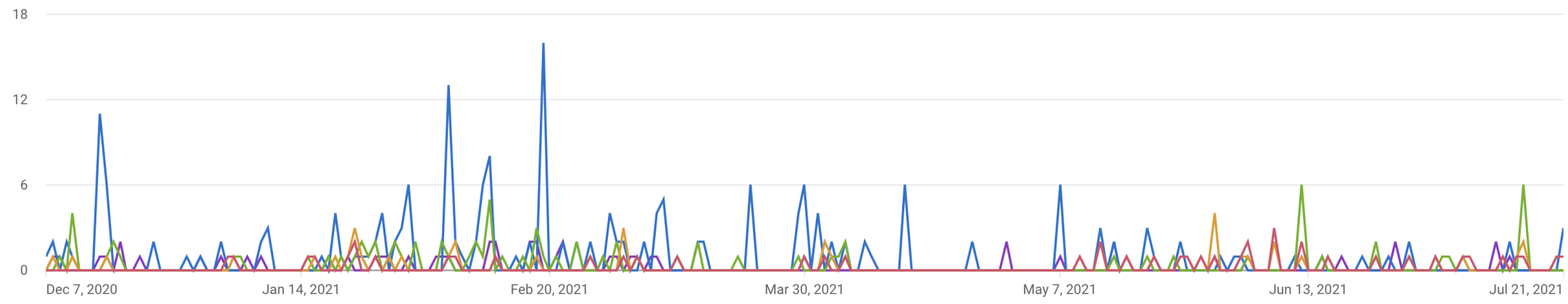
 This video  Typical performance



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Line chart ▾ Daily ▾



Sharing service +	Shares ↓	
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<input type="checkbox"/> WhatsApp	30 5.3%	
<input type="checkbox"/> Embed	15 2.7%	
<input type="checkbox"/> Gmail	12 2.1%	
<input type="checkbox"/> Facebook Messenger	10 1.8%	
<input type="checkbox"/> Facebook	9 1.6%	

Evaluation – Unique Pageviews for Extension Materials

Title	Date	Unique Pageviews
The New Enhanced Coverage Option (ECO) Crop Insurance Program	November 24, 2020	2823
Coverage Levels on RP: Relationship to Premium Levels	December 1, 2020	1260
Premiums for the Enhanced Coverage Option	December 8, 2020	1114
Historical Analysis of the Frequency of Triggering Enhanced Coverage Option (ECO) Payments	December 10, 2020	1344
Years in Which Enhance Coverage Option Pays	December 15, 2020	1205
Payment Examples Under Enhanced Coverage Option	December 22, 2020	1156
IFES 2020: Farm Program and Crop Insurance Decisions for 2021	January 6, 2021	598
Release of the 2021 Crop Insurance Decision Tool	January 19, 2021	1441
Potential Payouts from Enhanced Coverage Option	February 23, 2021	1497
RP, ECO, and SCO Tradeoffs	March 2, 2021	1346
Crop Insurance Decisions for 2021	March 9, 2021	1205
Crop Insurance Coverage Levels and ECO Use on Corn	May 4, 2021	923
Supplemental Area Insurance and Basis Risk Measures: Part I	May 5, 2021	451
Supplemental Area Insurance and Basis Risk Measures: Part II	May 6, 2021	228

Tools	Unique Pageviews
Crop Insurance Premium Calculator	967
Crop Insurance Payment Evaluator	604
Crop Insurance Decision Tool	Updating Version: 1714 Spring-2020 Version: 2958 Spring 2019 Version: 912
ECO/SCO Payment Estimator	427

Future Research and Program

- Incorporate with commodity programs
- Add likelihood of basis risk and risk reduction calculation tools on existing policy toolbox

Thank you! Questions?

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