

Lesson 6: Processing and Marketing

Processing and marketing poultry and poultry products has changed dramatically. Poultry meat and egg processing are very specialized systems with strict procedures and sanitation requirements to ensure quality. By adding value to its products and creating new marketing strategies, the poultry industry has become strong and efficient.

Poultry Meat Processing

In preparation for processing poultry, food (but not water) is removed from the poultry house 8 to 10 hours before taking the birds to the processing plant. Preventing birds from eating before slaughter reduces the amount of food in the intestine. Food in the intestine can cause contamination of the carcass during evisceration. Evisceration is the removal of the intestines, lungs, heart, and other internal organs.

When birds enter the processing plant, they are stunned, bled, scalded, picked, eviscerated, chilled, graded, packaged, and labeled.

- Stunning means to electrically shock the birds to render them unconscious.
- Bleeding allows the blood to drain completely. If the bird is not fully bled, the carcass will have an obvious red color that renders it unsuitable for human consumption.
- Scalding involves submerging the carcass into hot water for 1.5 to 2 minutes. This relaxes the muscles that hold the feathers, making it easier to remove the plumage (feathers).
- Picking is removing the feathers from the bird. This is done by a machine that has rotating rubber fingers that pull off the feathers. Any feathers that are left pass by a large flame for removal by scorching. The birds are then rinsed with water to remove any foreign matter, blood, or feathers that may be sticking to the carcass.
- Evisceration removes the organs of the abdominal cavity, lungs, and heart from the carcass. The feet, head, and oil gland are also removed at this time.
- The carcass is rapidly chilled in ice water, graded, packaged, and labeled.

The poultry may be either marked as ice-packed, dry chill-packed, or vacuum-packed frozen. Ice-packing involves setting processed poultry into waxed boxes filled with crushed ice or CO₂ (Dry Ice). Dry chill-packed poultry is placed on a small tray with absorbent paper, wrapped in a plastic wrap, then passed through a blast freezer that does not freeze the meat but chills it. Vacuum-packed frozen poultry is wrapped in plastic bags, and then frozen in the blast freezer. It remains frozen until the consumer thaws the product for cooking.

Further Processing/Added Value

The poultry industry has added value to its products by subscribing to the United States Department of Agriculture (USDA) grading system and by further processing the poultry products. By following the USDA poultry grading system, top-grade meat can be sold at a higher price than nongraded meat. By further processing meats, the industry increases sales and offers added convenience to the consumer.

The industry offers the consumer a variety of poultry items that are easy to prepare. Only a small percentage of broilers are sold as whole carcasses. Most are sold as cut-up parts, cooked, or further processed. Such products include breast fillets, nuggets, hot dogs, cold cuts, ground meat, sausages, frozen dinners, and low-fat/low-calorie items. As the consumer is resorting to fast-food restaurants for quick meals, the poultry industry has provided these markets with cost-efficient food products.

Sanitation and Inspection

To give the public a healthy and safe product, the poultry industry is responsible for maintaining strict sanitation regulations as set by the government. Only producers who follow the USDA grading system and pass strict regulations and quality standards for facility and carcass sanitation may bear the quality symbol of the USDA (see Figure 6.1).

USDA inspectors make inspections of live birds. They are trained to recognize birds that show symptoms of disease or other problems that would make the birds

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unsuitable for human consumption. After slaughter, inspections of bird carcasses are performed. Inspectors are trained to look for unusual body conditions that would make the carcass unfit for human consumption. The carcasses are then graded by trained USDA graders. Inspectors also monitor the facilities, employees, plant grounds, and equipment to be sure all meet the strict sanitation standards.

Figure 6.1 - USDA Symbol



Since 1996, legislation requires meat processing plants for all livestock to do routine scientific testing for hazardous bacteria. This is the strictest food safety plan in the history of the meat and poultry industry. The food safety plan, called Hazard Analysis and Critical Control Points (HACCP), is a self-inspection process that focuses on the flow of potentially hazardous foods and how they are handled throughout the operation. The HACCP plan requires:

- Every plant must adopt a plan to deal with specific and potential hazards of the product. The plan will be kept in check by USDA inspectors from the Food Safety and Inspection Service.
- Every slaughter facility must have regular carcass testing for *E. coli* bacteria.
- All plants that produce ground meat products must have routine testing for Salmonella.
- Every plant must write out and perform a sanitation Standard Operation Procedure (SOP) for meeting sanitation responsibilities.

Egg Processing

Eggs require very little processing since they are naturally a prepackaged food. However, to ensure product safety and quality, there are a few procedures a production facility must follow. The eggs are washed in large commercial egg washers to remove any manure or foreign matter stuck to the shell. It is important that eggs are washed in water that is warmer than the eggs themselves. If they are washed in water that is cooler than the egg, the inside will shrink slightly and create a vacuum. The egg would absorb bacteria from the dirty water through its pores and may contaminate the egg. After being washed, the eggs are air-dried.

When eggs are washed, the protective cuticle, or bloom, is removed. The eggs are oiled with a paraffin-based mineral oil to replace the washed away protective layer. A process called candling is then performed. Candle means to examine an egg in front of a light to observe internal characteristics to determine if the egg is edible or hatchable. The characteristics to look for are the air cell size, yolk shadow position, presence of blood or meat spots, and presence or lack of germ development. The eggs are then culled, removing unsuitable eggs. Eggs are refrigerated and then weighed, graded, and packaged for retail.

Egg Marketing

The egg industry has added value to its product by wise marketing and the use of further processing. Fresh and frozen egg products, such as fried or scrambled eggs, crepes, omelets, souffles, quiche, and French toast offer the consumer more convenience. Also, the egg industry provides many fast food restaurants with egg products for breakfast foods.

Marketing strategies have also been effective in the egg market. For example, the American Egg Board has invested in advertising campaigns. This organization promotes the versatility and nutritional benefits of the egg by providing the public with recipes and information. The egg industry also ensures quality by egg grading. Many producers strive for and follow USDA standards because they can sell an egg with the USDA grade symbol at a higher price.

Summary

Major steps in processing poultry include stunning, bleeding, scalding, picking, eviscerating, chilling, candling, grading, packaging and labeling. The industry poultry has added value to its products by further processing meats and eggs into convenient products for the consumer. Processing facilities have strict sanitation requirements and are subject to the HACCP plan that calls for scientific testing for harmful bacteria. Major steps in egg processing include collecting, washing, oiling, and packaging. Eggs are marketed by the American Egg Board with creative advertisements to promote the versatility and nutritional benefits of eggs.

Credits

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