

Meat Inspection Overview

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Introduction

The safety of meat products and the protection of public health are primary concerns for the beef industry. Throughout the past few years and even today, there are many food safety challenges facing the industry. The industry has completed and is currently conducting research, identifying new and improved technologies, and exploring all opportunities to strengthen the safety of today's meat supply. The beef industry is dedicated to producing the highest quality and safest beef products for consumers.

Government oversight is not new to the meat industry, but it has continued to change. In 1906, the meat industry was heavily criticized in "The Jungle" written by Upton Sinclair for poor working environments and producing meat under insanitary conditions. Congress responded to the public demands for improved working conditions and better sanitation by passing the Federal Meat Inspection Act (FMIA) of 1906, which was amended in 1967 by the Wholesome Meat Act. In late 1992 and early 1993, there was an outbreak of Escherichia coli 01 57:H7 which caused some people to question the safety of meat products, especially ground beef. Partly in response to the public concern, the United States Department of Agriculture's (USDA) Food Safety and Inspection Service (FSIS) released the 1996 Pathogen Reduction/Hazard Analysis and Critical Control Point (PR/HACCP) Final Rule, which mandated the implementation of HACCP throughout the meat industry.

Meat Inspection

Under the Meat Act the USDA/FSIS inspects all meat sold in interstate commerce and re-inspects imported products to ensure they fulfill all U.S. requirements. As of August 2002, the FSIS had over 9,000 full-time employees (Table 1) serving to ensure that all regulatory requirements are met in approximately 6,200 federally inspected establishments. Unlike the Food and Drug Administration's (FDA) inspection system that has periodic visits by inspectors to food establishments, FSIS inspectors are in the establishments each and every day to ensure that the products are fit for human consumption and in compliance with all Federal laws governing the wholesomeness and safety of meat products.

Therefore, the meat industry is truly the most highly regulated food industry in the country.

To provide this extensive oversight, FSIS maintains a comprehensive system of controls, some of which are outlined below.

D.C. Headquarters Permanent	642
Field Permanent	8,385
Laboratory Permanent	196
Total Permanent/Full-Time Employees	9,223

Table 1: FSIS Permanent Full-Time Employees as of 8/20/2002

Humane Handling and Antemortem Inspection:

The inspection process starts with the live animal. Ante-mortem inspection involves a visual and physical evaluation of the live animal prior to slaughter to identify any conditions that may indicate disease or illness. The inspection personnel are responsible for identifying any high-risk animals and making determinations to allow them to enter the food chain or to condemn them from entering. These actions are taken to ensure that meat is safe and wholesome for consumption. Humane handling has long been of interest to both the Agency and the industry. The beef industry has studied the behavior and movement of cattle and designed pens, walkways and equipment to improve the handling of livestock. In early 2002 the FSIS placed 17 District Veterinary Medical Specialists (DVMS) in the field to deal specifically with the oversight of humane handling issues. Strict guidelines are in place and strongly enforced to prevent the mishandling of animals.

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Postmortem Inspection:

The inspectors are responsible for conducting a thorough examination of the lymph nodes, organs, and entire carcass to identify signs of disease and unwholesome conditions. This inspection process involves all slaughtered animals. The postmortem inspection allows inspectors to further evaluate the carcass and tissues from any animal they suspected to be a high risk during antemortem inspection before a final decision on product use is determined. If any carcass or its parts are identified as diseased or unwholesome then they are condemned and prevented from entering the food supply. This is a complete system to prevent diseased animals from entering the food supply.

Product Inspection:

The inspection system continues throughout the entire processing segment of the industry, including both raw and fully cooked products. Processing inspectors are responsible for processed meat products and all other ingredients contained in the finished product. These inspectors are responsible for cured and smoked products, frozen dinners, canned meats, and other processed products. They must verify that the establishment is maintaining sanitary conditions and following all procedures and labeling regulations.

Hazard Analysis and Critical Control Point (HACCP):

The use of HACCP as a process control for food safety is not new to the food industry or to the meat industry. Many establishments were utilizing HACCP before the release of FSIS' Pathogen Reduction/HACCP final rule on July 25, 1996. However, the release of the HACCP rule is probably the most significant change for meat inspection since the 1967 amendment to the Act.

As the name implies, there are two components to the 1996 rule - 1) the reduction of pathogens, and 2) the development and implementation of HACCP systems. The pathogen reduction part of the rule includes the Salmonella Performance Standard and the generic *E. coli* testing. The regulation was phased in over a three-year period with the final implementation dates in early 2000. Today, all federally and state inspected establishments are operating under a HACCP system and all new establishments must have a HACCP Inspected Meat system developed before receiving a grant of inspection.

