

The Inspection of Meat *

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I am happy to have this opportunity of meeting with your association and sharing in the discussions of food-inspection problems.

Dr. Shrader has asked that I make some comments regarding meat inspection before we view the film "Meats With Approval." This film, released by the U. S. Department of Agriculture, tells how the Federal meat-inspection law came into being, how it is administered and what it means to the consumer in terms of health and safety. Beginning at the turn of the century when it was not uncommon for illness, sometimes even death, to follow the eating of tainted food, the film relates that many realized the need for some kind of control over the preparation and marketing of food yet were powerless to do anything to correct the condition.

After Upton Sinclair wrote "The Jungle" charging unwholesome practices in the handling of meat, many more became aroused and demanded that the government take action. In 1906 a law requiring government control of meat inspection, re-inspection and supervision of processing and labeling was passed.

The picture shows the many steps in Federal inspection, from the live animal through the slaughterhouse and cannery.

The film is being distributed through educational film libraries for the use of farm organizations and various civic, professional and consumer groups.

The need for some control over the meat we eat was recognized thousands of years ago, when Moses handed down

certain dietary laws for the Hebrew people. The inspection made by the rabbis was probably the earliest form of meat inspection. These early laws of Moses form the basis of some of the dietary laws observed by different religious groups today. Great strides have been made in veterinary science in the last fifty to seventy-five years, and we now have a scientific basis for the laws and regulations pertaining to meat inspection.

The early meat-inspection laws were designed to facilitate the exportation of meat to foreign countries and did not afford much protection to the citizens of the United States. As a result of the great clamor for an improved system of meat inspection, in order to correct some of the appalling conditions which existed in the meat industry, Congress passed the Meat Inspection Act, which became effective July 1, 1906. Our present Federal Meat Inspection Regulations were issued under the authority of this Act and succeeding acts. The principal purpose, as stated in the Act is "... for the purpose of preventing the use in interstate or foreign commerce ... of meat and meat food products which are unsound, unhealthful, unwholesome, or otherwise unfit for human food. . . ."

PURPOSE AND SCOPE

The major purposes of the present system of Federal meat inspection may be itemized further as follows: (1) to examine food animals including cattle, calves, sheep, swine, goats, and horses prior to slaughter to eliminate diseased animals; (2) to conduct a thorough post mortem examination of each animal at the time of slaughter to search out and eliminate diseased and

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otherwise unfit meat; (3) to destroy for food purposes diseased and otherwise unfit meat; (4) to see that meat and meat food products are kept clean and wholesome during the stages of preparation into articles of food; (5) to guard against the use of harmful preservatives and other deleterious ingredients; (6) to cause sound and wholesome meat and meat food products to be marked as having been "inspected and passed"; (7) to require informative labeling and to prevent the use of false and deceptive labeling on meat and meat food products; (8) to certify meat and meat food products for export; (9) to inspect meat and meat food products offered for importation into this country; (10) to examine meat and meat food products for com-

pliance with specification requirements of governmental purchasing agencies and (11) to assure proper post mortem diagnosis and disposition of carcasses in unusual cases. Research is conducted on the methods of treatment of carcasses and tissues to meet the requirements of the meat-inspection regulations. Research is also conducted on abnormal conditions in meat and its products through investigations of feeding, management and packing procedures and of diseases or parasites to which the conditions might be attributed.

Contrary to the belief of a large segment of our population not all meat sold in retail stores is federally inspected. A report issued by the Bureau of Agricultural Economics of the De-



U.S.D.A. Photograph by Knell

Two Federal veterinary meat inspectors, working on either side of a moving-top viscera inspection table, examine the internal organs taken from the hog carcasses hanging up in the rear. Every carcass whose viscera show signs of any pathological or other unfit condition is identified by a "U. S. RETAINED" tag and segregated for a later closer veterinary examination. Special tags, numbered in duplicate, are attached to each retained carcass and the viscera taken from it.

partment of Agriculture indicates that only about two-thirds of the animals slaughtered for food in this country have been examined by the inspectors of the Federal Government. It is estimated that in 1946, 33,398,000 cattle, calves, sheep and hogs were slaughtered in plants not operating under Federal inspection and 16,131,000 animals were slaughtered on the farm. Some of these animals were slaughtered in plants operated under State, county or municipal inspection, but we are safe in saying that many millions of animals received no inspection whatsoever. Since approximately 7 percent of all animals slaughtered for food under Federal inspection are found to be affected with some abnormal or diseased condition, which is seldom apparent except to an especially trained inspector, it is necessary that each animal slaughtered for food purposes be given a thorough inspection. As meat and meat products are highly perishable and may be readily contaminated, their processing, preparing and packing should be conducted in adequately equipped plants under close inspectional supervision.

