

Introduction to the Beef Industry

The production of beef cattle accounts for nearly half of all livestock receipts in the United States. Beef production takes place nationwide, with many animals raised in the Midwest, Southwest, and the western plains. The United States ranks third in beef numbers, with India and the former Soviet Union ranking first and second, respectively.

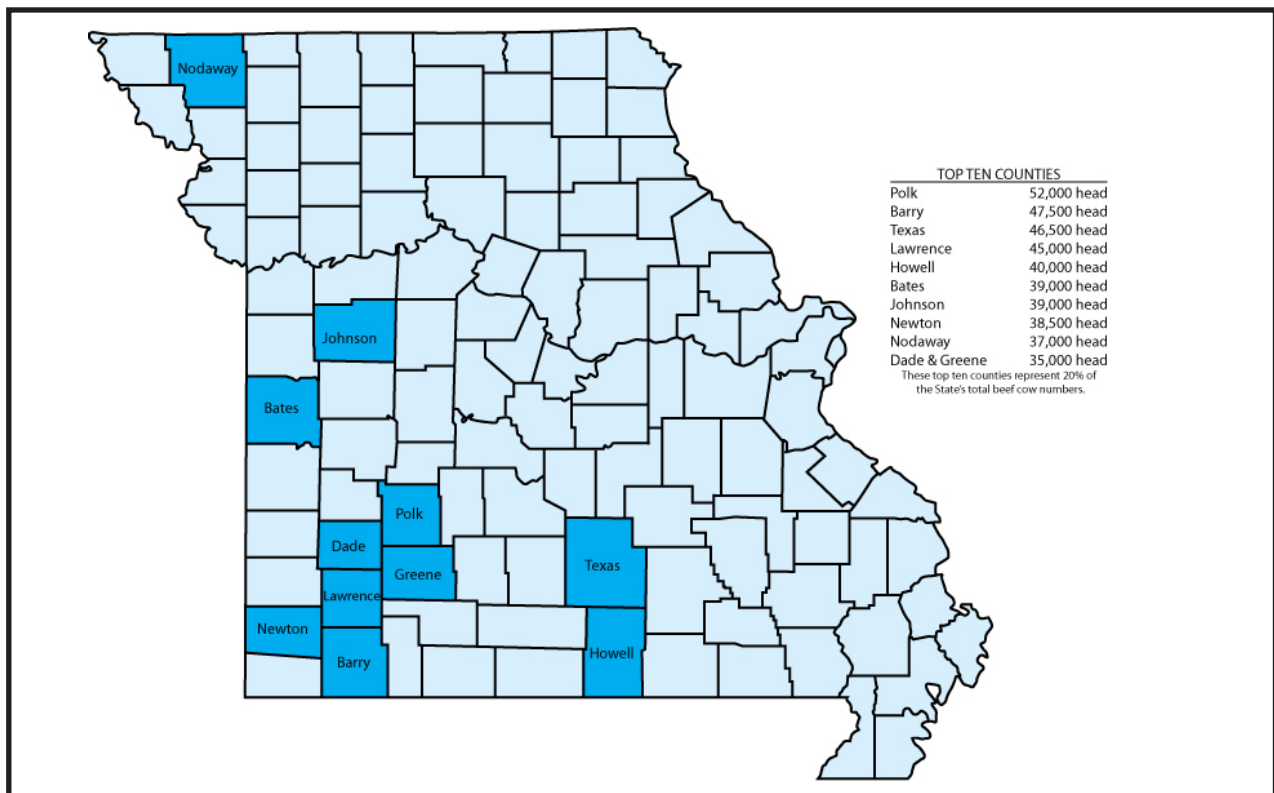
Beef cattle production is increasingly popular in the United States. The main reason for its popularity is that beef cattle can use forages as their major feed source, since they are ruminants with a four-part stomach that allows them to digest large amounts of roughage. Millions of acres nationwide cannot be used for crop production because of poor soil type, steep slope, or lack of suitable rainfall. However, the land can support grass, which in turn can be used by beef cattle. Producers market their forage crops through the sale of cattle. Also, beef cattle generally require less labor than other animals and have fewer losses due to deaths.

