

INDUSTRY CAN BE OUR PARTNER

By Russell A. Hunt

Extension Agronomist, University of Kentucky Cooperative Extension Service

Industry not only can be, it is our partner in Extension. Whether we recognize it or not, industry produces many products and offers many services valuable to the welfare of farm families. Extension would be poor indeed in subject matter, methods of procedure, and results obtained if it did not make the fullest use of its association with industry and capitalize upon the lessons learned in the school of business experience and practiced in the field of competitive enterprise. Industry is well-advanced in the production of many products; it is well-advanced in many subjects, in methods of teaching, in ways of conducting demonstrations, both method and result type, and in the final analysis of getting the message to the public in a direct and forceful manner. Since we in Extension cannot compete with industry, let's join them and profit from their successes and failures.

Extension and industry, while different in many respects, are alike in many ways. Both have a product to sell. Both must know the merits and weak points of their product, as well as the needs of the public for their product or services. Both need to be honest in their approach to the consumer: honest in the quality of the product offered; honest in presenting the merits and shortcomings of the product; honest in evaluating the product for consumer use to an increasingly complex economy; honest in accepting the responsibility of failure or success.

In dealing with industry, Extension must understand fully its responsibilities and limitations. Many Extension recommendations are valueless unless industry is able to provide materials and services both to activate the recommendations and put them into use. On the other hand, industry may have products or services or both that may fill well-defined needs when the merits of the product or services are known and under-

(An address delivered to - Southern Regional Conference for State Extension Specialists in Agronomy and Soil Conservation, Washington, D. C., September 17, 1959.)

stood by Extension. To illustrate the former statement, Extension agronomists recommended the use of lights for tobacco stripping rooms for years. Unfortunately, suitable lights were not available, yet in a few short years manufacturers of lighting fixtures, working through research and through trial and error, were able to produce a quality of light comparable to daylight, and in some respects superior to daylight, for use in the stripping room. Today most burley tobacco is prepared for market under fluorescent lights which are uniform in intensity and color shades throughout the day and which show the leaf to its best advantage. This is something that natural daylight cannot furnish.

Many examples indicate that industry provides useful products needed by farmers, but these products need to be introduced through Extension methods. For instance, methyl bromide had been used in trials for soil fumigation. It had long been used to fumigate wheat and other grains in bins. When tried for soil fumigation under conditions prevailing in the northern states, it proved quite successful in weed control. When tried in Kentucky in the same manner, it proved successful as a method of preparing plant-beds.

In later years a valuable addition has been made in introducing hot methyl bromide, a method far superior to the use of the normal methyl bromide in plant-bed preparation. Another product developed, but unknown and untried, was rhothane. This product was offered some years ago as an experimental material. A few county agents introduced rhothane in a small way, and in a comparatively short time it proved its value as a specific remedy for hornworm control. Today, rhothane is probably the most widely accepted and the most important poison used for hornworm control. It was the first genuine successor to paris green and arsenate of lead.

Another development was the introduction of the 1-2-3 ratio in fertilizer manufacture. Early fertilizers were low in all of the essential elements; in fact, 30 years ago, a 3-9-6 was the common fertilizer used throughout the Burley Belt. The speaker had an opportunity a number of years ago to answer questions from

fertilizing tobacco, with fertilizer men present. The suggestions made in this talk led to the formulation of the 1-2-3 ratio mentioned. As a result since its introduction 8 years ago, the production of 1-2-3 ratio fertilizer has mounted until now it is the most important fertilizer in use in Kentucky. During the first 6 months of 1959 over 108,000 tons were used. Numerous other products could be mentioned that have been made by manufacturers and have been introduced to the public through Extension, all of them of benefit to the farmer, to Extension, and naturally to industry.

What is the total field in working with industry? We will perhaps never know because there are many, many fields to think about, and there are many forms of industry with which we can work. Undoubtedly new products, new firms, and new services will be needed in the future. In tobacco there has been a fertile field of work with industry. Perhaps the most important of these is the tobacco cigarette manufacturers, who, of course, have a rapidly expanding industry. They have a vital interest not only in manufacturing tobacco but also in knowing that they are getting the right kind of leaf. Then, other companies, including the snuff industry, fertilizer manufacturers, makers of chemicals, including insecticides, weedicides, etc., and fuel manufacturers who make coke, fuel oil, butane gas, all of which are valuable sources of heat in curing tobacco, have worked closely with us. Then we have the tobacco leaf companies, those buyers of leaf who have orders for a particular kind or kinds of leaf. They may buy from a few pounds to several million pounds for domestic use or for export. The national cooperatives, makers of many farm supplies, including fertilizers, feeds, seeds, and equipment, merchandise these supplies through chain stores.

