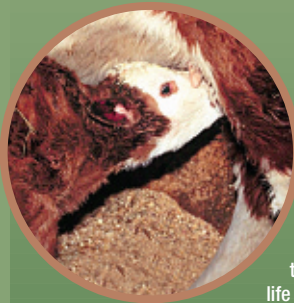


# Beef – From Pasture to Plate

## Birth



Cattle have a nine-month gestation period, and while calves can be born year round, many ranchers plan calving for the spring of each year. Especially in colder climates, this ensures that calves are strong enough to handle harsh winters. Calves remain with their mothers for the first several months of life on farms or ranches.

## Cow-Calf Operation

Most beef calves are born on cow-calf operations. These are farms and ranches like those you may see along highways and country roads. During this stage, cattle graze in herds on large pastures within sight of their mothers.



Most cattle farms and ranches are family owned and operated and daily life revolves around caring for the animals, pastures, barns and fence-lines. For many producers, raising cattle is a family tradition passed down through generations.

## Weaning

As calves reach six to 10 months of age, they are weaned from their mothers. Weaned male calves (steers) may graze until about one year old (yearlings) and then be sold to a cattle feeder or a stocker/backgrounder who will prepare the animal for the feedlot.

## Livestock Auction Markets

Most cow-calf operators sell their weaned calves to the highest bidder at livestock auction markets, where calves are bought by cattle producers called stockers and backgrounders. There are approximately 815 fixed auction facilities throughout rural America, according to the U.S. Department of Agriculture (USDA).



## Arrival at the Feedlot

When cattle arrive at a feedlot, they are carefully unloaded and led through a processing barn, where they are tagged for identification purposes, vaccinated and entered into the operation's record-keeping system. Before being grouped into pens by age, the animals may receive a growth promotant.



Most growth promotants are administered in the form of a small pellet placed under the skin behind an animal's ear. It releases tiny amounts of hormone and safely dissolves as the treatment is completed. Most growth promotants contain naturally occurring hormones like estrogen. Growth promoting hormones help cattle build more muscle – producing a leaner beef product for consumers. Growth promoting products are approved by the Food and Drug Administration (FDA) after rigorous scientific tests, similar to those required for human medications, and their use in cattle production has been declared safe by scientific organizations worldwide.

## Stockers and Backgrounding

As weanlings, cattle may be transferred from cow-calf operations to backgrounders or stockers. Like cow-calf operations, these are mostly family-owned ranches and farms where cattle graze on pasture or start receiving grain to supplement their diets. Once most cattle reach approximately 12-18 months of age, they are taken to a feedlot.



## Life at the Feedlot

Feedlots look different than cow-calf and backgrounding operations because cattle do not graze on pasture. Rather, they typically are separated into herds of 100 animals and live in pens that allow about 125 to 250 square feet of room per animal. Cattle usually spend four to six months in a feedlot, during which they are fed a scientifically formulated ration averaging 70 percent to 90 percent grain, and have constant access to water.

Environmental factors such as water quality, air quality and land utilization are monitored and managed in feedlots daily. Operators are not only responsible for constantly monitoring the health and well-being of cattle, but also for protecting the environment. In fact, most large feedlots have environmental engineers on staff or on contract to ensure the operation is in compliance with the strict Environmental Protection Agency regulations that govern concentrated animal feeding operations.



## Animal Care at the Feedlot

Cattle can become ill at the feedlot because of changes in weather and geographic location, and mingling with other cattle that come from a variety of operations. For this reason, feedlot veterinarians may take preventive measures and give cattle vitamin supplements, vaccinations and parasite treatments to maintain their health. Similar to other stages of production, sick cattle may be given antibiotics and moved into a separate hospital pen away from their herdmates for treatment. This prevents the spread of illness and allows feedlot operators to closely monitor the animal's health.

