

Food Safety Policy

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Background

Food safety encompasses many kinds of potential hazards in food. Examples include foodborne pathogens such as *salmonella*, naturally occurring mycotoxins, such as aflatoxin, or pesticide residues. These hazards can pose acute risks (consumers become ill immediately) or chronic risks (consumers' risk of chronic illness is enhanced). Some hazards are easily controlled or detected while others occur naturally and may be difficult for producers to see or eliminate.

Most food safety hazards pose only small risks due to the quality of U.S. food production and the strong standards in place. However, food safety issues are receiving more attention now for several reasons. First, science is now better able to trace many foodborne illnesses and their outcomes to specific pathogens found in food. Second, as consumers live longer and become more affluent, they demand higher levels of quality and safety in their food. Third, changes in production practices and new sources of food, such as imports, introduce new kinds of risks into the food system. Finally, as more foods are purchased away from home or purchased

in prepared form, consumers exercise less control over food safety.

Public policy sets standards for food safety. Such standards reflect policy decisions about acceptable risks and costs of risk avoidance. For many food safety hazards, consumers cannot detect the hazard at the time of purchase, and producers may also be unable to measure or guarantee a particular level of safety. Therefore, consumers cannot always make their demand for safer food known through purchase decisions, and producers cannot always supply what consumers demand. Public policies attempt to address this market failure by setting standards that ensure some level of acceptable safety for all consumers.

Food safety previously has not been addressed directly in the Farm Bill, but it is a public policy issue that affects farm and food industry profitability, product reputation, and competitiveness in international trade. Food safety is directly related to several areas of USDA authority, such as meat inspection. Issues related to food safety may arise in the Farm Bill or in other legislation that will affect the farm and food industry.

Current Situation and Forces of Change

Due to federal and state government investments in surveillance during the past decade, reporting of foodborne outbreaks is more thorough than in the past. Furthermore, it is now possible for scientists to trace specific foodborne pathogens to their food production origin through genetic fingerprinting. Some foodborne pathogens have only recently been identified, and have evolved to pose new threats. An example is *Salmonella enteritidis*, which appeared in the 1980s. In contrast to older strains of *Salmonella*, this new strain can penetrate the eggshell when a layer hen is infected and, thus, it poses a new potential threat to consumers of raw or undercooked eggs. Another example of a relatively new threat is BSE or “mad cow disease,” which has been linked to a form of brain disease in humans. Yet, another example is the identification of antibiotic resistance in foodborne pathogens in animals, which may then result in resistant infections in humans. There is controversy over whether such resistance is the result of sub-therapeutic use of antibiotics in feeds. All of these trends in scientific and public awareness increase the attention to food safety and the potential for this issue to impact the farm sector.

Regulatory Environment

There are 12 different government agencies with authority over different aspects of food safety in the United States. Food safety is primarily the responsibility of the Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA), and the Environmental Protection Agency (EPA). Legislation has been introduced to unify responsibility into a single agency, in order to use public resources more efficiently to address the most important risks.

With increased scientific and public awareness, there have been changes in the way that public agencies approach certain food hazards. The National Academy of Sciences has advocated a risk

assessment approach to the design of food safety regulation. This means looking at how hazards enter food during production, and where it is easiest to control them. A related idea is that the benefits of a regulation should exceed its costs. The risk assessment framework should help to identify whether and how regulation can provide the greatest benefits (higher safety) for the lowest costs. The USDA and the FDA have used this approach in the design of their most recent regulations. Legislation passed in 1994 reorganized USDA agencies and created a new Office of Risk Assessment and Cost Benefit Analysis (ORACBA). ORACBA is charged with reviewing all food safety and environmental regulations from the USDA to ensure that they are based on sound assessment of risks and analysis of costs and benefits.

A related trend in food safety regulation is the mandated use of the Hazard Analysis Critical Control Point (HACCP) systems of safety management. In 1996, the USDA mandated the use of HACCP in meat and poultry plants, in order to reduce microbial pathogens in meat and poultry. In 1995, the FDA mandated HACCP for seafood plants, and the FDA has proposed HACCP regulations for fruit juice to be effective in 2001. The mandated use of HACCP reflects a growing recognition that it is important to prevent and control hazards before they reach the consumer. HACCP requires identification of critical control points and the development of procedures for monitoring controls and addressing any failures in control.

