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Meat and Poultry Plants' Food Safety Investments: Survey Findings

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Abstract

Results from the first national survey of the types and amounts of food safety investments made by meat and poultry slaughter and processing plants since the late 1990s provide evidence that market forces have worked in conjunction with regulation to promote the use of more sophisticated food safety technologies. From 1996 through 2000, U.S. plants as a group spent about \$380 million annually and made \$570 million in long-term investments to comply with USDA's 1996 Pathogen Reduction/Hazard Analysis and Critical Control Point (PR/HACCP) regulation, according to a survey initiated by the Economic Research Service. The U.S. meat and poultry industry as a whole during the same time period spent an additional \$360 million on food safety investments that were not required by the PR/HACCP rule. Implementation of the regulation began in 1997 and was mandated by early 2000 in all sizes and types of meat and poultry slaughter and processing plants.

The full HACCP surveys referenced in this technical bulletin are available at:
www.ers.usda.gov/data/haccpsurvey.

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About the Authors

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Summary

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 USDA's 1996 Pathogen Reduction/Hazard Analysis and Critical Control Point (PR/HACCP) regulation, according to an Economic Research Service/Washington State University survey. The entire U.S. meat and poultry industry during the same time period spent an additional \$360 million on long-term food safety investments that were not required by the PR/HACCP rule.

Averaged out over 1996-2000, the industry's private and HACCP-required long-term investments of \$930 million came to about \$180 million per year. That average amounted to about 10 percent of the \$1.8 billion the U.S. meat and poultry industry spent in total investments annually over that period, according to the Census of Manufacturers (U.S. Department of Commerce, 1999a, 1999b, 1999c).

The industry's annual investments in food safety measures are much higher than the cost estimates made by USDA's Food Safety and Inspection Service (FSIS) prior to enactment of the regulation. FSIS estimated the U.S. meat and poultry industry as a whole would spend less than \$50 million per year to comply with the PR/HACCP regulation, or \$1 billion to \$1.2 billion spread over 20 years. ERS research projected the U.S. meat and poultry industry would spend \$623 million annually to comply with the regulation. Even with 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 food safety technologies and PR/HACCP procedures (Crutchfield, 1997).

One reason for the disparity between the FSIS and ERS cost figures is that FSIS considered only administrative costs: recordkeeping, planning, testing, and capital outlays. The ERS analysis included those costs as well as the costs of hiring the workers necessary to remain in regulatory compliance, and the additional capital outlays necessary to bring each plant up to the standards necessary for regulatory compliance.

The annual cost of HACCP compliance amounts to less than 1 percent of the cost of meat and poultry products, an ERS analysis of survey data shows. The PR/HACCP rule has raised beef and poultry slaughter plant costs by about one-third of 1 cent per pound, the data suggest. 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 prices for commodity products will rise very little, while 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 competing in commodity markets may find it more difficult to remain in business.

Designed and funded by ERS and conducted by Washington State University's Social and Economic Sciences Research Center (SESRC) in

early 2001, the survey is the first national one to examine the effects of the PR/HACCP rule and of private markets on plant costs and food safety technology use since the regulation went into effect. The ERS analysis of survey results focused primarily on the extent to which meat and poultry plants have been encouraged to adopt and use new food safety technologies and practices to control pathogens. Meat and poultry plants made significant new investments to comply with the PR/HACCP rule. However, market forces were also at work, encouraging the use of more sophisticated food safety technologies and an expanded array of food safety practices and boosting investments by plants beyond those required by the PR/HACCP regulation.

The survey data show that a meat or poultry plant's choice of food safety technology was strongly influenced by the plant's size and the strength of its market incentives. Large plants favored equipment and testing technologies; small plants relied more on manual sanitation and adjusting plant operations. U.S. plants that exported products and were subject to food safety requirements by those customers, among others, made greater investments in food safety operations across a range of technologies than plants that did not export products to other countries.

The 1996 PR/HACCP rule shifted emphasis from visual inspection of carcasses to control of pathogens using a system of checks at critical control points where food safety is at risk, required plant operators to conduct tests for generic *Escherichia coli* (*E. coli*), and imposed *Salmonella* performance standards. Implementation of the regulation 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.

In conducting the survey, SESRC sent surveys to 1,725 plants classified as cattle, hog, or poultry slaughter plants or cooked or raw meat processing plants with no slaughter operations. Of the original 1,725 plants, 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 ones with more than 1,000 workers and producing millions of pounds of product per year. The survey questions and frequency of responses can be accessed on the ERS website at www.ers.usda.gov/data/haccpsurvey.