

Historical Review

Chronological Milestones in American Meat and Poultry Inspection

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Introduction

Herbert W Ockerman has been connected to the food industry since the 6th grade (WW2). He was working in the local supermarket when the butcher was drafted; so at this age he became the butcher. Also, on the farm, he participated in harvesting animals and curing meat tissue. When OSU cooperated with the USDA, he taught biochemistry of muscle tissue and statistics to approximately 2,000 lay and veterinary inspectors. He has also been involved in meat research and teaching for 52 years at OSU. Consequently, he has seen most of these meat and poultry inspections developed and being implemented.

History of Meat and Poultry Inspection

- 1890 - the meat industry requested Congress to enact a law so they could export meat exported meat.
 - 1891 – May 12: USDA initiated a law for ante-mortem cattle inspection for export
 - 1891 - U.S. Federal Inspection was performed on:
 - o 4,687,000 cattle
 - o 21,999,000 hogs, and
 - o 5,741,000 sheep and lambs
- Which amounted to:
- o 681,220,000 pounds of pork
 - o 498,344,000 pounds of lard, and
 - o 395,540,000 pounds of beef
- 1897 - Effective date of the mandatory ante-mortem inspection
 - 1904 - U.S. National Pure Food Law was passed:
 - o Provided standards of purity, strength, and character of food
 - o Prohibited interstate trade in adulterated or misbranded products
 - 1904 - Upton Sinclair published a sociological novel titled the “*The Jungle*”

- o Alleged unsanitary conditions in Chicago meat plants
 - o Only a few pages were related to the meat industry
 - o It also alleged poor economic and social aspects of the lives of the immigrant workers, many of whom were recent Polish immigrants
 - o This book made a deep impression on the American public
 - o This book also furnished most of the emotion behind the passage of the 1906 Meat Inspection Act
 - 1905 - A special grand jury was called to investigate the evidence of anti-trust laws and violations by U.S. meat packing companies and their executives. Many felt that the U. S. meat packing companies were guilty, even though charges were dismissed because of a technicality
 - 1906 - A bill in Congress provided for Federal Meat Inspection:
 - o It covered domestic (interstate) and foreign trade
 - o It was attached as an amendment to the agriculture appropriations bill as a rider
 - o The bill indicated that the federal government should pay for inspection
 - o The basic meat inspection law was passed
 - o The 1906 Meat Inspection Act was passed and it laid the foundation for meat inspections for many years
- However, the inspection meat regulation was:
- o Limited by lack of authority and funds for personnel
 - o Primarily restricted to ante-mortem examination with only limited post-mortem scrutiny
- Consequently, the bill did not cover the product in subsequent operations and transport:
- o Plant conditions and operating procedures were also outside the jurisdiction of the 1906 Inspection Act
 - o About the only weapon that the Meat Inspection Service had was to threaten withdrawal of inspection from a plant
- The 1906 original law permitted only certain preservatives:
- o Salt
 - o Sugar
 - o Wood smoke
 - o Vinegar

- o Pure spice
 - o Saltpeter
- But over time the expanded role of meat inspection included:
- o Specified proper materials for floors, walls, and benches
 - o Submission of building and remodeling plans prior to construction
- 1907- First full year of Federal Inspection under the new law:
 - o 702 establishments in 196 cities were under inspection
 - o The American Meat Packers Association, the packers' first real trade association and now known as the American Meat Institute, was formed
- Law provided consumers:
- o Health protection
 - o Pocketbook savings
 - o Confidence in the "wholesomeness and truthfulness" of labeling
- Meat Industry:
- o public confidence in a wholesome meat supply as a better product
- Livestock producers:
- o steady market for their animals
- Seven procedures were adopted to ensure food safety:
- o Sanitation of establishment
 - o Inspection of animals before slaughter
 - o Inspection of carcasses and internal organs after slaughter
 - o Inspection of meat processing and preparation of meat food products and collection of samples of products for laboratory analysis
 - o Destruction of material condemned for food purposes
 - o Supervision application of the stamp or label indicating federal approval
 - o Maintenance of chemical, bacteriological, pathological and zoological laboratories
- Trichinosis problem:
- o Europe meat industry - microscopic examination of pork as a control measure
 - o U.S. in 1907 deemed this ineffective and thought a safer and effective substitute was cooking, refrigeration, curing, etc. which is effective in destroying Trichina. Educating the public that pork must be thoroughly cooked before eating was an added safety factor. This created a decline in trichinosis among hogs and was also aided by the adoption of the "Cooked Garbage Feeding Laws".
- Federal Inspection soon was allowed to supervise:
 - o Every production procedure
 - o All materials and additives used
 - o Expected that every processed meat must contain an inspection and information label
 - o Expected that every label must pass accuracy tests
 - o Condemned carcasses or parts of carcass were also kept under meat inspection control
 - 1909 – Change from old brick and wood-mill type buildings to concrete and steel structures
 - o Impervious walls and floors became an economic necessity – sanitation
 - o Salaries of federal meat inspectors are paid by the government except for overtime service in which the government is reimbursed
 - 1913 – Inspection limited the amount of cereal in inspected sausage and required that the cereal must be listed on the label
 - o Inspection restricted the amount of water for uncooked sausage to the 3% level
 - o The industry fought back
 - o U.S. supreme court upheld the secretary of agriculture's decision
 - 1941 - A listing of ingredients on the label became mandatory
 - 1946 - Allowed inspection of exotic and game animals
 - 1950s - Fiftieth Anniversary of US Meat Inspection:
 - o Cost approximately fifteen cents per animal
 - o Nine cents per person per year for each U.S. consumer
 - o Only a tiny fraction of a cent per pound for meat consumed
 - o Eighty percent of the nation's commercial meat supply went through the Federal Inspection System
- 1956:
- o 1154 meat-processing plants were under Federal Meat Inspection
 - o More than one hundred million meat animals were slaughtered annually
- From the 1950's on, the inspection program recognized that there was an increasing need for a multi-disciplinary work force. Therefore, people were added in increasing numbers in the disciplines of:
- o Statistics
 - o Analytical chemistry
 - o Toxicology
 - o Meat science and food technology
 - o Medical specialists in public health issues were added in the next decade

