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## SAFE FOOD AND WATER: PRODUCERS LOOK AT RISK

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Agricultural producers have a major stake in keeping our food and water supply safe. They consume the food they and other farmers produce. They drink the water that falls on their fields and filters through the soil into underlying aquifers. The confidence of the American public in its food supply is mirrored by increased or decreased demand for agricultural products. Further, that confidence, if eroded, can eventually lead to the development of legislation that directly affects farming practices. Recently that confidence was shaken by escalating publicity over the possibility of pesticide residues in our food supply.

Public opinion polls of consumers taken during this crisis of confidence indicated they wanted farmers to reduce their chemical use. However, although farmers may be willing to change their practices, not everyone is convinced that alternatives to pesticides are equivalent and therefore acceptable substitutes. In many cases they are either more expensive, less reliable, unavailable, or harder to implement than simply applying a proven pesticide. Alternatives include the use of biological control agents, management practices to enhance build-up of natural enemies, host plant resistance, organically acceptable chemical alternatives such as oils and soaps, and cultural alternatives such as crop rotation, plant density and sanitation.

Alternatives are often characterized as being information-intensive, management-intensive and sometimes labor-intensive. The number of farmers using alternatives is difficult to determine although we know that farmer concerns and attitudes about pesticides are growing and changing (Richardson). In a 1989 Gallup poll, 49 percent of the 1,000 farmers surveyed said their concern about using pesticides had increased over the past three years, almost two-thirds said they would switch to a different crop chemical for environmental considerations, 47 percent had already reduced their use of pesticides, and 64 percent were familiar with biological control agents (Richardson). Familiarity with biologicals was higher in the West, where 84 percent had heard of them. However, a recent review concluded that alternatives to pesticides had not been accepted widely by the agricultural community, particularly in the absence of cost-sharing or a clear economic advantage for the practice (Logan). The author felt that farmers must be motivated through education, technical assistance, cost-sharing where

necessary, and some regulatory sanctions to address environmental problems. The need for a suitable infrastructure that can support the use of alternatives is also critical but often overlooked (Sorensen 1990b). Lack of access to biological control agents, pesticide and nitrate testing kits, biopesticides, training manuals, field scouts, highly trained consultants and marketing advice may limit the number of farmers who can successfully use alternatives.

While debate over the viability of alternatives continues, federal and state legislation may severely limit the options farmers currently have for protecting their crops. Assessing the impacts of pesticide re-registration and state legislation on pesticide use in California, Zalom and Strand looked at whether alternatives existed for targeted pesticides. Over ninety pesticide active ingredients may be removed from California markets. Of the alternatives available, 60 percent are chemicals. For many crops and targeted fungicides, nonchemical alternatives are not available. In many cases, alternatives can only partially substitute for the targeted pesticide. Because of lack of information and the complexity involved, costs or other constraints posed by alternatives were omitted by the authors.

In view of these developments, I will look at how Farm Bureau is helping its members deal with increasing environmental pressures. First, I'll review consumer attitudes toward farmers and toward risk. These attitudes are important to keep in mind because of the increasingly strong role the public plays in shaping agricultural policy. Next, I'll talk about our programs. We have learned a lot in the last few years about designing educational programs for our members. Some of what we have learned has been borrowed from extension. Other elements may be unique to Farm Bureau. We have taken a three prong approach to environmental issues and the public's aversion to risk. I will illustrate each approach in turn: (1) raising awareness of members to environmental problems, (2) encouraging the development and use of alternative technologies and (3) influencing public opinion about farming practices.

