Editorial

Cooperative Extension—Its Role in Education and Technology Transfer

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For 25 years I have heard researchers and extension specialists debate the question of why growers have not adopted some recommendations or new research results. The conversation too often degenerates to accusations that researchers are not working on problems important to growers or that extension specialists and agents are ineffective in transferring the new technology to growers. More pertinent questions would be: How do the new research results or recommendations fit with the grower's management plan and would adoption save and/or make him money? To delve more deeply into these questions is to wrestle with the issue of extension education and technology transfer. What is it and how is it accomplished? Transfer means to "convey"—technology in this case—from one person or group to another. In this context the definition does not necessarily include understanding. Education, on the other hand, includes training—development of knowledge and skills that should lead to understanding.

An underlying problem that interferes with effective communication and cooperation among scientists is a lack of understanding of the respective functions of research and cooperative extension. I want to address the functions of cooperative extension in the hope that I can contribute to a better understanding and thereby encourage more effective cooperation in transferring new technology through education.

A 1980 report to Congress (Evaluation of Economic and Social Consequences of Cooperative Extension Programs, USDA-SEA) summarizes the three primary functions of the agricultural and natural resources programs of cooperative extension as: 1) the collection, interpretation, and dissemination of information and knowledge through an information system that links farmers and other clientele with the research and knowledge base of the land-grant universities, USDA, and other government agencies; 2) the teaching of skills and principles and providing of assistance to help the clientele (individuals and groups) develop a capacity for solving their own problems; and 3) the providing of services to clients, including identification and diagnosis of problems, formulation or recommendation of alternative solutions to their problems, and the referring or giving of aid that enables them to identify and use (public and private) sources of assistance.

Collecting, interpreting, and disseminating information, teaching skills and principles, and providing services that collectively enable producers to choose the best course of action for themselves are the techniques of effective extension education. These techniques are based on the assumption that growers are intelligent, practical businessmen who assume the final responsibility for integrating new research results into their management systems. As scientists we must assume that growers will adopt a new recommendation when it is in their best interests, economic or otherwise. Agronomists, soil scientists, horticulturists, entomologists, plant pathologists—all of us within the research and extension organizations all too frequently make recommendations based on new research results without adequate interpretation and attention to how the results affect existing or new recommendations coming from other disciplines. Under such circumstances, little wonder some of the new technologies about which we are often excited are not readily adopted by producers.

Information can be transferred in numerous ways: newspapers, extension bulletins, experiment station circulars, farm magazines—the list goes on and on. Information can be placed in the marketplace quite directly and simply, but potential users often have difficulty evaluating the information for its adaptability to their individual situations. This is where cooperative extension plays its most important role: interpreting results to specific geographic areas and situations while, at the same time, teaching the skills and principles that will help a producer use the new technology. Effective education also points out the risks associated with adoption of the new findings. The final decision as to whether a particular recommendation will be of benefit must rest with the individual producer.

Agribusiness personnel are among the users served by cooperative extension. According to the 1980 report to Congress, approximately four times as many staff years are devoted to "private" extension work as are provided by cooperative extension educators. Cooperative extension uses the talents of this large number of private consultants and service personnel in helping to disseminate the interpreted research information. Cooperative extension recognizes that working with the private sector disseminates technical information more widely and rapidly than working exclusively with producers. This "wholesaling" or "multiplier" technique is also used effectively through mass media.

Services of identification and diagnoses of various problems usually provide the cooperative extension worker with an opportunity to furnish more in-depth education and help the producer to formulate and select among the alternative solutions. In my experience it is a rare producer who accepts a recommendation without questioning the reasons behind the recommendation or discussing how it might fit into his operation. Again, the final decision lies with the producer.

As much as we might like to think that all the information and recommendations we generate through our research and educational organizations will be readily adopted by the producer, such is not the case, nor should it be. We in research and cooperative extension must be willing to work harder at educating producers and others on how to use the information and new practices. To "put it out there for the taking" without adequate interpretation and education is to abdicate our responsibilities as educators and researchers. To maintain our usefulness to the nation's agricultural industry, we must work harder at interpreting and integrating research results and providing the educational opportunities so that people can benefit from them.