In 1955, diseases were reduced with the aid of Meat Inspection Program:

- o Instances of tuberculosis in farm herds had been reduced to 0.011%
- o Also reduced was Vascular exanthema brucellosis
- o Actinomycosis
- o Anthrax
- o Hog cholera, and
- o Texas fever

Regular collection of detailed statistics on the inspection program and/or processing of meat and meat food products began. This gave the general public and processors quantitative facts about operation of U.S Federal Meat Inspected plants and the general health level of animals

- 1970's - Issuance of criteria for determining "equal to" for the state programs was established
 - o The federal government absorbed those state's inspection programs choosing NOT to continue operating
 - o The federal government reimburses up to 50 % of the cost of the states that decided to continue to operate a state inspection program
 - o Approximately 20 states do NOT operate their own inspection program and the federal government has taken on this reasonability in these states
 - o Meat and poultry products prepared in state-inspected plants still COULDN'T be sold in another state

1970 - Under-processed roast beef caused an illnesses outbreak and HACCP (Hazard

Analised Critical Control Points) was initiated to try to solve this problem

- o HACCP was endorsed by both industry and food regulators
- o It is the current system used for U.S. meat inspection
- o Mandatory for all plants, whether under federal or state inspection
- 1980's – The next step
 - o Introduction of Total Quality Management (TQM)
 1. An inspection method in which all people in the meat plant were involved
 2. This was a voluntary program
 3. A stepping-stone into the current system of HACCP
 - o TQM relied more heavily on a company's quality control system
 - o Approximately 1,000 plants developed and implemented

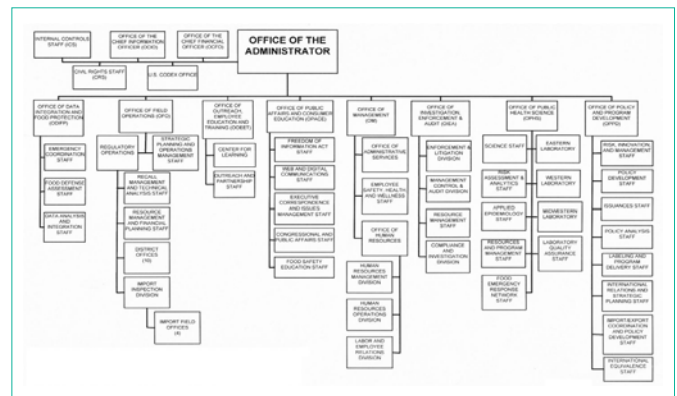
TQM covering all phases of their operations