## Transportation

Once cattle have reached 18 to 22 months old or weigh between 1,100 and 1,250 pounds, they are typically considered "finished" and are transported to packing plants to be slaughtered and processed. Precautions during transportation minimize stress and injury to the animals. Cattle are carefully loaded and unloaded into trailers that are specially designed to avoid injury and strain.



## Supermarkets and Restaurants

Retailers and foodservice operators sell beef products in supermarkets and restaurants, where steps are taken to ensure the final safety and quality of the products. Ultimately, consumers dictate the actions of the beef production chain, from pasture to plate, by determining what kinds of beef they will buy and at what price.



Beef producers read demand signals from the meat case and customers throughout the production chain. For instance, beef cattle are now much leaner than just a decade ago as a result of the consumer demand for products with less fat. Consequently, there are now 29 cuts of beef that meet government guidelines for lean, such as the tenderloin, sirloin and 95% lean ground beef.

America's beef producers are proud to offer a variety of beef choices to meet the changing lifestyles and nutritional needs of consumers. Beef producers have adapted practices to provide consumers with the grain-fed, grass-finished, certified organic or natural beef they desire. While each kind of beef offers specific value to consumers, all beef is nutritious and safe.

## Fabrication

When beef leaves the packing plant, it is in the form of large sections, either primals, like the chuck, round rib and loin, or subprimals which are smaller cuts of meat such as the bottom round, top round, eye round and round tip. Some plants sell subprimals to meat processing facilities where workers skillfully break them down into individual steaks and roasts that are sent to supermarkets and restaurants.

## Safety Inspection/ Federal Regulations

There are a number of interventions in place that decrease and attempt to eliminate potential food safety concerns at packing plants. Because this is the last stage before beef is packaged, plants use multiple interventions to ensure that products are safe.

USDA inspectors oversee the slaughter practices, food safety interventions and carcass grading that take place at packing plants. To grade carcasses, inspectors evaluate characteristics including marbling (distribution of internal flecks of fat, contributing to tenderness and taste) and the age of the animal.



## Arriving at the Packing Plant

When cattle arrive at packing plants, they are moved inside in a quiet and orderly manner. There is little excess movement or unnecessary noise so cattle are not unduly stressed. Packing plant technicians then use a mechanical stunning device to quickly and effectively render animals unconscious.

The slaughter process has evolved over the years based on scientific research to ensure both humane animal treatment and the production of safe food. The Humane Slaughter Act (passed in 1958 and updated in 1978 and 2002) dictates strict animal handling and slaughtering standards for packing plants. These facilities are under continuous federal inspection, with Food Safety and Inspection Service (FSIS) personnel present in plants to ensure compliance with all regulations.







# History of the Beef Industry

**1493**  
Christopher Columbus introduces cattle to the Western Hemisphere on his second voyage to the New World.

**1519**  
Hernando Cortez brings first cattle to North American continent, setting up ranches in Mexico. Often the cattle roamed wild and later came to the United States by way of Texas and California. Around the same time, a cattle industry is also emerging in Florida.

**1620**  
An estimated 500-head herd of cattle is established in Virginia; by 1639, there are 30,000.

**1625**  
Cattle from England and northern Europe begin arriving in New York.

**1779**  
First cattle trail in North America, from San Antonio, Texas to the Louisiana Territory.

**1805**  
First recorded Northern cattle drive from Circleville, Ohio. Western farmers seek livestock markets in populous East.

**1810**  
First State Fair held in Pittsfield, Massachusetts. It is called the Berkshire Cattle Fair.

**1852**  
Railroads reach Chicago from East, adding to the westward spread of livestock raising and feeding. Five different railroads establish their own stockyards there.

**1862**  
President Abraham Lincoln creates the U.S. Department of Agriculture (USDA) to administer agricultural

programs. It is called the "people's department" because farmers make up more than half of the population.

**1865**  
Union Stockyards in Chicago become hub of livestock industry.

**1867**  
Kansas Pacific Railroad reaches Abilene, Kansas, establishing a gateway for Texas trail herds to reach eastern consumer markets. Cattle drives begin. First shipment of cattle from Abilene to Chicago.