### **Public Attitudes Toward Farmers and Food Safety**

Recently, Farm Bureau examined the public's attitudes toward farmers and food safety. Working with the public relations firm of Porter/Novelli, we looked at the consumers' image of farmers, their current awareness of food safety issues, and their perceptions about the involvement of farmers in these issues. A nationwide telephone survey was conducted by National Research, Inc., between January 4-10, 1990. A total of 1,200 interviews were completed. Among our findings:

#### **Farmers and Food Safety**

In their attitudes toward farmers, nine out of ten respondents (93%) believed farmers are "trustworthy" and 56 percent felt that farmers are "very trustworthy." The majority (88%) agreed or strongly agreed (45%) that "farmers are doing a good job of producing healthy food." Men (51%) and those over 50 years of age (52%) were more likely than

women (39%) or age groups between 18-49 (40%) to highly praise the efforts of farmers. However, the public was less convinced that farmers are conscientious about protecting food safety and the environment. While four out of five (79%) agreed that "America's farmers are very concerned about the safety of the food they produce," only one third (34%) agreed strongly. Consumers living in the West were less inclined than their counterparts to think farmers were very concerned about food safety.

### **Family Farms and Corporate Farms**

Two out of three respondents (63%) believed that most of our food is produced on large corporate farms. "Corporate farm" believers tended to reside in the West, have incomes over \$50,000, and be somewhat more distrustful of farmers. They were more concerned than other respondents about pesticides and hormones in farm products. In contrast, the third (32%) who believed family farms produce most of the food we eat were more likely to live in the Midwest, have incomes under \$20,000, and consider farmers to be "very trustworthy." The actual structure of agriculture differs from these perceptions (Sorensen 1990a). Only 0.3 percent of our farms are owned and operated by a unit other than a family. Eighty-seven percent are owned and operated by a single family and the remainder as a multi-family partnership.

The public also felt that the "family farmer" (upon which their positive image is based) is rapidly disappearing in favor of large, impersonal "corporate" farms. "Corporate" farmers were characterized as relatively uncaring business executives. Their "intelligence" and sophistication may be greater, but their trustworthiness related to food safety issues is quite suspect. Corporate farms were credited as being chief suppliers of food in large grocery stores and as heavy users of agrichemicals. Conversely, small farmers were described as caring, honest and less likely to use agrichemicals. They were seen chiefly as suppliers of food for local and pick-your-own markets.

Most believed corporate farms were more likely than family farms to "use sophisticated equipment" (90%), "adopt new and improved farming methods (66%), and "be more efficient and productive" (59%). However, though the public acknowledged the sophistication of corporate farms, it doubted their ability to produce safe and wholesome food. Compared to corporate farms, the public was more likely to trust family farms to "produce foods of higher quality" (72%), "use chemicals safely" (70%), and "respond to consumer concerns and desires" (62%). The perceived trustworthiness and caring of the "family" farmer appeared to be more important than the intelligence and sophistication of the corporate farmer when the issue was safe use of farm chemicals.

### **Food Safety Concerns**

Most of the concern over food safety centered around the use of agricultural chemicals. Consumers were more concerned about pesticides (89%) than other food issues such as spoilage (85%), fat and

cholesterol content (82%), additives and preservatives (80%) and hormones (77%). Overall, women were more concerned than men about food issues. Older consumers (60%) expressed more concern about pesticides than their middle (54%) or younger (48%) counterparts. Consumers with a high school education or less (59%) were more concerned than those who had more education (49%). However, consumer concern had minimal impact on consumption. Only one out of three consumers (36%) avoided foods because they thought those foods might be harmful to their health.

In general, the survey found that consumers were “chemophobic.” They were fearful, confused and concerned about the use and possible misuse of farm chemicals. Farm chemicals were primarily perceived as harmful tools used for financial gain. This perception is particularly disturbing in view of a recent study which documents how damaging the public’s chemophobia could be on the quality and quantity of our food supply if carried to extremes (Knutson, et al.).

### **Getting Farmers Involved**

Finally, our survey showed that the public feels strongly that farmers should tell their side in the food safety issue. Most felt that farmers should speak out more forcibly about their views on food safety issues (94%), provide consumers with information about all the chemicals they are using (93%) and educate consumers about their farming practices (89%).

