Lesson 1: Importance of Animal Products

Animal agriculture takes many forms throughout the United States and worldwide; however, the majority of large animal agriculture is for the purpose of producing high quality meat, poultry, dairy products, and eggs. The animal processing industry is a constantly changing, consumer-driven industry that provides billions of dollars and numerous jobs for the economy.

Animal Processing Industry

The animal processing industry has evolved into a large, corporate, automated industry, which utilizes the entire animal in some manner. The origin of the animal processing industry can be traced back to the time when small, privately-owned processing plants processed a few animals each day. Today, the majority of animals are processed in large state-of-the-art facilities that handle thousands of animals per day. Furthermore, many of the newer processing plants have their own rendering facilities, which turn inedible parts into byproducts, such as blood meal, bone meal, and feather meal.

Several key legislative acts have helped bring consistency and safety to the animal processing industry. The Meat Inspection Act of 1906 was the beginning of federal meat inspection by the United States Department of Agriculture (USDA). The Meat Inspection Act of 1906 was prompted by consumer concerns about the wholesomeness of meat products and the sanitary conditions of processing plants. In 1921, the Packers and Stockyards Act was passed to prevent unfair business dealings by packing and stockyard companies. One benefit of this act was the initiation of scale testing in sale barns and packing facilities. Scales are tested to ensure accuracy of weighed animals and products. Next in 1967, the Wholesome Meat Act was passed, which made state inspection similar to federal meat inspection. The Wholesome Meat Act has been revised several times. Presently, meat, poultry, and egg inspections are implemented by the USDA's Food Safety and Inspection Service. Inspection ensures wholesomeness, safety, and accurate labeling of meat, poultry, and egg products.

Career Opportunities

There are thousands of jobs and careers related to animal processing. These include livestock buyers, federal inspectors, USDA meat graders, quality control supervisors, and butchers.

Livestock buyers purchase animals for the processing company. Livestock buyers must be skilled in animal evaluation and meat grading in order to determine a fair market value for the livestock that they are purchasing.

Federal inspectors carry out the rules and regulations set by the USDA in order to ensure the safety of our food supply. Inspectors check the sanitary conditions of the processing plants and also inspect the health and wholesomeness of the animals, dairy products, and eggs being processed.

USDA meat graders assign meat grades for quality and cutability (yield grades) of meat carcasses. Unlike federal inspections, federal grading is not required. However, the grades that are assigned determine the value of the food product. Yield grades predict the amount of boneless closely trimmed retail cuts from the carcass, while quality grades predict the tenderness, taste, and juiciness of the meat.

Quality control supervisors manage employees and ensure that quality work is being done to provide a high-quality finished product.

Butchers cut carcasses into retail and wholesale cuts. They also process live animals into carcasses.

Economic Impact

The economic impact of the U.S. animal processing industry is quite extensive with billions of dollars worth of meat, dairy, and egg products sold each year alone. More than 358 billion dollars worth of products are sold a year. In addition, animal byproducts contribute to the profits of the processor. A byproduct is any product produced in addition to the primary product. In the animal processing industry, byproducts can be edible (heart or brains) or inedible (such as skin, hair, and bones). With the expanded use of inedible

byproducts, the economic impact is quite high. Many inedible byproducts are used in animal feeds and pet foods. A majority of animal processors' profits are derived from the sale of inedible byproducts, which include leather from cattle hides, feather meal from chicken/turkey feathers, blood meal, fish meal, and bone meal. These byproducts are used by other industries and operations, such as pharmaceuticals, clothing, and animal feeds.

Processing Affects Value of Product

Many different businesses are involved in the animal processing industry. Some processors purchase the raw animal product (animal, milk, or eggs) from the producer and process it into wholesale products. Other processors purchase the raw product and do all the processing needed to make the edible products available at the retail level. Still many other processors not only process the edible products but process the byproducts as well. As discussed earlier, byproducts can be edible or inedible. The more processing that the processor does to the raw product, the more the business is able to receive for the end products, edible or inedible.

The amount of processing the raw product (e.g., beef cattle) receives affects the cost of the end product (e.g., ground beef, chili with beef). The more processing steps involved, the higher the cost of the end product. Value-added products, such as microwave ready and ready-to-eat products, have gone through many processing steps on the way to the consumer. Consumers are willing to pay more because less time will be required for them to prepare these products to eat. For example, it would take a significant amount of time to make beef chili if the consumer had to start from the raw product (beef animal) and process it into hamburger and then process (cook) the hamburger to be put in the chili and then process (cook) the chili.

Summary

Animal processing has evolved into a large multi-billion dollar industry under the regulation of the USDA. Many careers are directly involved in the processing of animals. The sale of value-added products and byproducts help the animal processing industry remain profitable.

Credits

Martin, Phillip. *Food Science and Technology*. University of Missouri-Columbia: Instructional Materials Laboratory, 1994.

United States Department of Agriculture. National Agricultural Statistics Service. *Ag Statistics 95-96*. Washington, DC.