

Background

From 1906 through the present, the meat and poultry industry has become one of the most heavily regulated industries in the United States. The U.S. meat and poultry inspection system has augmented industry efforts to create the safest meat and poultry food supply in the world. Under the Federal Meat Inspection Act, FMIA (21 U.S.C. 601 et seq.), and the Poultry Products Inspection Act (21 U.S.C. 451 et seq.), the United States Department of Agriculture's Food Safety and Inspection Service (USDA FSIS) issues regulations governing the production of meat and poultry products prepared for distribution in commerce. FSIS and its nearly 10,000 employees inspect about 6,500 establishments producing meat, poultry and egg products. Veterinary inspectors check animals before and after slaughter, visually and physically examining more than 5 billion poultry carcasses and 100 million livestock carcasses each year.

Federal inspectors also monitor products during processing, handling, and packaging to ensure that they are safe and accurately labeled. Federal inspectors have the authority to shut plants down for food safety violations, by withholding the federal inspection mark on products. Companies under federal inspection apply the USDA mark to all products. The mark contains an establishment number, which indicates the facility that produced the product. The presence of the mark indicates that the product was produced in compliance with one of the most comprehensive set of regulations applied to an industry.

At the close of the twentieth century, the American Meat Institute, National Academy of Science, Government Accounting Office, and National Advisory Committee on Microbiological Criteria for Foods called for changes in the existing inspection system to better address microbial pathogens, and to move away from carcass-by-carcass inspection. A major shift in the approach to meat and poultry inspection began in 1996, with the issuance of the Pathogen Reduction and Hazard Analysis and Critical Control Point (PR/HACCP) Rule.

HACCP

The HACCP rule stated that "all slaughter and

processing plants will be required to adopt the system of process controls to prevent food safety hazards known as HACCP." The concept of HACCP was developed and implemented by Pillsbury to make safe food for astronauts. In response to the HACCP-based regulation, the industry began a three-year process of implementing HACCP in accordance with federal rules.

Under HACCP, each plant must analyze the processes used to make each type of product and must identify 1) where problems may occur and; 2) which hazards are reasonably likely to occur. Food safety resources are then concentrated at these points. Essentially, HACCP is built on a strategy of preventing problems before they occur rather than simply detecting them after the product is made. Federal inspectors are present in the plants to determine adherence to the internal HACCP plan and that the product being produced meets federal standards.

The PR/HACCP Rule established that critical limits must be designed to satisfy FSIS regulations, including performance standards that create levels of pathogen reduction and limits on pathogen growth that official establishments must achieve in order to produce unadulterated products. FSIS claimed that performance standards would help ensure the safety of products, give establishments the incentive and flexibility to adopt innovative, science-based, food safety processing procedures and controls, and provide objective, measurable standards that could be verified by FSIS oversight. FSIS wanted to minimize regulatory burdens on the industry and the performance criteria would be implemented on the basis of a statistical evaluation of the prevalence of bacteria in each establishment's products compared with national prevalence.

In addition to reorganization, FSIS wanted to:

- Implement a modernized system of risk-based inspection
- Initiate a major redeployment of its inspection resources to successfully implement HACCP
- Better target food safety hazards during transportation, storage and retail sale.

FSIS publishes guidance (Directives & Notices) for their inspection staff on "how they are to protect the public health by properly verifying an establishment's

compliance with the pathogen reduction, sanitation, and HACCP regulations.” FSIS inspectors use expertise and judgment in determining whether sanitation performance standard requirements are met. Inspectors also take verification samples that are tested for the presence of potentially pathogenic microorganisms, selected tissues, and certain drug and chemical residues.

A critical control point, or CCP, is a step in the process at which control can be applied and is essential to prevent, reduce or eliminate a food safety hazard. When suitable, plants use a variety of intervention strategies at CCPs. Metal detectors are used to ensure that no piece of metal — like a screw from a machine — makes its way into a product. Many beef packers use steam, hot water and other washes to reduce the likelihood that microbial hazards survive on the external surfaces of meat and poultry carcasses. Other plants use hand-held steam vacuums to ensure that carcasses are cleaned adequately. Interventions also may include the use of food-grade additives that kill or reduce the growth of potential microbial hazards, infrared heat tunnels to pasteurize product surfaces and high-pressure systems to kill any surviving bacteria on certain meat and poultry products. Microbiological tests conducted at meat plants on equipment or products include tests for generic *E. coli*, *Listeria* species and *Listeria monocytogenes*, *Salmonella* and *E. coli* O157:H7. The tests are

conducted by companies or federal laboratories and are an additional measure used to ensure that food safety systems are working properly.

Summary

HACCP has provided a framework for meat inspection to move into the 21st century. The HACCP approach provides a science-based approach to controlling potential food safety hazards, whether they are physical, chemical or microbiological. Reducing microbiological contamination in the food supply is a priority for the meat and poultry industry. Because microbial pathogens, if present, typically are present only in very low numbers, eliminating the possibility of a single microbial pathogen creates unique challenges. While recognized by international experts, such as those of the International Commission on Microbiological Specifications for Foods, that microbiological testing cannot ensure food safety, testing is used to help verify that the HACCP procedures are working to control, reduce or eliminate potential microbial hazards.

And this system, coupled with the industry’s commitment to producing the safest food possible, means that the U.S. meat and poultry supply is among the safest in the world.

Helpful Links

American Meat Institute

<http://www.meatami.com>

<http://www.meatsafety.org>

Food Safety and Inspection Service

<http://www.fsis.usda.com>

Third-Party Experts

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