### **Farm Bureau Strategies**

The survey reviewed above served to confirm what Farm Bureau was already doing. For many years, we have been responding to environmental concerns by raising member awareness and encouraging adoption of environmentally sound technologies. In doing so, we are guided by the policies developed by our members. Three policies, in particular, address our goals. Our policy on Alternative Farming Methods (#39) states: “*We support methods of farming that result in 1) a profit for the farm operator, 2) a clean environment, 3) the production of a safe food, feed and fiber supply, and 4) an adequate supply of high quality food, feed and fiber. We are keenly aware that the means to accomplish these ends may vary from farm operation to farm operation and that no single method of farming will work with every operator. We support: 1) Research aimed at reducing overall inputs needed to sustain a profitable farming operation; and 2) Efforts to provide information to farmers on proven means of improving the efficiency of inputs. We oppose: 1) Any attempt to mandate low input methods of farming and 2) Requiring low input methods as a condition of participation in government farm programs.*” Our policy on Integrated Pest Management (#97) states, in part, that “*We support the widespread promotion and use of integrated pest management (IPM) as a method of reducing costs, risks, liability and total dependence on farm chemicals,*” that we encourage additional research on biological control and IPM-compatible

pesticides, and that "Expanded educational programs are needed to encourage the widespread adoption of IPM." Finally, our policy on Research (#174) concludes with the statement that "*There is a need for increased research for Low Input Sustainable Agriculture (LISA), integrated pest management (IPM), water quality, reduced tillage and biotechnology, but this should be accomplished through increased funding and not by transferring funds from existing productive research programs.*"

The following Farm Bureau programs were designed to carry out our policies. The success of our programs depends largely on whether or not they are instigated from the top down or the bottom up. The latter programs are the most successful.

### **Raising the Level of Awareness of Environmental Issues**

*Soil Compaction Workshops:* The "Farm Partners: Have you Hugged your Soil Lately?" program was developed in 1984 by the American Farm Bureau Federation (AFBF) which had identified a need to educate farmers about the economic impact of soil compaction. It was a half day workshop. Both a leader's guide and a slide/tape show accompanied the workshop (AFBF 1984).

In retrospect, the workshop was much more successful with the extension service and university researchers than it was with state Farm Bureaus. The state Farm Bureaus apparently felt that education on soil compaction was not their role and that extension should be doing it. The Farm Bureau staff also indicated they did not feel comfortable being leaders for a technical program. However, the program did raise the awareness level of those involved and prodded extension leaders into studying the issue more carefully.

The mixed success of the soil compaction workshops points out the pitfalls of a "top down" program. However, because soil compaction was not readily identified by farmers as a problem back in 1984, the program could only have been initiated by the national leadership.

*LISA Tours:* In 1989, several state Farm Bureaus, along with some of their state agencies, sponsored tours of sustainable agricultural operations in their states (Porterfield). The idea for the tours came from AFBF. The tours were designed to familiarize key congressional staff, state legislators and regulators and leaders in the farming community with the full spectrum of agricultural practices in their state. For example, the Ohio Farm Bureau scheduled a two day overnight tour in August. It featured stops at a high input farm, farms using low input or Integrated Pest Management programs, and an organic farm. They also visited the Coshocton Hydrological Station to look at conservation tillage and hydrologic studies and the Ohio Agricultural Research and Development Center. Questions and direct observations were encouraged at all stops.

Based on comments afterwards, the tours successfully sparked interest in agricultural practices, promoted a better understanding of the

research necessary for successful programs, and encouraged dialogue between the participants. Again, the limited number of states that sponsored tours was probably due to the fact that the idea did not originate from the local level.

*Self-Help Checklist:* "Farm Bureau's Water Quality Self-Help Checklist" was first released in 1987. It is a 15-page booklet of questions about pollution problems that could occur around the farm (Porterfield). It walks farmers through potential problems and suggests possible solutions. The checklist was a classic "bottom-up" program. The idea for the checklist came out of a Farm Bureau farmer advisory committee. Over 750,000 copies of the checklist had been distributed to farmers throughout the country as of June, 1990. The checklist is designed to be used in group meetings with time set aside for everyone to fill in their answers to the questions. Because each state has slightly different laws, geology and farming practices, it was difficult to design one publication that would be useful nationwide. To circumvent this, each state received a set of camera-ready "slicks." They were instructed to modify them to reflect their particular state laws and farming practices.

