AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

The Food Industry Responds to Consumers' Pesticide Fears

Eileen van Ravenswaay
(517) 353-8628

Recent opinion polls on food safety conducted by the Food Marketing Institute and the Good Housekeeping Institute indicate that three out of four Americans are concerned about pesticides in food. At the same time, consumer groups are becoming increasingly critical about the level and safety of pesticide residues in food and the environmental consequences of pesticide use. For example, the Natural Resources Defense Council has charged that Federal limits on pesticide residues do not adequately protect children.

The food industry has recently begun responding to consumers' pesticide fears in new ways. Some firms are advertising that their fresh produce has been specially tested for pesticide residues. Others are capitalizing on the dramatic rise in demand for organically grown produce. At all levels of the food industry, firms are allocating more resources to educate consumers about the ways—both old and new—that they are using to ensure a safe food supply.

Private Residue Testing

One industry response to consumer concerns has been to employ private firms to test fresh produce for pesticide residues. Initially drawing heavy criticism, private testing has spread from a handful of retailers to all segments of the food system.

Private testing at retail first came to public attention in May 1987, when Raley's, a 55-store supermarket chain based in Sacramento, California, announced that it had contracted with NutriClean of Oakland, California, to test its fresh produce for pesticide residues. By the end of 1988, nine retail chains with nearly 420 stores scattered across the country had joined the NutriClean program.

These retailers advertise two types of NutriClean programs to consumers: dockside testing and certified produce. Dockside testing is promoted as a supplement to the monitoring program conducted by the Food and Drug Administration (FDA), which randomly tests a small portion of fresh produce supplies throughout the year to determine annual average compliance rates with Federal pesticide residue standards. NutriClean-certified produce meets standards more stringent than those of the Federal Government in that no detectable pesticide residues can be present in the tested fruits and vegetables. *(See Changing Pesticide Regulations: A Promise for Safer Produce for more information on Federal monitoring programs.)*

NutriClean's dockside testing program involves representative sampling of nine widely consumed fresh fruits and vegetables—apples, oranges, lettuce, potatoes, carrots, sweet corn, tomatoes, peaches, and grapes—at the loading docks of a retailer's central distribution center. Samples are tested to see if they meet Federal residue standards for 14 pesticides that the Environmental Protection Agency (EPA) has identified as potential carcinogens and that were listed as such in a recent National Academy of Sciences report. Retailers pay NutriClean $3,000 to $5,000 a week for this service.

Certified produce comes directly from growers working with NutriClean. NutriClean staff records a grower's use of pesticides, collects samples of produce from the field prior to harvest, and then sends them to a laboratory for testing. Results are used to confirm that the grower's crop has no detectable levels of pesticide residues. Testing includes the multiresidue tests used by FDA, as well as custom testing for compounds used by the grower that are not covered by the multiresidue test. Most growers that NutriClean certifies are on the west coast and include producers of broccoli, cauliflower, yams, grapes, cantaloups, and potatoes.

The costs to farmers of using NutriClean's certification program depend on a number of factors. Since testing is done on a field-by-field basis, total costs depend on how many fields a grower farms. The cost per field varies depending on the type or variety of crop being grown and the type of pesticides applied. For example, if little custom testing is needed and the variety of produce and farming practices are the same in each field, costs for testing broccoli would range from $1,100 to $1,300 per field. Testing grapes would cost about $2,200 per vineyard if the same conditions held.

Retailers who subscribe to NutriClean's services are granted the exclusive right to sell tested produce in their market territory. Growers who join the certification program must work with NutriClean-associated retailers. In return, they are assured of sales and larger market outlets. Retailers also report that they pay higher prices for some certified produce. Presently there is no "NutriClean certified" trademark, and most growers do not label their produce as residue free. Retailers advertise the certified products through newspapers and in-store signs.

While NutriClean has the most widely known testing program, competitors have emerged in the last year. For example, Primus Labs of Santa Maria, California, works directly with growers to certify produce as residue free. A number of distributors and retailers have begun dockside testing using local labora-

The author is a professor with the Department of Agricultural Economics, Michigan State University.

tories. Advertising of these dockside programs has been typically low-key. More recently, grower-shippers on the west coast have announced pesticide residue testing programs. Some plan to label their products, others say they will advertise, while some maintain they will test but not advertise.

