UK UNIVERSITY OF KENTUCKY
College of Agriculture
Department of Agricultural Economics

Agricultural Sustainability and Consumerism

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David L. Debertin

University of Kentucky
Department of Agricultural Economics
400 Charles E. Barnhart Bldg.
Lexington, KY 40546-0276

Phone: 859-257-5762
Fax: 859-323-1913
http://www.uky.edu/Ag/AgEcon/

David L. Debertin may be contacted by e-mail at ddeberti@uky.edu.

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Consumers are becoming increasingly aware of and concerned about the production technologies that are being employed by commercial farmers in producing agricultural commodities. Many commercial farmers, agricultural scientists and educators are interested in the possible consequences of this increased consumer awareness and concern for the production and marketing systems within agriculture. There are even those who have argued that a move away from the use of commercial chemical fertilizers and pesticides by farmers will result in drastic increases in food prices for consumers and even lead to potential shortages. Knutson et al. (*Choices*, Fourth Quarter, 1990) made some estimates of the potential implications of eliminating the use of chemical fertilizers and pesticides on the production of basic agricultural commodities.

An unfortunate consequence of the current discussion is that divides the agricultural community into two warring camps--those who are a part of and support the continuation of conventional production practices employing considerable amounts of commercially produced chemicals; and those that are a part of a camp supporting the reducing and perhaps even eliminating the use of certain chemicals in the food production system.

Those who are a part of the first camp include many commercial farmers who are currently employing chemical-intensive production systems, the group of agricultural scientists who hold the view that chemicals currently being used, if applied at recommended levels, do no harm to consumers of food products, and the commercial suppliers of agricultural chemicals. They are joined by agricultural economists who believe that changes in current conventional methods of producing agricultural commodities employing commercial chemicals will result in dramatic yield reductions for major crops such as corn and wheat, with additional consequences for the costs of producing livestock products such as meat and milk. The result could mean substantial increases in the price of food for consumers.

Those in the camp supporting reducing or eliminating the use of commercial chemicals in agricultural production include a group of farmers who believe that there are viable, potentially profitable alternatives to production systems that use large amounts of chemicals, and consumers who are concerned about the potential safety of food products produced under conventional production systems. They are joined by agricultural scientists who are interested in conducting research on the viability and profitability of alternative production systems that reduce or eliminate the use of commercially- produced chemicals. They also include agricultural economists who are interested in determining if reductions in yields and output can be offset by reductions in production costs or product price increases.

Thus, not only are farmers divided with respect to the consequences of alternative production systems, the entire agricultural community is badly divided on the appropriate response to increased consumer concern about agricultural production technologies. Commercial farmers who look to colleges of agriculture for educational efforts aimed at educating consumers with regard to the safety of current chemicals and pesticides may be surprised to discover that colleges of agriculture

are now less than enthusiastic with regard to mounting an all-out educational effort focusing on this theme. Farmers expecting that agricultural economists will help them rationalize the continuation of conventional, chemical-intensive production practices may be surprised to discover less-than-enthusiastic support. Focus in most farm management educational efforts appears to have shifted from emphasis on maximizing yields and outputs to controlling costs. Ignoring for a moment arguments related to product quality, reducing the quantities of commercial chemicals used in agricultural production systems could result in significant reductions in production costs and perhaps even improved profitability.

Many farmers are wary of the current consumer concern over the use of agricultural chemicals and their potential impacts on food safety. They believe that so long as farmers are able to produce a food supply regarded by agricultural scientists and the federal government as "cheap" and "safe," that consumers have no business being concerned about the particular technologies that are employed. This is because much of commercial farming has been traditionally been geared toward the production of graded, generic, products, without regard for the marketing of specific product characteristics. Beyond the government grade, farmers were not paid price differentials for commodities that possessed particular characteristics, so there was no incentive to produce commodities possessing these characteristics. The most profits were obtained if the farmer could produce a specific grade using whatever technology appeared to produce that grade at the lowest per-unit cost. The agricultural community widely believed that consumers would be happy if these commodities were available at the lowest possible price, without any concern for characteristics other than those defined by the government grade.

All of this is changing rapidly, with the consumer a now much more important player. Many consumers now desire agricultural commodities that possess many characteristics that go beyond simply being cheap and conforming to generic government grades. Consumer-driven changes occurred first in meat. Consumers first demanded red meats with lower fat content. This information was fed back to beef and pork producers (and animal scientists) who eventually responded with changes in genetics and production systems to market a leaner product. Even branded products appeared (i.e. Laura's lean beef). Slowly but eventually, characteristics that define USDA grades changed. More recently, those retailers seeking to market milk produced without bST are seeking a competitive edge on those who choose not to do so. Branded fryers now dominate most poultry markets, with each brand promoting slightly different product characteristics. In a competitive food marketing system, unique product characteristics represent the marketing tool. Food marketing is evolving into a system in which few, if any, products are sold based on generic grades.