The success of the checklist is related to several factors. First, it was "bottom up," that is, a service demanded by members for members. Second, the state Farm Bureaus were actively involved in its development, giving them a sense of "ownership." They field tested it repeatedly to come up with a format with which farmers would feel comfortable and find useful. Third, it is used in the context of a county meeting, with experts available to answer questions. Fourth, the checklists are given a "state spin," making them relevant to the recipients. And, finally, state Farm Bureaus have involved their state agencies where appropriate to help in distributing the checklist and any further educational efforts that might be needed.

*Cooperative Well Water Testing Program:* In August, 1989, the AFBF Board of Directors approved a national well water testing program in response to requests by members. The program allows individuals to have their water supplies tested and helps states develop a database to support local programs on ground water education and protection (AFBF 1990).

The Water Quality Laboratory at Heidelberg College in Tiffin, Ohio, offers the tests at a substantial discount to county Farm Bureaus. For \$12, the basic package includes testing for nitrates, nitrites, ammonia-nitrogen, chloride, sulfate, specific conductance, silica, and soluble phosphorous. Results are sent back to the individual and kept confidential. If desired, the lab can computerize a summary and a map of the county results for educational purposes. Optional screening tests for several pesticides are also offered.

Nearly one fifth of the state Farm Bureaus are now enrolled in the program.

## **Promoting the Use of Alternatives**

In addition to raising the awareness of members about environmental issues, Farm Bureau has developed several programs designed specifically to encourage the development and use of alternative technologies.

*Adopt-A-Scientist Program:* Involving farmers in the early stages of agricultural research gives both researchers and farmers a better idea of what is needed and what to expect. Farm Bureau started the Adopt-a-Scientist program in 1988 to improve communications and the flow of information between researchers and farmers. The exchange program places leading scientists on farms across the United States and provides the host families an opportunity to visit the scientist's lab. More importantly, the program opens a dialogue between scientist and farmer. The scientist visits his or her host family before planting, during the growing season and at harvest. Each visit lasts two to three days. Scientists choose which crops or livestock and which area of the country they want to visit and are then matched with a farm family. In the inaugural year, nine scientists from three companies teamed up with farm families in eight states. In 1989, the program involved eighteen scientists from nine companies. For 1990, there are twenty-seven scientists visiting fourteen states. At present, the program is limited to scientists from private industry. However, several universities have expressed an interest in participating as well.

*Self-Help Checklists:* Based on the success of the Water Quality Self-Help Checklist, the Farm Bureau is now developing three self-help education checklists on agricultural technologies, proper chemical use and integrated pest management. The checklists have been extensively reviewed and piloted in three states. We are currently exploring ways in which to finance and release the checklists to as wide an audience as possible.

*Farmer Idea Exchange Program:* The Farmer Idea Exchange is sponsored annually by Farm Bureau and is in its third year. It is designed to encourage Farm Bureau members to share their innovative ideas and help farmers find ways to cut costs and become more efficient. The program is open to all Farm Bureau members. Ideas can be entered in twelve categories: livestock, marketing, pollution prevention, integrated pest management, handicap helpers, computers, systems, crops, energy, equipment, safety and farm shop. Twenty farmers from around the country are selected to display posters of their ideas at the AFBF annual meeting in January. Entries are judged on safety of the idea when in use, environmental impact of the idea, ease of construction and use by other farmers, ease and cost of maintenance, and impact on a farmer's net income. The overall winner receives one year's free use of a Ford Model 9030 bidirectional tractor provided by Ford New Holland.

*Encouraging effective information transfer:* Although national farm organizations are not well equipped to transfer site-specific information on alternatives, we can assess the success of such programs.



Through national meetings and membership in groups such as the National Coalition on Integrated Pest Management, Farm Bureau is trying to encourage the development of programs that work. Successful programs are built around the following principles (Sorensen 1990b):

1. Alternative agricultural practices such as Integrated Pest Management (IPM), Low Input Sustainable Agriculture (LISA), or Best Management Practices (BMP's) require a higher degree of training and support than conventional practices (National Research Council).