In conjunction with the 1996 Pathogen Reduction regulation, the USDA required pathogen testing in meat and poultry. Meat and poultry plants are required to test for *salmonella* and for *E. coli* bacteria, and plants with higher than industry average levels must reduce the incidence of these bacteria over time. In conjunction with these new tests, the USDA has implemented recall actions more frequently during the past five years, whenever bacterial contamination has been found.

Another important development in food safety policy was the passage of the Food Quality Protection Act in 1996. This legislation set a consistent standard for risks from pesticide residues in food. The standard requires reasonable certainty that no harm

will result to infants and children from aggregate exposure to all residues. The FQPA requires reassessment of pesticide tolerances for all currently registered pesticides, and the EPA has given priority to organophosphates because of their importance in children's dietary exposure. Organophosphates affect an enzyme that controls the nervous system. These chemicals have been used for many years by farmers for many different crops, and are applied to nearly half the acreage of crops identified as important in children's diets.

All of these changes in food safety regulation influence farm production. If pesticide tolerances are revoked as a result of the FQPA, then farmers would be forced to find other pest control alternatives that would likely reduce yields or increase costs. New regulations requiring control of pathogens may also lead processors to place greater emphasis on hazard control in contracts with farm producers. Tracing food safety problems to their source helps both industry and regulators to find the best control methods, but it can place additional responsibilities on farm producers. Increased attention to management of food safety and quality at all points in the supply chain is often seen as one cause of increased vertical integration (i.e. processor control) in certain kinds of food production.

International Environment

Another important trend is the growth in imports, particularly of minimally processed fruits and vegetables. Between 1980 and 1997, the share of imports in fresh fruit supply increased from 24 to 34 percent; and from 5 to 10 percent for fresh vegetables. These imports have been associated with foodborne illness outbreaks of pathogens not usually found in the U.S., such as the *cyclospora* outbreak associated with imported raspberries in 1996 and 1997. The FDA developed guidelines for Good Agricultural Practices (GAP) in horticulture in order to address microbial risks from fresh produce. These GAPs are now sometimes used by importers to certify production practices in other countries.

In addressing risks from imports, the U.S. must adhere to the principles in the Sanitary and Phytosanitary (SPS) Agreement of 1995 under the

World Trade Organization. This agreement provides a framework for setting standards to protect human, animal, and plant health. The principles in this agreement are designed to allow countries to set their own standards, but WTO member countries must ensure that standards are science-based and that they are applied equally to domestic and imported foods. This is to allow fair competition between domestic producers and exporting countries.

Issues

Responsibilities for Risks and the Role of Markets

One approach to food safety is that responsibility is shared by all of those involved in food production and consumption. Yet, even acceptance of shared responsibility does not preclude controversy over who will bear specific risks or the costs of risk avoidance. Changes in regulation and in food production, processing, and consumption may alter who bears food safety risks and costs.

What should be the roles of producers, processors, distributors, consumers, and government agencies in assuring food safety? What kinds of information do consumers need to make informed choices about the safety of foods that they buy? To what degree can we rely on the food industry to respond to consumer concerns about food safety? What kinds of new information or research does the food industry need to respond to increased food safety regulation, increased consumer concern, and growing competition from international trade?

Risk Standards and Policy Goals

The use of cost/benefit analysis and risk assessment to set standards is still an imperfect science, at best. Scientific certainty about risks and costs will never be possible. Furthermore, consumers do not view kinds of risks in the same way. Risks that are manmade, unfamiliar, undetectable, and

involuntary are viewed with greater fear than risks that are natural, familiar, detectable, and voluntary.

What levels of safety are desired, and what risk standards should be applied to foods? Should standards be based primarily on expert risk assessments, consumer risk perceptions, or a combination of the two? Should risk standards be consistent across foodborne risk sources (e.g. risks from pesticide residues and foodborne pathogens)? How should risks to consumers be compared with costs to industry of reducing risks? Should standards be flexible to adapt to new technologies and new scientific information?

Distribution of Risks and Costs

Some risks have greater consequences for important groups of consumers, but not for everyone. Pesticide residues may pose greater risks to children than to adults. Some foodborne pathogens lead to more serious infections in the old and the young. It is also the case that some farms or firms will have greater costs of compliance with food safety standards. For example, small meat processing firms have higher costs of adopting HACCP and, for this reason were given a later deadline to comply with the HACCP regulation.