The farmer's store is one of the important places for disseminating materials, facts, and methods. National cooperatives, desirous of knowing what the recommended materials or practices are, attempt to make the materials and to distribute them to farmers as the need arises. They know the salesman make the last recommendation to the buyer.

Earlier we mentioned the manufacture of lighting fixtures. These companies have rendered a valuable service in making light available for stripping room use and in the plants that process tobacco. Some larger cigarette plants now are fully equipped with lights of the type and quality originally developed for stripping room use. Tobacco can be seen in the same true light and color in the stripping room, in the warehouse, in the processing plants, and in final form in the manufacturing plant. The same quality of light and color shade differentiation makes it possible to follow the tobacco through the various stages of preparation and study it better in detail as it moves from the farm to the finished product.

Perhaps one of the finest examples of cooperation between industry and Extension has been with a cigarette manufacturing company who produced a beautifully illustrated publication entitled "BURLEY TOBACCO". Extension cooperated by providing much of the written material and practically all of the pictures. Industry cooperated by editing this material, putting it in book form, and publishing it. Two hundred and fifty thousand copies of this booklet have been prepared and distributed to farmers throughout the Burley Belt. This book, which is printed in color, is unique in many respects, and it shows many of the important points that should be known about tobacco. Included are: the plant-bed disorders; nutritional disorders; root diseases; stalk diseases; leaf diseases; damage from farm practices, such as over-fertilizing with nitrogen; injuries from weather, including hail and insects. The section of the book, which deals with insects is one of the most complete. It shows them in full color and the injury that they cause. Abnormalities in cured tobacco are shown, and then last but not least, pictures showing representative grades of tobacco and what the farmer can expect if he attains the greatest potential from his crop.

It has been my privilege to distribute the booklet in Kentucky. Since we grow about 70% of all the burley tobacco grown, we have distributed about 70% of

the 250,000 booklets to farmers in Kentucky. Farmers have been very enthusiastic in their reception of this book. They use it in connection with Extension circulars and publications, and it rounds out their information about problems in connection with producing and selling burley tobacco.

The partnership of industry and Extension is found in the cooperative work of growing varieties for the burley evaluation tests. Companies need to know a great deal about leaf from new varieties before they buy them in large quantities. The Kentucky Cooperative Extension Service, the Kentucky Agricultural Experiment Station, and the cigarette manufacturing companies have cooperated for several years in growing a number of varieties for evaluation each year. Usually one or more old varieties are included, and three or four new lines, in order that they may be compared with the old varieties, to know what they will do when produced under different soil, climatic and farm management practices. This, in my judgment, is one of the most important of all contacts that we have had with industry. Burley variety tests now set up primarily to determine the usefulness of new varieties in cigarette making have had other important factors in their favor.

- I. They enable the plant breeder to determine the performance of his varieties under a wide range of soil and climatic conditions. They enable him to measure the performance of these tobaccos in relation to old standard varieties. Based on the research reports of the tobacco companies, much can be learned of the chemical and physical properties of the leaf, particularly the nicotine content and whether the variety does or does not have undesirable taste or aroma.
- II. From the Extension standpoint these tests are valuable result demonstrations. They enable farmers to study the tobaccos and compare their performance in respect to growth, disease resistance, leaf numbers, etc., color, and to some extent yield; also, to compare them with older

established varieties to learn whether they have a place in general production after being tried in the result demonstration.

Basically, however, the important thing is to determine the usefulness of tobacco in cigarette manufacture. As a result of these tests, new and useful varieties have been developed that are now in general production.