Consider a small miller who wishes to market a bread flour in competition with a major miller. One way to build a customer base is to promote the product as possessing some characteristic that is unavailable in flour produced by the major millers. The miller might locate a source of wheat produced by a farmer who uses no chemical fertilizers and pesticides. The flour might then be marketed as such. Would consumers purchase this flour rather than that produced by the national brand if the price were the same? Perhaps. However, if this small miller had chosen to compete with the national brand without emphasizing a unique product characteristic, the only choice in establishing a market foothold would have been to charge a lower price.

But would significant numbers of consumers actually purchase this "organically grown" flour in preference to a national brand that is not labeled as organically grown? I suspect that if the other characteristics of the flour were similar to the national brand, a share of consumers would choose the flour with the organically grown label over the comparatively priced national brand. This gives our small miller a

position in the market that would have otherwise been difficult to obtain. Demand may increase. As the miller expands output, it will be necessary to locate additional supplies of wheat that come from farmers who use no chemicals. The miller may find it necessary to offer a higher price to farmers who produce this organically-grown wheat. The miller might let farmers bid on a contract to supply the wheat. Would wheat farmers be willing to become suppliers? Some might. Can wheat be readily produced without using pesticides and commercial fertilizers? Easily, at least in the Northern Plains, although yields might be slightly lower in some years.

Eventually, the miller might need to increase the price of the flour to above the level of the national brand. Would consumers be willing to pay extra? Some might. How much extra? Do these consumers represent a sizable market? These questions cannot be adequately answered right now. How would competitors, including the major millers, react? That depends on their perception of the size of their market that is being lost to the small miller. Might there eventually be a flour marketed as made from organically grown wheat under the Gold Medal or White Lily label? Possibly. Could the demand for organically-grown wheat ever represent a significant share of the total wheat market? Who knows if the major millers enter the market!

What about bakery products? Would some people prefer to purchase bread produced from flour made with wheat that was produced without chemical fertilizers and pesticides? Certainly. How large is the market? No one knows for sure. Might there be a point in which there is no longer a demand for wheat grown using commercial chemicals? Not likely, but it could happen.

Some may argue that the scenario I have outlined is unrealistic, and that consumers will eventually come to their senses and go back to simply finding the low-cost flour and bakery products. But a few years ago the beef producers and the agricultural economists would have argued that it not possible to market branded hamburger meat based on a low-fat product characteristic, either.

The point of this discussion is that the major opportunities for increasing incomes of farmers are rapidly moving away from the traditional concept of producing more of a generic, government-graded commodity, and towards the production of products that possess particular characteristics that can be identified and marketed to consumers. In other words, for some farmers, the most profitable production system considering both product prices and production costs may no longer be the high-yield, chemical-intensive production system that has traditionally been used.

Marketing in agriculture has traditionally centered on discussions about when to sell the corn or steers to obtain the highest possible price. All of a sudden, the question becomes how do I find a buyer who wishes to pay a premium price for a commodity produced with a particular set of characteristics or employing a particular production technology. This is a very different world. Some farmers will not choose to participate. For others, this new world of catering product characteristics to consumer tastes represents not a problem, but rather a unique opportunity for making money.

I visited a small salad green producer south of Atlanta who produced an organically-grown product. Acreage was very limited, and production was labor-intensive. Despite this, the production of the salad greens was not particularly difficult. The difficult part of the business was in not on the production side, but in the marketing. This small producer supplied salad greens to five upscale Atlanta restaurants, which had the greens delivered to their doors twice a week. Restaurants could advertize the salad greens as being organically grown and were assured a high-quality, consistent local supply. The producer was rewarded with a $5.00 per pound price, and sold several hundred pounds per week. A niche market? certainly! Would most farmers be interested? Not likely. Profitable for this grower? Indeed. The difficult

part of this business was locating the restaurants who wished to purchase the greens.

The controversy surrounding agricultural chemicals and more general issues relating to food safety puts the agricultural scientific community in a dilemma. Should agricultural researchers engage in strident efforts to assure consumers of the safety of current production technologies, whether they employ chemical fertilizers and pesticides, antibiotics or bST? No agricultural scientist is in a position to assure consumers that these technologies are absolutely safe for the consumer. They are only relatively safe. Consumers have every right to be concerned about the safety of the food they eat. They have every right to know the details with regard to the production technologies that are being employed to produce this food. Farmers, whether they label themselves as conventional, sustainable or organic, are increasingly going to need to concern themselves with the problem of employing production technologies that cater to consumer wants and desires. The consumer is sovereign. No longer is the system run only by the producer who can produce a generic commodity at the lowest possible per-unit cost.

The agricultural research community has an equal responsibility to cater to consumer wants and desires. Tax dollars supporting agricultural research and extension come from all taxpayers, not just commercial farmers. Much of the scientific research that would assist farmers in catering to consumer needs and wants still needs to be conducted. But this too, represents an opportunity, not a problem within the agricultural research community.