HACCP allows establishments to identify food safety hazards that are reasonably likely to occur in the process or type of product being produced and establish points of control to prevent them from occurring. HACCP is a science-based process control system that focuses on preventing food safety problems. The role of the FSIS inspector in a HACCP system is to verify that the establishment has developed and is implementing the HACCP system as designed. In late 2001, the FSIS introduced the Consumer Safety Officer (CSO) positions that report to the district offices. The CSO is responsible for conducting a comprehensive assessment of the establishment's food safety system to see if it is an adequately designed and supportable program that will control food safety hazards.

Residue and Microbiological Testing:

FSIS has an on-going residue monitoring program to detect and prevent the misuse of chemicals (i.e., antibiotics) during the production of livestock. The Agency is responsible for identifying any high-risk animals and collecting samples for laboratory analysis to determine if violative levels of chemical residues are present. The industry has been working with the Agency to continue to decrease the possibility of chemical contamination by promoting educational programs for livestock producers and implementing quality systems, such as the Beef Quality Assurance (BQA) program. Through the efforts of both the Agency and the industry, the risk of chemical residues in beef will continue to decline.

Microbiological contamination is another major issue facing the meat industry. Pathogens such as *Listeria monocytogenes* and *Salmonella* are concerns on fully cooked, ready-to-eat products. The industry has conducted extensive research to learn more about environmental contamination in operations producing ready-to-eat foods to help minimize the risk of *Listeria monocytogenes* and other pathogens on fully cooked products. The FSIS personnel randomly select finished products to test for these pathogens. Any products that are found to be contaminated will be prevented from entering the food supply or will be recalled if already in commerce.

In 1994, FSIS declared that raw ground beef contaminated with the pathogen *E. coli* O157:H7 is adulterated and must be further processed to kill the microorganism or destroyed. This was the first time the presence of bacteria in a raw meat product was defined as an adulterant. FSIS also initiated a microbiological testing program to detect *Escherichia coli* O157:H7 in raw ground beef (Table 2). As of Oct. 7, 2002, 42 out of more than 5,000 samples collected have tested positive for *E. coli* O157:H7.

SOURCE	CY 2000		CY 2001	
	ANALYZED	POSITIVE	ANALYZED	POSITIVE
Federal Plants	5,019	36	5,514	48
Retail Stores	1,292	17	1,462	11
State Plants	50	1	27	0
Imports	13	1	6	0
Totals	6,374	55	7,009	59

Table 2: *E. coli* O157:H7 Test Results for Calendar Years 2000 and 2001

Inspected establishments and retail outlets are randomly selected for sample collection. Imported ground beef products are also subjected to sample collection by FSIS Import Inspection personnel and ground beef products produced at state inspected establishments are collected by state program personnel.

Sanitation:

The HACCP final rule also required the development and implementation of Sanitation Standard Operating Procedures (SSOPs). These programs are intended to prevent direct product contamination or adulteration, and focus on pre-operational and operational activities. Every establishment must develop, implement, and maintain effective SSOPs. Also, the Sanitation

Requirements for Official Meat and Poultry Establishments Final Rule became effective on January 25, 2000. This rule established performance standards for sanitation and was designed to consolidate the sanitation regulations into a single rule applicable to both meat and poultry. Section 416.1 of the rule states, “Each official establishment must be operated and maintained in a manner to prevent the creation of insanitary conditions and to ensure that product is not adulterated.”

The USDA Inspection Legend

The USDA’s Food Safety and Inspection Service has authority over the production of wholesome and safe meat products. Each federally inspected establishment is granted an establishment number that is placed on the official inspection legend. The inspection legend is stamped onto carcasses at various locations and placed onto product labels of packaged meats. The application of the inspection legend means that the operation has complied with all of the Agency’s regulatory requirements.

Summary

Meat production is the most highly regulated food industry. The USDA’s Food Safety and Inspection Service is responsible for developing rules and regulations for the production of wholesome and safe foods and providing regulatory oversight during the day-to-day production. However, the beef industry understands and accepts its responsibility in producing the safest product possible. The combination of regulatory oversight and the commitment and dedication of the industry should allow consumers to purchase and prepare meat products with confidence in the safety of the product. Food safety begins with the establishment, includes regulatory verification, and ends with the consumer. Working together - the USDA’s Food Safety and Inspection Service, the beef industry, and the consumer - we can make a winning team for the safest beef supply in the world.

For more information contact:

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