Should standards be set to protect the most vulnerable consumers, or should they be set to protect the “average” consumer? Should standards be enforced for all firms equally, or should special consideration be given to small businesses and farms?

Organization of Federal Regulatory Activity

How should the federal regulatory system be organized to achieve desired risk management goals for industry and consumers? If agencies remain separate, then is greater coordination of regulation desirable? What types of regulatory or other federal programs will provide assurance to consumers with the least burden to industry? Should regulatory oversight continue to be divided between federal and state agencies for different points in food production and processing?

International Trade Relationships

Should standards be altered to account for new potential risks from international trade? Should there be flexibility in some standards to help industry respond to differing demands for safety in the European Union and Japan? Should the U.S. agree to changes in the SPS agreement to allow for greater recognition of consumer perceptions and concerns in setting standards?

Policy Alternatives and Consequences

In the past, the farm bill has not been a legislative vehicle for the federal government’s food safety assurance programs. However, the many recent developments in food safety regulation may mean that food safety will play a larger role than in the past. Food safety, along with other consumer issues, and environmental concerns may play a larger role in shaping farm policy. Policy alternatives include the following:

Maintain the Status Quo by Leaving Food Safety Assurance Largely Outside the Farm Bill Framework

This approach would maintain the separation between farm income programs and food safety assurance programs. Such a separation could make both types of issues more manageable. Complex issues surrounding risk management and regulatory authority for food safety can then be debated separately for other pieces of legislation. However, it may not contribute to achieving greater consistency among farm income, food safety, consumer, and environmental goals.

Incorporate Food Safety Into Farm Programs

This approach would treat food safety at the farm level as analogous to conservation efforts. Farmers currently receive payments to cover the costs of certain conservation activities. Similar payments could be designed for the costs of improving food safety, such as documented procedures to reduce microbial pathogens. The advantage of this approach is to make farm income policy consistent with consumer protection goals. The disadvantage is that it would only address production at the farm level, which is only one point in the food chain and is not necessarily the source of many food safety hazards. Furthermore, production practices that improve safety are not well-defined for many hazards and compliance would be difficult to monitor.

Increase or redirect research and education funding for food safety

The farm bill has traditionally authorized significant funding of scientific research relevant to food and agriculture. The USDA has increased funds earmarked for food safety research and for public education programs since 1997. Research programs seek new ways to detect and control foodborne hazards. Examples of new technologies include new rapid detection methods for microbial pathogens or improved processing techniques such as steam pasteurization of beef carcasses. Public education programs seek to educate producers and consumers about how to reduce or avoid food safety hazards. Use of federal dollars for research and education is one way to address food safety without imposing direct costs on industry. Research discoveries and better public awareness may improve food safety without direct government intervention. A potential disadvantage of this approach is that research and education may be ineffective, or not directed towards the public's or the industry's priorities.

Place More Reliance on Consumers and Industry for Food Safety Assurance

This approach would place more responsibility for food safety on consumers and industry, and would mean reduced government involvement in setting standards. This might be achieved through following a stricter rule for comparing benefits and costs of intervention. In other words, new regulation would be justified only by a very large gap between benefits and costs. Even with reduced regulation, a government role in providing information might still be retained, which would assist market forces to assure food safety. The government could mandate that the food industry provide certain kinds of food safety information to consumers, in order to help them make the most informed choices about food purchases and preparation. Two examples are the required labels on unpasteurized fruit juices and the safe handling labels on meat and poultry products.

Consolidate Federal Authority in a New Agency

This approach would unify responsibility for food safety under one agency. The advantage would be that this would allow the government to focus resources on the most important risks, to avoid duplication of effort, and to provide more consistent regulation across different kinds of hazards. This might help industry by reducing confusion arising from different requirements or standards among agencies. It might also improve the ability of the U.S. to address international trade issues in a consistent manner. The disadvantage could be the disruption involved in transferring resources and responsibilities from existing agencies. There would also be a loss of the specific expertise that currently exists in different agencies, for example with respect to meat and poultry in USDA. Another concern is whether the variety and complexity of tasks to be accomplished would overwhelm a single agency's ability to perform them.

References and Suggested Readings

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