The fertilizer industry has afforded a splendid opportunity for working with manufacturers. For the past several years the Cooperative Extension Service, cooperating with the manufacturers, has held fertilizer conferences in Kentucky, in which the manufacturers, distributors, research agronomists, salesmen, county agents and other segments of the Extension Service, have met to discuss problems pertaining to the manufacture and the distribution of recommended fertilizer analyses for use in Kentucky. The fertilizer industry has responded well and each year between 400 and 500 representatives of industry have met with Extension people to hear the recommendations of the Extension Service agronomists in relation to the crop needs. Usually, slides have been shown illustrating well-fertilized crops and crops with nutritional deficiencies. Then discussions and recommendations are made pertaining to the grade and amount of fertilizer needed for the growth and production of various crops in Kentucky, including the small grains, pastures, corn, tobacco. Extension then works with industry in seeing that the recommended grades are made and distributed to be available to the farmers of the state. Prominent among the subjects discussed in these groups is soil testing and its place in the recommendations and use of fertilizer in the state. It is believed that every company serving Kentucky knows the general recommendations of the state in regard to fertilizer use and that practically all of them are attempting to serve the public by manufacturing and making available the grades of fertilizer that are recommended and needed for the state. As an example of what has been accomplished, a few years ago 6-8-6

was the most common fertilizer used for tobacco in Kentucky. It had replaced 3-9-6 of former years. Today, few companies offer 6-8-6. There is only one important company making 3-9-6 in the state. Most of the companies have moved entirely away from low-grade fertilizers and have gone into the manufacture of such high-grade materials for tobacco as 5-10-15, 6-12-18, or 6-6-18. These are the predominately important fertilizers in the state. These are the ones that are used by farmers who are attempting to produce high yields of useful tobacco.

Dark tobacco has been in difficulties for a great many years. The acreage has declined steadily since World War I, and the demand has dropped off sharply in the last few years. Competition from foreign countries, both in the quality of tobacco produced and in the price per pound, makes it increasingly difficult for the dark-fired growers of Tennessee and Kentucky to compete in domestic and world trade. Knowing some of these things and realizing the kind of tobacco reaching the market, the dark tobacco industry requested some 3 years ago help from the Land-Grant Colleges to improve the dark tobacco picture. A prominent snuff manufacturer asked that Extension people get together with industry to try to work out some of the problems. A meeting was arranged for interested groups of industry and Extension. Leaf dealers and exporters agreed that most of the leaf being produced was undesirable for either domestic or export trade. The leaf was long, thin-bodied, low quality, poorly cured and lacked much of the quality needed for industry. This was the first time in the history of the tobacco industry that a direct appeal had been made to Extension for help, and Extension took full advantage of this request to take part in remedying the bad situation that existed. As a result, the deans of the Colleges of Agriculture in Tennessee and Kentucky appointed Extension representatives to meet with industry and from this was formed the Dark Tobacco Quality Improvement Committee. A committee was set up with the idea of finding out first what was wrong with industry, and then making definite suggestions and recommendations, looking forward toward the improvement of the situation.

As a result of this committee and its work, we have gone deeply into the problems affecting industry. From the standpoint of the grower, buyer, and user, we

have found out some of the key points and have made definite recommendations looking forward to the improvement of the crop. Not only have we gone into the matter of finding out what was wrong and making recommendations, but the committee has used all forms of publicity available in presenting to itself, to the farmers, to the buyers, to the users of tobacco, the things that have been learned and recommended. While two years is not enough for evaluating the work of the committee, it is believed that what has been done so far has been a definite improvement in tobacco on the farm. Farmers' knowing and realizing the importance of their crop and its shortcomings have responded very graciously to the suggestions and recommendations, and the quality of the tobacco has improved. Much more improvement is needed than has been accomplished so far.

In conclusion, let me say that I am sure that each of you are fully acquainted with the industry of your area, and that you have worked with them fully in your career as Extension Agronomist. The things that I have tried to point out in this discussion are things that perhaps you know much better than I. Your experiences have taught you much in your particular field. It is hoped that this discussion may open up a new avenue of approach in cooperating with Extension in other fields than those in which you have previously worked. If we who are acquainted with farmers' problems along with Extension problems, can work with industry fully and find out from it the goods and services it has to offer, we have the possibilities of materially effecting improvement not only in the field of Agronomy, in which we are interested, but also in the general field of agriculture and in the social and economic development of the nation.

Again, let's remember that we need to be honest in our approach to the farmer and his family; honest in the quality of products and services offered; honest in giving sound information about the merits and shortcomings of our products and services; honest in evaluating our work and our services for consumer use, and finally, honest in accepting fully the responsibility of our program, and with this responsibility accepting our successes humbly, and accepting our failures readily.