- o Over 3,000 plants had such systems covering parts of their operations
 - Seven-core principles of HACCP were adopted:
 - o Conduct a hazard analysis
 - o Identify critical control points
 - o Establish critical limits
 - o Establish control process monitoring
 - o Establish corrective action if critical limits are exceeded
 - o Keep record of the HAACP system
 - o Verify the system
 - Food Safety and Inspection Service (FSIS) - accreditation of its laboratories to the (International Organization for Standardization) ISO standards
 - o FSIS's authority to close a plant due to failure of the Salmonella test was struck down by the U.S. Court
 - o FSIS still has the ability to use the test for closer scrutiny
 - HACCP - increasing emphasis was placed on plant data and other records about a plant performance
 - o These records can be a basis for sanctions - when needed including warning letters, temporary suspension of inspection, permanent withdrawal of inspection, or taking other civil or criminal actions
 - o As of 2014, states of ND, WI (2 establishments are operating were operating state programs) , and IN have cooperative agreements
 - 1999 - Approximately 7,500 FSIS inspection personnel carry out the inspection laws in approximately 6,500 plants that prepare 250,000 meat and poultry products bearing different labels
 - Since September 11, 2001 increased emphasis has been focused on possible bio-terrorism via the food supply
 - Food and Drug Administration (FDA), FSIS and American Meat Science Association (AMSA) groups have collaboratively tried to prevent the appearance or emergence of BSE in the U.S., and thus far has been successful
 - FSIS and other agencies responsible for safety of the U.S. food supply, as well as producers and sellers, have formulated plans to minimize the risk of such occurrences of BSE
 - BSE
 - o 2003- First BSE case found in America in an adult cow imported from Canada
 - o 2005 - Second BSE. First endemic case in U.S.
 - o 2006 -Third BSE, genetic abnormality (H-type)
 - 2006 - 100th Anniversary of US Meat Inspection
 - Latest concept for meat inspection is the HACCP program

- o Recommended by the National Academy of Science
- o Pillsbury used HACCP for manufacturing consumer foods
- o 2012 - Forth BSE (L-type)
- o 2012 - Ohio signed Cooperative Interstate Agreement and in 2014, and seven establishments approved and 6 more have applied
 - 2012 - Import Inspection (department of FSIS):
- o 4,226,587 pounds were rejected and refused entry into the U. S.
- o They also inspected 3 billion pounds of meat and poultry that was imported from 29 countries
 - o Of these 29 countries, the ones with greater than 1% of the import volume were in order of their percentage: Canada, Australia, Zealand, Mexico, Uruguay, Denmark, Nicaragua, Chile, Brazil, and Israel
- o Egg imports in 2012 were 13,118,996 pounds all coming from Canada
- o Meat Inspection responded to 25,978 requests for information
 - In 2012 FSIS inspection:
- o Inspected:
 1. 43,891,921 cattle
 2. 105,755,405 swine
 3. 5,420,077 other livestock
 4. 8,365,372,345 poultry and
 5. 3,400,000,000 egg products
 6. 250,000 different meat, poultry, and egg products
 7. 6,263 federally regulated establishments
- o Conducted 6.6 million food safety and food defense procedures
 - o Performed 171,953 Humane Handling (HH) verification procedures
 - o Two recalls for *E. coli* (O157H7)
 - o Four recalls for *Salmonella*
 - o 87 recalls totaling ~ 2.1 million pounds; 8 recalls were class one (serious):
 1. 21 beef
 2. 23 poultry
 3. 14 pork
 4. 1 bovine
 5. 28 combination
- FSIS Agency Strategic Goals (2014)

1. Ensure that food safety inspection aligns with existing and emerging risk
2. The Inspection service estimated employment is 9,230 staff years of which 8,526 are in the field
3. Maximize domestic and international compliance with food safety policies
4. Enhance public education and outreach to improve food handling practices
5. Strengthen collaboration among international and external stake holders to prevent food borne illness
6. Effective use of science to understand food borne illness and engineering trends
7. Implement effective policies to respond to existing and emerging risk
8. Empower employees with the training, resources and tools to enable success in protecting public health
 - The current estimated cost (2014) of U. S. Inspection System \$ 1,171,471,000 and the current U. S. population is 318,622,000 which calculates to \$3.68/person/ year

FSIS ORGANIZATION CHART



Ref: USDA - FSIS

- Regulations are often revised. Two recent examples would include:
 - o *Listeria* in cooked ready-to-eat products and
 - o *E. coli* O57:H7 in raw ground beef
 - o Both caused a rapid acceleration and development of new technologies to prevent and laboratory procedures to more rapidly and accurately identify these organisms
 - U.S. does not have a mandatory trace-back law
 - o However, the possibility of conducting trace-back is increasing
 - o Due, in large part to the increased concentration of livestock and flock producing operations
 - o Poultry production is vertically integrated, and other species are moving in that same direction

- Strategic Plan for 2011-2016 - One Purpose: We are one team, with only one purpose. And that is to protect public health. FSIS employees take pride in the fact that their jobs help prevent food borne illness.

In spite of the occasional controversy between the processors and

the inspection service, in general, most processors who look at the total picture give the U.S. Meat Inspection Service high marks for doing a good job and promoting the consumption of meat and aiding in the safety of consumers for the benefit of the farmers, processors and consumers.