Background

America's farmers and ranchers strive to provide safe, high-quality beef for consumers at an affordable price while sustaining and improving resources under their care. Beef production methods have evolved to achieve this goal, resulting in new management protocols and technologies that help producers meet consumer demand. Today's family farmers and ranchers combine scientific advances with time-honored family traditions.

The Stages of Beef Production

Beef production begins with a **cow-calf** producer who maintains a breeding herd of cows that raise calves every year. When a calf is born, it weighs 60-100 pounds. Beef calves are weaned at six to 10 months of age when they weigh 450-700 pounds.

Calves leave their ranch or farm of origin between six and 12 months of age. Younger or lighter-weight calves may be sent to a **backgrounder or stocker** who continues to graze them on grass or other forages until they are 12 to 16 months old. Both the cow-calf and stocker segments graze cattle on range and pastureland that is largely unsuitable for crop production. In fact, about 85 percent of U.S. grazing lands are unsuitable for producing crops, and grazing animals on this land more than doubles the area that can be used to produce food.

After the calves are weaned, some are sold at an **auction market.** A cow-calf producer may also choose to keep the best females to add to the breeding herd. Some animals may not be sold at an auction market, and instead will go directly from the cow-calf producer to the feedlot or from the backgrounder/stocker to the feedlot.

Most beef cattle spend approximately four to six months in a **feedlot** just prior to harvest where they are fed a grain-based diet. At the feedlot (also called feedyard), cattle are grouped into pens that provide space for socializing and exercise. They receive feed rations that are balanced by a professional nutritionist. Feedlots employ a consulting veterinarian, and employees monitor the cattle's health and well-being daily. Feedlots are efficient and provide consistent, wholesome and affordable beef using fewer resources. The time cattle spend in a feedlot is often called the "finishing phase."

Some producers choose to finish cattle on grass pasture. The beef derived from these animals is "**grass-finished**" (sometimes called "grass fed"). This is a significantly smaller segment of modern beef production because it requires unique climate conditions, and it takes the cattle longer to reach market weight. All cattle—whether they are grass-finished or finished in a feedlot—spend the majority of their lives grazing on grass pasture.

Once cattle reach market weight—typically 1,200-1,400 pounds and 18-22 months of age—they are sent to a **processing facility** to be harvested. U.S. Department of Agriculture (USDA) inspectors are stationed in all federally inspected packing plants and oversee the implementation of safety, quality and animal welfare standards from the time animals enter the plant until the final beef products are shipped to retail and foodservice establishments for consumers to purchase.

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Healthy Herds

Producers' time-honored traditions of animal care and stewardship always are expanding to include the most recent science-based advancements that keep cattle healthy and the beef supply safe. Advancements in animal production practices mean that cattle can be raised much more efficiently than in the past.

Animal health and well-being are top priorities for livestock producers across the country. Without healthy animals, we would not have a healthy livestock industry. Producers utilize important tools like vaccines and antimicrobials in conjunction with good management practices to prevent, control and treat disease. Antimicrobials are a cost to production and efforts to decrease disease-related use include vaccines, genetic selection and managing the movement of animals. This allows producers to minimize their use of antimicrobials and provide a higher quality of life for their livestock, while keeping the food supply safe.

Antibiotics have been used to safely prevent and treat illnesses in livestock and poultry for nearly 70 years. Antibiotics are necessary tools to maintain cattle health, treat disease and/or prevent illness from spreading in the herd. Antibiotics used in beef cattle must go through a rigorous scientific testing process to assure animal health and food safety before being approved by the Food and Drug Administration (FDA).

Since 1987, the beef industry's guidelines for "Judicious Use of Antimicrobials" specifically have outlined the appropriate use of antibiotics. According to these guidelines, beef producers must avoid using antibiotics that are important in human medicine and treat the fewest number of animals possible. Additionally, antibiotic use should be limited to prevent or control disease and should not be used if the primary intent is to improve performance. By law, no meat sold in the United States is allowed to contain antibiotic residues that violate FDA standards.

Some producers choose to administer hormone-containing growth promotants to improve cattle's ability to gain more lean muscle from less feed. Like other animal production technologies, growth promotants are rigorously tested through a comprehensive, multi-step scientific review by FDA to ensure animal health and human food safety. Under the Federal Meat Inspection Act, USDA tests for residues of growth promoting products at harvest that exceed FDA-established safe levels. USDA has conducted testing since 1967 and in 2005, the most current year data, reported **zero residue violations** for growth promotants in cattle.

Improvements in cattle production technologies have helped provide consumers with the lean beef they demand while using fewer resources. A University of Minnesota Extension Service study found that growth promotants improve cattle growth rates and feed conversion efficiency, increasing annual U.S. beef production by more than 700 million pounds while saving more than 6 billion pounds of feed.

Animal Welfare

Proper animal care is the responsibility of everyone in the beef production chain. Beef producers recognize ensuring animal well-being is the right thing to do and critical to their operation's success.

The Beef Quality Assurance (BQA) program provides guidelines for responsible beef production (**www.BQA.org**). BQA influences the management practices of producers accounting for more than 90 percent of U.S. cattle.

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