During the past year, our inspectors found it necessary to condemn over 332,000 animals and carcasses and over 1,292,000 parts of carcasses. Also over 9,000,000 pounds of meat and meat food products were condemned as being unfit for food because of its having become sour, tainted, rancid, unclean, or otherwise unfit for human food. These figures represent information obtained in the course of our work in Federal meat inspection. It is very possible that if information were available regarding the health of animals not slaughtered under Federal meat inspection, the percentage might be even higher. When inspection is conducted in a plant to enable it to ship its product in interstate or foreign commerce, the entire production of the plant is subject to inspection, regardless of the proportion shipped in interstate or foreign trade.

Effective July 1, 1947, the cost of Federal Meat inspection, was placed under a system of fees to be paid by packers and others receiving the service. Under this system the Department of Agriculture continues to pay its inspectors, as in the past, but is collecting the cost from those served. The same thoroughness and economy of inspection prevails under the new system as in the past. The inspector's employment rights as a Civil Service employee are in no way diminished and he retains all his present rights under his present appointment, such as retirement, leave, within-grade promotions, etc. He continues to be paid by U. S. Treasury checks and there is no change in his relation to the management or other personnel in an inspected meat-packing establishment.

INSPECTION REQUIREMENTS

The kind of inspection necessary to assure a clean and wholesome meat supply is different from any other food-control program. To be fit for human food, meat must be derived from healthy animals and prepared under conditions which will prevent contamination. The health of each animal is of primary concern. This can be ascertained only by an examination of each animal prior to slaughter and an examination of the viscera and carcass at the time of slaughter to eliminate any portion that is diseased or otherwise unfit.

The ante mortem and post mortem inspection of meat animals is essentially a veterinary function. Veterinarians are trained in the various sciences such as chemistry, physiology, pathology, parasitology, and in clinical medicine, to qualify them for making diagnoses and for evaluating the various conditions which might affect the wholesomeness of meat and meat by-products. Trained lay assistants may detect and retain animals and carcasses that appear to be abnormal for disposition by a veterinarian. All steps

in the preparation, packing and labeling of meat and meat food products are supervised by trained meat inspectors. To assure cleanliness of all operations, it is essential that proper facilities be provided. These include (1) an ample supply of potable water, both hot and cold, well distributed throughout the plant under adequate pressure and in quantities sufficient for all operating needs; (2) provision for the proper handling of sewage and all wastes to prevent any nuisance from developing in or near the establishment; (3) floors, walls and ceilings constructed of material that can be readily kept clean; (4) floors well sloped to properly trapped and vented floor drains; (5) an abundant supply of natural light and supplemented by artificial light when natural light is inadequate; (6) suitable ventilation for all work rooms and (7) equipment which is so located and constructed that it can be readily kept clean. Only clean outer garments of washable material should be worn by persons handling meat. In order to assure personal cleanliness of all employees, it is necessary that suitable facilities be provided. Some of the most essential are conveniently - located hand - washing facilities supplied with hot and cold running water, soap and towels. Suitable welfare rooms should also be provided. These rooms should be well lighted and ventilated and equipped with lockers, hand-washing facilities, and separate rooms for toilets and urinals.

All operations should be conducted in a cleanly manner with due regard for preventing contact of meat with hides, diseased material and the contents of sinuses, digestive tract and the udder.

It is well known that sick animals are sometimes sent to the slaughtering plant in an attempt to salvage meat which might otherwise be lost. A competent ante mortem inspection is the only assurance that some of these

animals will not find their way into food channels rather than to the fertilizer plant. Any system of meat inspection should include a thorough examination of all food animals on the day of slaughter. Animals which plainly show that they are affected with a disease or condition which would make them unsuitable for food should be condemned and not permitted to be slaughtered. In order to conduct a satisfactory ante mortem inspection, it is necessary that the inspector have proper facilities for making the inspection. These should include adequate light and adequate equipment and assistance for restraining any animals which require close inspection.

The conduct of a thorough post mortem examination requires different facilities according to the species being slaughtered. Regardless of the species being slaughtered, provision should be made for handling the carcass and all parts in such a manner that diseased carcasses and parts will not contact other carcasses and to permit the handling of the carcasses and parts in a manner which would prevent any contamination.

Suitable facilities should be provided for maintaining the identity of all parts with the corresponding carcass until the entire inspection has been completed. Suitable metal tables or trucks which can be cleaned after each use should be provided for holding the viscera for inspection. The inspection procedure is adapted to the volume of slaughter and to the type of equipment which is provided. In smaller layouts, one inspector is able to perform the entire inspection whereas in some of the larger units it is necessary to have as many as seven or more inspectors regularly assigned. The inspection on each carcass should be thorough and is varied according to the species of animal and to the possible diseased conditions which may be encountered. As an example, the examination of beef includes a search for evidence of the

cystic form of one of the human tapeworms, *Taenia saginata*. Since the preferred location of the cyst is in the more active muscles, such as those of the cheek, heart, and diaphragm, these muscles are given close attention and are incised during the inspection. Other parasites detected by incision are the flukes and tapeworms, which may be found in the bile ducts. Some of the bacterial diseases such as tuberculosis may be found by palpating the lymph nodes which are the preferred seats of infection. Some of these lesions, however, are found only by carefully incising the various lymph nodes and organs.