The production of beef cattle is not without its problems. It can be a high-risk occupation, especially when grain prices are extremely high and market prices for cattle are low. Beef cattle are also not as efficient as other animals in converting feed to meat. Average feed conversion ranges from 6:1 to 9:1, which means it takes six to nine pounds of feed for the animal to gain one pound of weight.

Beef Production in Missouri

Missouri is among the nation's leaders in beef cattle production. Missouri ranked second nationally in total number of beef cows, with more than 7 percent of U.S. cattle operations found within the state. More than 4.5 million head of cattle and calves are inventoried in Missouri each year. The state continues to rank highly in the production of purebred beef cattle; several nationally recognized herds are located in Missouri. Beef production is scattered statewide, although most beef cows are in the southwestern part of the state (see Figure 1.1). As of January 1, 2004, Polk County ranked first in beef cow numbers with 52,000 head.

Figure 1.1 - Beef Cow Numbers in Missouri By County



Introduction to Beef Production

Beef Facts

Birth Weight - 60 to 100 pounds

Body temperature - 101.5°F (average)

Feed to gain ratio - 6:1 to 9:1

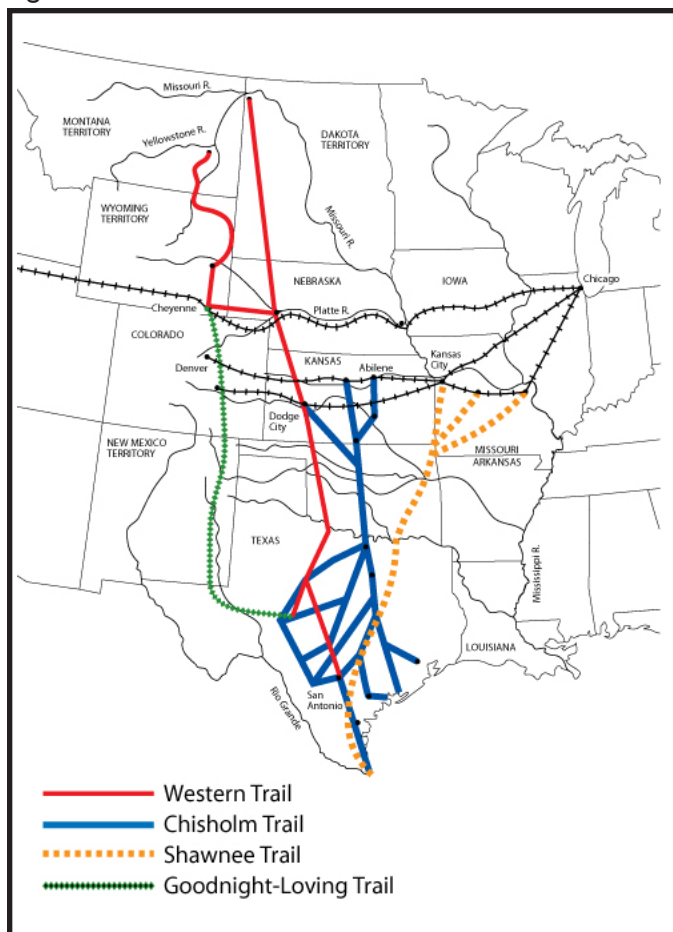
Weaning weight - 400 to 600 pounds

Slaughter weight - 1,000 to 1,350 pounds

The History of Beef Cattle in the United States

Beef cattle are not native to the United States. Christopher Columbus brought the first cattle to the New World on his second voyage. The Spanish introduced the Longhorn breed into Mexico in the early 1500s. Europeans who settled in what would one day become the United States brought cattle with them as well. The Jamestown settlers, for example, brought many cattle to the United States in 1611. The first known purebred breed of cattle to be imported were Shorthorns, which were brought to the United States during the 1780s. As pioneers traveled westward to settle new land, they took cattle with them.