2. The involvement of key credible leaders in the farming community is critical in generating support from farmers.

3. Programs should respond to adoption criteria used by producers. First, producers have to become aware that a new product exists. This leads to an interest in finding out more about it. They then try it out on a small scale to see if it will work on their farm. They evaluate the results and, if they like what they see, they adopt it for the next growing season. A typical early adopter of new technology owns a commercially successful operation, large-scale and more specialized than the normal farming operation; is a sophisticated financial manager, relying on credit; considers farming as a business rather than a way of life; is more educated than the average farmer; is often more capable as a farm and business manager; is highly motivated and willing to take risks; is well connected to communication networks; and is a community opinion leader (Hoban).

In many cases these early adopters are not the "family farmers" the public wants to protect. We can minimize adverse impacts on these "family farmers" by improving their management skills. Most farmers will need better management skills to more easily integrate technological advances in the future (Kalter).

4. The best way to reach farmers is through a variety of sources including the farm and commodity organizations, the extension service, the Soil Conservation Service, professional consultants and farm publications.

5. A reliable nationwide infrastructure to support alternative agricultural practices (such as consultants, beneficial insectaries, ready supplies of biopesticides and pheromones, training manuals, soil, water and plant tissue testing laboratories and marketing advice) must be developed to keep pace with potential demands.

### **Influencing Public Opinions on Farming Practices**

The final component of our three prong approach to environmental issues is the development of programs to increase the public's awareness of how farmers grow their crops.

*Agriculture-in-the-Classroom.* One of the most successful efforts is Ag-in-the-Classroom, a program developed by the U.S. Department of Agriculture (USDA) to teach children in our schools about agriculture. Farm Bureau has developed a parallel program called Agriculture-in-

the-Classroom that compliments the USDA effort by adding a state perspective to the material. Along with videos, brochures and coloring books designed by state Farm Bureaus, states have developed programs to educate school administrators, state policy decision makers, and others who provide input to the public about agriculture.

*Media Training.* Developing effective spokespeople for the agricultural community is also considered a priority. Farm Bureau currently offers media training to our volunteer leaders. These workshops include a session on presentation excellence which focuses on how to improve delivery techniques, gain audience attention and use visual aids effectively. Participants also attend a media workshop. Skills learned include an understanding of the print and electronic mass media, how to develop and deliver a message and how to anticipate questions.

*Food Safety Leadership Kit.* The food safety leadership kit represents months of research work, public opinion surveying and planning. The kit is designed to help farmers reach consumers. The materials were developed by Farm Bureau with help from an outside consulting agency. The leadership kit includes information developed specifically to address the areas of public concern identified in our food safety survey. Included in the kit are a slide and script presentation on modern farming methods, background information on opinions and strategies, discussion sheets on selected issues, and advice on how to hold community forums, how to work with the media and how to give an effective presentation.

*Identifying Forums.* Identifying appropriate forums for farmers to reach consumers is a bit more difficult. County and state fairs offer an opportunity for farmers to inform consumers in friendly surroundings. Local civic organizations which hold regular meetings are also a good way to exchange information. Some state Farm Bureaus support local Public Television Station programs on agriculture and the environment. Through Agriculture-in-the-Classroom, farmers can adopt a classroom. Writing letters to the editor of the local newspaper is another way of getting a message heard. Developing contacts with the local media and maintaining those contacts by providing reliable and credible information is encouraged.

## Conclusions

The above examples represent efforts to deal with environmental constraints that are increasingly changing the ways in which farmers can farm. What the agricultural community is trying hard to avoid are legislative constraints based solely on fears that our food and water supplies may not be safe rather than hard scientific evidence of risk. But, at the same time, farmers need to be aware of public concerns and try, as best they can, to address them. The Farm Bureau is taking steps in that direction and we urge and welcome similar attempts by the academic community.

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