Organic Produce

Private residue testing has increased interest in organic produce. According to an article in *Supermarket News*, many chains across the country are examining the option of selling organic produce. One of the largest, Associated Grocers of Seattle, increased its 1988 sales of organic produce from about 1 percent of total sales to 5-10 percent in the 300 stores it services. Presently, 14 States have standards for defining what qualifies as organic produce.

Texas and Washington have implemented organic certification programs. In addition to these State programs, private organizations have become involved in certification efforts. With over 400 certified organic growers, the California Certified Organic Farmers organization may have the largest certification program in the country. Laboratory analyses are used to verify that organic commodities meet certain minimum standards before a grower is certified. More than a dozen other organic farming associations in the Southeast, Midwest, Rocky Mountains, New England, and the west coast also offer certification programs for growers.

Because so little data are available, the size of the organic market is difficult to estimate. Rough figures are available only for California. In that State, the annual farm value of organic produce is estimated to be approximately $50 million. While this is a small segment of the California market—in 1987, the farm value of all the State's produce equaled $15.5 billion—it is growing by perhaps as much as 40 to 50 percent a year. Industry analysts estimate that sales of organic foods in California could soar as high as $400 or $500 million by 1997. However, obstacles such as inconsistent quality and availability are likely to impede growth in this specialty market.

Public Education Programs

A third industry response has been to educate the public about the safety and benefits of pesticides and efforts within agriculture to reduce their use. While the industry has promoted some form of consumer education for many years, the attention has intensified. One of the largest educational campaigns is being conducted by the Center for Produce Quality, established by the United Fresh Fruit and Vegetable Association and the Produce Marketing Association using funds donated by industry members.

The Center has developed a public affairs campaign aimed primarily at retailers, who will be given free information kits on Government and industry food safety efforts. These materials can be used to answer consumers' questions and to provide point-of-purchase information. A hotline to answer retailer questions is also planned.

Some retailers have developed their own educational programs that include brochures and advertisements explaining how residue standards are established and monitored by Federal and State Governments. A leader in this area has been Lucky's of Dublin, California. The firm has 355 stores scattered throughout the State. Lucky's has worked with the California Department of Food and Agriculture to develop materials explaining the agency's pesticide monitoring programs to consumers.

Another education effort has been developed jointly by the Fresh Produce Council and the Alliance for Food and Fiber of Los Angeles. They publish a quarterly newsletter, entitled *Issues in Food Safety*, providing information on efforts to reduce pesticide use in agriculture, reviews of books on food safety, and editorials on controversial safety issues.

Along with these private efforts to educate the public about pesticide safeguards, FDA has taken steps to explain and expand its pesticide monitoring efforts. The agency has begun publishing an annual report on its pesticide monitoring program, explaining what it tests for, what crops it tests, and how frequently.

Combined with the recent interest in residue testing, the redoubled education efforts have focused attention on integrated pest management (IPM) in agricul-

ture. Begun two decades ago, IPM research has shown that pesticide use can be reduced significantly if growers closely monitor pest populations. Expanding use of IPM by growers will require additional educational efforts by Extension Service agents.

How Should Industry Respond?

While there seems to be agreement within the food industry that consumer confidence in Government regulation of pesticides has eroded, there is no consensus about how to deal with the problem. Many in the industry have different opinions about whether consumer fears are justified.

Those who believe the best approach is educating and reassuring the public argue that consumer concerns are based on misperceptions of the risks and benefits of pesticides. Consequently, they argue that private residue testing and organic produce are marketing gimmicks that prey on people's ignorance of the facts. On the other hand, those who favor these practices argue that the risks from pesticide use are uncertain and may be higher than current Government estimates. Thus, they argue that private testing and organic food will help consumers to reduce uncertainty and risk.

Expanded use of integrated pest management will require additional educational efforts.