**1875**  
Chilled beef is transported from New York to Europe in refrigerated ships, followed by a frozen shipment to England the following year.

**1878**  
Meat packer Gustavus Swift perfects the refrigerated railcar, greatly expanding the market for perishable products.

**1880**  
Western cattle boom begins.

**1883**  
First national gathering of cattlemen called by U.S. Commissioner of Agriculture, George Loring. A permanent organization, The National Cattle Growers Association, is established at a second meeting in 1884.

**1884**  
Along with the establishment of the Bureau of Animal Industry, the Animal and Plant Inspection Service is established as part of USDA.

**1886-87**  
Worst ever recorded winter for cattle producers, putting many western producers out of business.

**1900**  
First International Livestock Exposition in Chicago.

**1904**  
First livestock auction market opened in Union, Iowa. By 1952, there are 2,500 public auctions.

**1904**  
A reporter for the *New York Tribune* writes from the St. Louis World's Fair of a new sandwich called a hamburger. Fletcher Davis is credited with inventing the hamburger, which consisted of fried ground beef patties served with hot mustard and sliced onions on homemade bread.

**1906**  
U.S. Food and Drug Administration established to ensure wholesome and truthfully labeled foods; first Food Administrator, Herbert C. Hoover, appointed in 1917.

**1906**  
Upton Sinclair writes "The Jungle"; leads to Meat Inspection Act.

**1911**  
First motor truck delivery of livestock reaches Indianapolis. Prior to that, all livestock were transported via railroad.

**1922**  
National Live Stock and Meat Board ("Meat Board") is founded to conduct meat promotion, research and education efforts funded by a voluntary, per-head checkoff fee collected from livestock producers and voluntarily matched by packers.

**1922**  
First voluntary checkoff deductions of 5 cents per carload (25 head of cattle per car) are requested by the Meat Board.

**1926**  
USDA introduces beef grading standards so packing plants can better meet customer needs for different beef qualities.

**1930**  
Voluntary checkoff deduction rate increases to 25 cents per carload (or 1 cent per head).

**1933**  
First Farm Bill, called the "Agricultural Adjustment Act" passed by Congress to establish and maintain a balance between the production and consumption of agricultural commodities.

**1934**  
Taylor Grazing Act passed to regulate the use of public lands for grazing of cattle and sheep and prevent overgrazing, by leasing public lands to ranchers.

**1941-1946**  
War time price controls are placed on beef; a large "black market" emerges.

**1945**  
"Nutrient Requirements of Beef Cattle" is published providing cattle producers with a guide for feeding cattle.

**1947**  
Beef consumption reaches the highest level in 40 years, with prices 125 percent greater than in 1941. Cattle producers struggle to keep up with new demand for beef.

**1953**  
Voluntary checkoff deduction rate increases to 2 cents per head.

**1953**  
"Great Cattle Bust" begins, brought on by drought, grasshoppers and fire. Continues until 1957.

**1958**  
Humane Slaughter Act passed to govern livestock handling procedures in meat packing plants.

**1960**  
Transportation shifts from rail to truck; slaughter operations built near feedyards and moved from centralized city stockyards.

**1962**  
Voluntary checkoff deduction rate increases to 3 cents per head.

**1964**  
Meat Import Act passed; formula limits imports to 6.7 percent of domestic production.

**1967**  
Boxed beef is introduced providing more conveniently sized cuts for retailers and butchers.

**1968**  
Cattle-Fax is established to provide cattle and beef industry statistics and market and economic analysis.

**1973**  
Texas Cattle Feeders Association proposes uniform Beef Checkoff Program. Task force appointed to study proposal.

**1978**  
The Humane Slaughter Act of 1978 dictates strict animal handling and slaughter practices which are closely monitored by government inspectors.

