Food Safety

Recent outbreaks of food-borne Salmonella and *E. coli* have reinforced concerns about food safety in the United States. Food-borne diseases are estimated to cause as many as 81 million cases of sickness and up to 9,000 deaths in the U.S. annually (Mead et al. 1999). Food safety incidents and the resultant recalls can be costly for food producers. In order to address food safety issues, producers can voluntarily implement food safety programs. However, state and federal oversight remains a vital tool in ensuring food safety. In the wake of recent food scares, there is increased pressure for stricter enforcement of existing standards and stronger regulation of production methods.

The U.S. food safety regulatory system is complex and involves federal, state and local agencies. Moreover, responsibility for food safety is divided among agriculture, health and environmental agencies. At the federal level, the U.S. Department of Agriculture (USDA) is responsible for overseeing the safety of livestock, poultry and egg products. The Food and Drug Administration (FDA) is accountable for other fresh and processed foods, including shell eggs, fresh produce, and food imports other than meat and poultry.

In California, the California Department of Food and Agriculture (CDFA) also carries out inspections of meat, milk and milk products. Milk in California must meet stricter bacteriological standards than federal standards (CDFA 2009). The CDFA cooperates with egg, meat and dairy producers to facilitate adherence to standards through voluntary quality assurance programs (QAPs).

Oversight is also divided among agencies by stages of production. At the production level, the safety of plant and animal products is enforced by the FDA, the California Department of Health Services (CDHS) and the California Department of Food and Agriculture. These agencies also enforce regulations governing the use of medications in food animals and the safety of animal feed. At the processing stage, food safety regulations are enforced by the FDA, USDA's Food and Inspection Service (FSIS) and CDFA. Pesticide use is regulated by the Environmental Protection Agency (EPA) and the California Department of Pesticide Regulation (CDPR).

Food safety agencies oversee the production of safe food by conducting inspections of food production facilities, by testing food for contaminants, and by mandating practices. For instance the USDA requires that producers of meat, poultry, seafood and juice implement Hazard Analysis and Critical Control Point (HACCP) systems. HAACP plans require that producers monitor and control potential food safety hazards at particular points in the production process and keep records of their activities.

Independent of regulatory requirements, firms face market incentives to produce safe food products. Firms wish to maintain a reputation for producing safe products because failure to do so will reduce the demand for their products. However, the incentives for firms to deliver safe food are limited by the fact that safety is often unobservable, it is difficult to identify the food product that causes a food-borne illness and it is difficult to trace the origin of a food safety incident.

Nonetheless, private initiatives to improve the safety of food are becoming common. Many industries, through marketing agreements, have adopted conventional work practices, such as HACCP systems, to improve food safety. Large purchasers of food products such as fast-food restaurants and retail supermarkets have considerable influence on the level of food safety. Their high volume of purchases allows them to stipulate stricter requirements for food safety from their suppliers.

California's Quality Assurance Programs (QAPs) are industry-led efforts to improve food safety. These programs draw upon the knowledge provided by industry leaders, researchers, California regulatory agencies and other experts to develop and disseminate scientifically-based practices that reduce pathogenic contamination. Under the California Dairy Quality Assurance Program, dairy producers who certify their production reduce their exposure to regulatory enforcement (CDQAP 2004). After cases of *E. coli* bacteria on spinach resulted in several deaths, almost 120 handlers, marketing about 99 percent of the volume of California leafy greens, joined to form the California Leafy Green Products Handler Marketing Agreement (LGMA 2009). The agreement would require producers and handlers to adhere to industry best practices, some of which have raised concerns about the loss of wildlife habitat. QAPs such as the Leafy Greens Agreement and the Dairy Quality Assurance Program may expand market access, reduce the likelihood of food safety incidents and contribute towards regaining consumers' confidence in the event of a food safety incident.

Technology improvements have made the use of new techniques economically profitable. Reduction in the cost of recordkeeping has spurred interest in the use of traceability to increase food safety. Traceability systems provide records of the source and channels through which a particular food product must pass on its way to consumers. Private firms may implement traceability systems in order to improve efficiency and product quality, in addition to other actions they take to promote food safety. The ability to trace food products to their source allows the quick withdrawal of unsafe products from the market and it makes food safety claims more credible to consumers. Moreover, traceability provides incentives for firms to ensure food safety because traceability facilitates the allocation of liability costs and other costs related to the discovery of unsafe food to the firm source of contamination.

Issues related to the use of antimicrobial drugs to treat bacterial diseases in livestock have recently emerged. Antibiotics have increasingly been used in animal husbandry, particularly in pig and poultry production, due to their growth promoting effects when added to animal feed in sub-therapeutic doses (WHO 2008). Indeed, about 70 percent of U.S. antibiotic production is used in animal agriculture for non-therapeutic purposes – more than four times the amount used to treat humans (Mellon et al. 2001). Such use is of particular concern because studies have shown a link between drugs in animal feed and antibiotic resistance in humans. The FDA estimates that at least 5,000 Americans are affected each year by longer bouts of food poisoning caused by bacteria passing from poultry to humans that are resistant to antibiotics (WHO 2008).

In 1997, the European Union banned the use of growth promoting drugs in animals, if these drugs were essential to treating life-threatening diseases in humans. The ban of

non-therapeutic drug use in animal feed had no significant impact on animal health or food safety (WHO 2008). Similarly, under recently introduced legislation in the United States, the FDA would reconsider approvals it made for seven classes of antibiotics to be used in animal feed. If these drugs are found to cause drug resistance in humans, their approvals to be used in animal feed will be rescinded (H.R. 1549).

— University of California Agricultural Issues Center, July 2009

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