ERS Research Brief

Diet and Health

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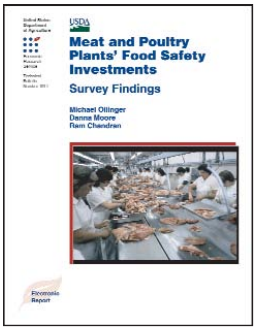

Find the full report at ***www.ers.usda.gov/publications/tb1911***

Meat and Poultry Plants' Food Safety Investments: Survey Findings

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Inspectors from USDA's Food Safety and Inspection Service (FSIS) traditionally conducted visual examinations of cattle and poultry during slaughter and processing, looking for disease and other obvious physical defects, and rejecting meat deemed to be unwholesome. FSIS shifted the focus of its food safety inspection procedures in 1996, when the agency promulgated the Pathogen Reduction/Hazard Analysis Critical Control Point rule (PR/HACCP).

The meat and poultry processing and slaughter industries have adopted a number of voluntary food safety measures in response to that change in focus, in addition to complying with the new regulation. The PR/HACCP rule employs a system of checks at critical control points where food safety is at risk, requires plant operators to conduct tests for generic *Escherichia coli* (*E. coli*), and imposes *Salmonella* performance standards. Implementation began in 1997 and was mandated by early 2000 in all sizes and types of meat and poultry slaughter and processing plants in the United States.

What Is the Issue?

Anecdotal accounts have been available since the 1980s on industry efforts to ensure food safety. But there are no comprehensive reports of how industry and government concern about food safety have affected processing practices, technologies, and investment decisions. ERS' *Meat and Poultry Plants' Food Safety Investments: Survey Findings* provides information on the effects of the FSIS regulation. The actual survey may be found at www.ers.usda.gov/data/haccpsurvey.

Prior to the ERS-initiated survey, very little data existed on how the PR/HACCP rule has affected the types of food safety technologies in processing/slaughter plants and the costs plants have incurred and investments they have made independent of PR/HACCP to ensure food safety. ERS initiated the survey in order to obtain data that would provide a better understanding of how the complex mix of technological developments, private markets, and government regulation interact to provide safe and wholesome meat and poultry products.

What Did the Study Find?

From 1996 through 2000, U.S. meat and poultry slaughtering and processing plants as a group spent about $380 million annually and made $570 million in long-term investments to comply with the PR/HACCP regulation. During the same time period, the industry spent an additional $360 million on food safety investments that were not required by the PR/HACCP rule. Those figures are much higher than the cost estimate of $1 billion to $1.2 billion spread over 20 years made by FSIS prior to enactment of the regulation, but close to the $623 million in costs projected by ERS in earlier research. FSIS considered primarily administrative costs: recordkeeping, planning, testing, and capital outlays. The ERS analysis also included the costs of hiring the workers necessary to remain in regulatory compliance, and the additional capital outlays necessary to

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bring each plant up to the standards necessary for regulatory compliance. Notwithstanding the higher cost estimate, projected health benefits still exceed industry costs. A 1997 ERS study estimated benefits of $1.9 billion in annual health cost savings linked with a reduction in foodborne illness due to implementation of new food safety technologies.

Consumer prices of meat and poultry products have been affected very little by PR/HACCP. ERS survey data suggest that the PR/HACCP rule has raised beef and poultry slaughter plant costs by about one-third of 1 cent per pound. These are average prices per pound of beef and not the average cost incurred by each plant. Small plants, which tend to produce more specialized products, had much higher average costs than the giant plants, which produce mainly commodity products, such as boxed beef. Since plants must recover their costs, this means that while prices for commodity products will rise very little, prices for more specialized products, like cut-to-order beef, may rise as much as 2 or 3 cents per pound. It also means that small plants that do compete in commodity markets may find it more difficult to remain in business.

A meat or poultry plant's size was a strong predictor of its choice of food safety technology. Large plants tended to choose equipment and testing technologies; small plants relied more on manual sanitation and adjusting plant operations.

Meat and poultry plants made significant new investments to comply with the PR/HACCP rule. However, market forces were also at work. Retail and restaurant customers of meat and poultry plant products and officials receiving exported meat products are vitally concerned about food safety and are in a better position than consumers to ascertain the food safety of the products that they receive. Using this position, they encouraged the use of more sophisticated food safety technologies, an expanded array of food safety practices, and a level of investment beyond that required by the PR/HACCP regulation. U.S. plants that exported products and/or those whose customers specified food safety measures made greater investments in food safety operations than other plants did.

The role played by markets in imposing strict food safety standards on meat and poultry producers has public policy implications. It suggests that information about plant food safety performance provided by FSIS, such as plant quality control performance ratings, could be used by meat and poultry buyers in their purchasing decisions and may encourage greater diligence in performing food safety-related tasks and elicit greater investment in food safety technologies.

The ERS/WSU survey provided a substantial amount of data related to PR/HACCP that will be explored more extensively in future studies. Those studies will examine the perceived benefits of PR/HACCP and the long-term rather than the short-term costs of PR/HACCP. They also will examine the impact of plant characteristics, food safety equipment, and processing practices on plant quality control performance. The technological methods plants use to provide food safety is another potential area of investigation.

How Was the Study Conducted?

ERS designed and funded the survey. Washington State University's Social and Economic Sciences Research Center (SESRC) conducted the survey in early 2001, completing it in May 2002. Surveys forms were sent to 1,725 plants classified as cattle, hog, or poultry slaughter plants or as cooked or raw meat processing plants with no slaughter operations.

Of the 1,725 recipients, representatives from 996 plants completed surveys and returned them to SESRC. The survey plants ranged in size from establishments with only a handful of workers slaughtering 1 or 2 animals per week to firms with more than 1,000 workers and producing millions of pounds of product per year. The survey questions and frequency of responses are accessible on the ERS website at www.ers.usda.gov/data/haccpsurvey.