**1985**  
Farm Bill creates Beef Promotion and Research Act establishing the Beef Checkoff Program and enabling cattle producers to create, finance and carry out a coordinated program of research, industry and

consumer information and promotion. Beef checkoff collections of \$1 per head begin.

**1987**  
Beef Quality Assurance program officially started to help beef producers meet customer expectations for safety and quality.

**1987**  
American Heart Association endorses beef as a healthy food.

**1987**  
Cattle first sold via satellite in "video auctions."

**1988**  
Beef producers approve continuation of The Beef Checkoff in a national referendum.

**1989**  
Veal Quality Assurance program initiated.

**1991**  
Beef industry's Environmental Stewardship Award Program (ESAP) established to provide opportunity to showcase the environmental stewardship and profitable business practices that exist together on progressive farms and ranches.

**1994**  
USDA mandates safe food handling instructions on labels of fresh and frozen meat and poultry items packaged in retail supermarkets.

**1994**  
Beef industry Blue Ribbon Task Force reports on ways to eliminate *E. coli* 0157:H7 in beef.

**1996**  
Beef Quality Assurance Advisory Board develops first structured animal care guidelines known as the "Producer Code of Cattle Care."

**1996**  
National Cattlemen's Beef Association (NCBA) is formed from a merger of the National Cattlemen's Association and the Beef Industry Council of the National Live Stock and Meat Board.

**1997**  
Beef producers join with government and other industry groups to fund launch of the Partnership for Food Safety Education and the consumer program, Fight BAC!

**1997**  
Beef Industry Food Safety Council (BIFSCO) formed to develop industry-wide, science-based strategies for addressing *E. coli*.

**1998**  
Meat packing facilities implement Food and Drug Administration Hazard Analysis and Critical Control Point (HACCP) system aimed at preventing hazards that could cause foodborne illness. The HACCP principles apply science-based means of assuring food safety from harvest to consumption.

**1999**  
Parity study published in *Archives of Internal Medicine* finds beef works as well as chicken in a cholesterol-lowering diet.

**2000**  
Muscle-profiling study findings presented to industry to help find new, convenient ways of preparing the 39 muscles from the chuck and the round detailed in study.

**2001**  
Flat Iron Steak introduced after research on undervalued cuts of beef finds new ways to cut the steaks from the chuck.

**2002**  
USDA national standards for organically grown agriculture products implemented.

**2002**  
Task force organized to develop a plan of work for creating a national animal identification program.

**2003**  
Bovine genome sequencing project initiated. Researchers announce first phase of sequencing work complete in 2004.

**2003**  
Industry leaders approve expanded version of "Guidelines for the Care and Handling of Cattle."

**2004**  
Carcass Merit project completed, validating DNA markers for economically important carcass and consumer satisfaction traits.

**2005**  
USDA announces *E. coli* 0157:H7 prevalence dropped by more than 80 percent in four years.

**2005**  
Nutrient database shows 29 cuts of beef meet government guidelines for lean.

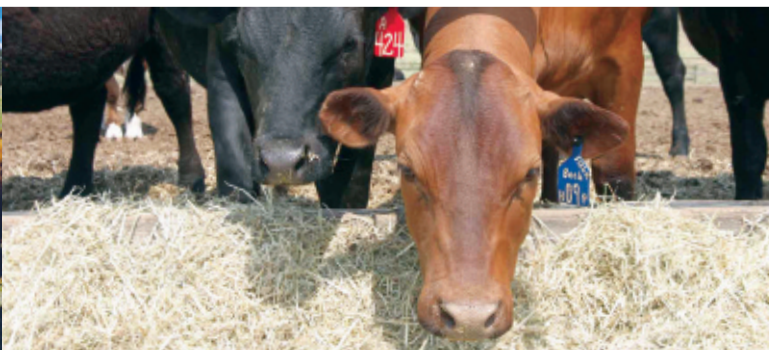
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1900 1906 1910 1922

1926 1930 1941-46 1953

1958 1962 1968 1978 1985 1989 1991 1994

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