Journal Abstracts

American Entomologist
**Extension Entomology: A Personal Perspective; Past, Present and Future Challenges** Author: R. L. Bradenburg, Professor of Entomology, North Carolina State University, Raleigh, NC.

After 17 years as an extension entomologist, Bradenburg reflects on the direction and focus of the Cooperative Extension Service. Extension personnel today have to deal with issues associated with integrated pest control, low-input sustainable agriculture, chemophobia, reductions in funding, downsizing, justifying their existence and expanding educational programs to urban audiences. Regardless, Bradenburg believes that existing opportunities exist for Extension and the book is far from closed. The author makes observations on four topics:

1. Extension's handling of controversial topics;
2. Extension's value in an increasingly urbanized world;
3. Extension's ability to align technological transfer with the needs of end users;
4. Extension's initiative to provide education about certain key issues to improve its leadership role and support its claim that it is an invaluable resource.

Handling of Controversy

Recently, the public has expressed concern about pesticide use in urban and agricultural environments. We, in Extension, have invested much time dealing with this issue. Unfortunately, much of our effort has focused upon minimizing the risks associated with pesticides by comparing the low number of pesticide-related deaths caused by other, more common risks. Increasing the public's awareness of other dangers does not necessarily lessen their concerns about pesticides. Several authors have discussed our general lack of appreciation for and understanding of the need for appropriate communication skills to enlighten the public about risks associated with the pesticide issue. Because extension specialists usually focus on technological transfer, our expertise in dealing with emotional issues, such as pesticide use, is often limited. We must improve our risk-communication skills if we expect to establish our credibility with the public.

Value in an Urbanized World

Extension's value is not evident to the general public because it addresses the public's needs indirectly toward producers, and our role is not clearly understood by most urban audiences. In fact, our role is not always evident to the agricultural community. Many readers of farm magazines do not realize that university specialists write or are the source for many articles in farm magazines. Extension can help meet the needs of society through partnerships with other agencies and industries, requiring more linkages than ever before.

As a member of a team, Extension is challenged to maintain its visibility, particularly to appointed agricultural officials and legislators who have advocated severe cuts or elimination of Extension. Currently we are putting more effort into communicating our relevance to the American public and increasing our grassroots support through greater emphasis on urban issues. Extension attempts to document its benefit to society. However, the impact of our educational efforts and the information we provide often is difficult and costly to evaluate. It is important for those of us in Extension to realize that we are in a country in which only a portion of our population has any connection to farming. As the percentage of the general pub-
lic involved in agriculture decreases, the challenge becomes educating an unfamiliar urban public about the value of Extension.

**Meeting End User Needs**

My greatest challenge has been whether farmers will accept the content of educational programs for IPM. Perhaps, I and other specialists do not understand completely the factors that compete for a grower's time, energy, and resources. I believe that IPM tactics would be embraced more completely under a different scenario.

Extension entomologists often are the facilitators between those who develop the concepts of IPM and the pragmatic individuals who apply them.

We structure educational programs that fit the concept of IPM but do not meet the client's needs. Such programs might not fit the farming situation and might be incompatible with profitable cultural practices. We should deliver education about technologies to growers with a sound, logical, and open-minded approach.

**Key Issue Education**

Extension must take the initiative to educate our clients about key agricultural issues. Extension entomologists must incorporate IPM with sustainable agriculture. New technologies, such as transgenic plants, insect growth regulators, and reduced risk pesticides, add a sense of excitement to our educational opportunities. We should establish guidelines and suggest rules rather than wait for individuals less familiar with agriculture to do so. No other group has the infrastructure, expertise, unbiased perspective, and trust to conduct this mission.

Extension specialists should voice their opinions about prescriptive pesticide use and determine how much visibility we want as this issue is debated. Extension assumed a similar responsibility in many states when we accepted leadership for the pesticide certification training program.

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