Carcasses should be clean when presented for inspection. Particular emphasis is given to the removal of all hair, scurf, and dirt from hog carcasses, and to the proper cleaning of calf carcasses which may be dressed with the hide on.

It is essential that all diseased or otherwise unfit carcasses and parts be effectively destroyed for human food. Most establishments that have a sufficiently large volume of slaughter are equipped with facilities for rendering the condemned and inedible material into inedible product. At plants which are not equipped with such rendering facilities, the condemned carcasses and parts may be made unfit for human body by freely slashing and denaturing with crude carbolic acid or other effective denaturant.

Those carcasses and parts which are found to be fit for human food should be identified with markings which will show that they have been inspected and passed. The agency conducting the inspection should be identified on the markings. The marking fluid which is used on the carcasses and parts should be harmless and of a kind which will maintain the identity of the product.

In order to prevent spoilage, carcasses and parts should be placed under refrigeration as soon as possible after slaughter. The refrigerated rooms

should be equipped with suitable trolleys or hooks which will permit the carcasses to be thoroughly chilled in a short time without becoming contaminated in any manner. The rails should be sufficiently high and so located that the meat will not contact the floors, walls or other equipment.

The meat inspector should be assured that no harmful preservatives or other deleterious ingredients are used on the meat or product. The preservatives which are permitted to be used in establishments operating under Federal meat inspection are very limited and when used, information regarding the amount and kind of preservatives used is prominently displayed on the product or label. In this regard special attention has been given during the past few years for the use of certain antioxidants in lard and other shortening with the result that the keeping quality of these products has been greatly improved without impairing their quality and food value.

The supervision of the processing of meat and meat byproducts requires a thorough knowledge of these operations. There has been a marked increase in the last several years in the amount of sour cured meat which is found in packing plants. This is due largely to the improved sanitation and to the use of curing methods which result in a product being ready for the trade in a much shorter time than was possible when the older methods were used. Too much emphasis cannot be given to the effect that good sanitation has on the keeping qualities of meat food products. Particular attention should be given to the thorough cleaning of all equipment which comes in contact with meat. Properly constructed metal equipment is much preferred over wooden equipment. Now that stainless steel and other rust-resisting metals are more readily available, the use of equipment which is difficult to maintain in a sanitary condition should be discouraged. Prepared

products, such as sausage, loaves and the like, should be informatively marked and labeled. Such markings should include information regarding the identity of the product and the ingredients which were used in the manufacture of the article.

A well-operated meat inspection system will fill a very valuable place in the livestock disease control program. Centers of infection are often traceable when disease conditions are detected in the course of slaughter. The information obtained by the meat inspector may be transmitted to the livestock sanitary official having jurisdiction and

it is then possible for him to take the necessary measures to eradicate or control the particular disease in the area.

In conclusion, a competent system of meat inspection must have as its keystone the ante mortem and post mortem inspection of each animal and carcass. Each step in the slaughtering operation and any subsequent processing must be closely supervised. The inspector must be definitely conscious of the need for having adequate facilities for the purpose of inspection and maintenance of sanitary conditions. There is no substitute for such inspection.

WASHINGTON STATE COLLEGE
17th ANNUAL INSTITUTE OF DAIRYING
March 8 - 13, 1948

The seventeenth annual meeting of the Institute of Dairying, State College of Washington, will be held at Pullman, March 8-13, 1948. Dr. P. H. Tracy of the University of Illinois, President of the American Dairy Science Association and winner of the Borden Award, will address the convention. Other authoritative speakers on the program will deal with quality milk production, new methods of milk collection, processing, laboratory and field control, efficient plant arrangement and design, new and improved types of plant equipment, problems of management and labor, marketing and manufacturing of all types of dairy products, the utilization of byproducts, and other practical topics.

A dairy products scoring contest, "open to the world", will be a feature with judging contests, prizes, and quality clinics.

The Washington Creamery Operators Association will hold its annual meeting at the time of the institute, and President Ray McKenna of Centralia and Managing Director Ray Mil-

ler of Seattle urge a full attendance of operators. Business meetings will also be held by the Washington Milk Dealers Association and the Washington Ice Cream Manufacturers Association according to Mr. A. Frank Bird, Secretary, Seattle, and other organizations such as the Washington State Dairy Council, the State Department of Agriculture, and the State Department of Health will cooperate in the program.

Anyone interested in any phase of the dairy industry is cordially invited to participate. A tuition of \$6.00 for the entire week or \$2.50 per day will be charged to help defray the expenses of the Institute. Make reservations early either with the Washington Hotel, Pullman, Washington, or Professor C. C. Prouty of the Department of Dairy Husbandry.

For a detailed program, when completed, and all other particulars, write to Dr. H. A. Bendixen, Department of Dairy Husbandry, W. S. C. Pullman, Washington.