There is evidence available supporting the view that some consumers may be misinformed about the risks and benefits of pesticides. A 1986 pilot study by the RAND Corporation, using a few small focus groups, found that respondents who tended to purchase conventionally grown food rated the added annual risks of dying from consuming food produced with pesticides as one in a million or less. In contrast, most of the respondents who regularly purchased organic food rated the added annual risks of dying from pesticide-treated food as high as, or even higher than, the risks of dying in motor vehicle accidents. Almost half of the organic food respondents rated the risks greater than that of dying of lung cancer from smoking a pack of cigarettes a day. The report on pesticide residues by the National Academy of Sciences, however, points out that only the most conservative scenarios—such as assuming all crops are treated at the maximum allowed rate with all pesticides registered for use on each crop—would yield risks this high. According to the report, the odds of these events happening are very low.

A 1983 Kansas State University survey found that some consumers in that State were also confused about the benefits of pesticides. Over half of the 230 respondents believed that pesticide use increases food prices. Only one-third felt that pesticide use enhances food quality, while over 40 percent said that such compounds decrease food safety.

Whether or not consumers misjudge the risks and benefits of pesticide use, more research and better communication of the results are needed to ease the controversy. A clearer definition of the risks involved will require more and better data about pesticide residues in food. Successfully communicating this information to the public will require a more thorough understanding of how consumers perceive the risks and benefits, and how these perceptions change given new

information. It will also require skill and knowledge on the part of individuals in the food industry.

The need to communicate risk information in ways that the public understands and trusts will continue to be critical in the years ahead as EPA reviews newly available data on the health effects of widely used pesticides. While this new information will help reduce pesticide risks even more, it may also reinforce consumer doubts about the validity of scientific conclusions regarding pesticide safety.

Meanwhile, expanded use of private residue testing and increasing demand for organically grown produce raise the issue of the need for Government standards. Various laboratories may use widely different testing procedures, leading to potential controversies when private and Government tests yield different results. Consequently, some public guidelines on testing methods may be needed. Likewise, some produce advertised as organic has been found to be suspect. Again, Government standards may be necessary to maintain a market consumers can trust. ■

References

Cohn, Cathy. "Organics: A Chemical Reaction." *Supermarket News*, October 24, 1988, pp. 34-35.

Cook, Roberta L. "Marketing Organic Commodities in California: Structure and Obstacles to Expansion." Unpublished paper presented at the Western Agricultural Economics Meetings, Davis, California, July 2, 1988.

Franco, Jacques. "An Analysis of the California Market for Organically Grown Produce." Unpublished paper presented at the Western Agricultural Economics Meetings, Davis, California, July 2, 1988.

Freedman, Alix M. "Furor Over Rating of Store Produce." *The Wall Street Journal*, June 23, 1988, Section 2, p. 35.

Hammitt, James K. *Estimating Consumer Willingness to Pay to Reduce Food-Borne Risk*. The RAND Corporation, Santa Monica, California, October 1986.

National Academy of Sciences. *Regulating Pesticides in Food: The Delaney Paradox*. National Academy Press, Washington, DC, 1987.

Penner, Karen P., Carol S. Kramer, and Gary Lee Frantz. *Consumer Food Safety Perceptions*. Cooperative Extension Service, Kansas State University, Manhattan, Kansas, August 1985.

Residues in Foods—1987. Division of Contaminants Chemistry, Food and Drug Administration, Department of Health and Human Services, Washington, DC, 1988.

Stanley, Edith M. (editor). *1988 Organic Wholesalers Directory and Yearbook*. California Action Network, Davis, California, 1988.

van Ravenswaay, Eileen. "How Much Food Safety Do Consumers Want? An Analysis of Current Studies and Strategies for Future Research." *Consumer Demands in the Marketplace: Public Policy in Relation to Food Safety, Quality and Human Health* (Katherine L. Clancy, editor). Resources for the Future, Washington, DC, 1988, pp. 89-113.

Waterfield, Larry. "Safety Strategy, Direction Unveiled." *The Packer*, February 18, 1989, p. 1.

Zind, Tom. "Crisis of Confidence." *The Packer Focus: Fresh Trends* 1989, 1988, pp. 70-83.

Zind, Tom. "Private Testing: What's Ahead in '89?" *The Packer*, January 7, 1989, p. 1.