Figure 1.2 - Cattle Drive Trails



After the Civil War, cattle drives from Texas to cow towns like Kansas City and Abilene took place on famous trails such as the Shawnee, Chisholm, and Western trails, shown in Figure 1.2. The Longhorn cattle brought north in these drives were shipped by railroad to the eastern United States, where most of the people lived.

The reduction of buffalo herds and the end of the clashes with Native Americans helped open the Great Plains for beef production. Cattle production flourished west of the Mississippi River because the vast grasslands of the Great Plains provided good grazing. The fencing of the West with barbed wire broke up the open grasslands and allowed herds to be improved for more efficient production by producers who could manage them more closely. This emphasis on improved herds and production eventually led to the importation of many modern beef breeds, such as Simmentals and Limousins, in the 1960s.

Terminology

The beef industry has a unique language all its own. Individuals involved with beef cattle should understand and use this terminology correctly. The following are some commonly used terms.

Steer - Castrated male.

Heifer - Young female that has not given birth to a calf.

Bull - Mature male.

Cow - Female that has given birth to a calf.

Polled - Genetically without horns.

Feeder calf - Term used for a male or female animal from weaning until the animal is placed in a feedlot.

Replacement cattle - Bulls and heifers that will be used to add to existing breeding stock.

Slaughter cattle - Steers and heifers between 1,000 and 1,350 pounds that will be processed into beef.

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Segments of the Beef Industry

The beef industry can generally be divided into four major segments: purebred breeders, cow/calf producers, backgrounders, and feedlot operators. Purebred producers specialize in the production of genetically superior females and herd bulls that commercial cow/calf producers will ultimately use to improve their stock. Cow/calf producers generate income by raising steers and heifers to sell. They generally breed cows to calve in the early spring or early fall and wean the calves at five to seven months of age. Cow/calf producers may then sell the calves to a backgrounder or a feedlot operator as feeder calves. Backgrounding operations allow the weaned calves to graze on forages, usually supplemented with small amounts of grain, to produce cattle that are ready to put on full feed in a feedlot. The calves are generally purchased weighing 400 to 600 pounds and backgrounded until they weigh 700 to 900 pounds. Feedlot operators purchase calves from either cow/calf producers or backgrounding operations and feed them until they weigh between 1,000 and 1,350 pounds and are ready for slaughter. Cow/calf producers and backgrounders also have the option of retaining ownership of the cattle through the feedlot and allowing the feedlot operator to custom feed the animals. Custom feeding refers to the practice of feeding the cattle for the owner and charging a certain price per pound of gain as well as other fees. When they are ready for slaughter, the animals are sold to a packer to be processed into beef.

Careers in the Beef Industry

The career possibilities relating to beef cattle production are widely varied. Becoming a beef cattle producer is only one option available to individuals interested in the beef industry. For example, ranch managers are in charge of a cattle operation and must make day-to-day decisions about the operation of the ranch. Artificial insemination technicians perform artificial insemination on beef cattle for producers. Livestock order buyers buy cattle off the farm or at auction markets for other people, who provide the funds for the purchase. Veterinarians help maintain healthy and productive animals and respond to health emergencies. Pharmaceutical sales representatives sell livestock vaccines to producers. Equipment sales and service representatives sell and service equipment used by producers for cattle production. Nutritionists help formulate feeding programs for beef cattle. Feedlot

operators manage all aspects of the process of feeding cattle for slaughter. Livestock extension specialists provide producers with support and information concerning all aspects of beef production from marketing to herd health. Biotechnology researchers work to find cures for diseases and innovative means to improve production.

Summary

Beef cattle are extremely important to agriculture in Missouri and the nation. The state ranks second nationally in beef cow numbers. In spite of their importance today, cattle are not native to the United States. The early explorers and settlers brought them to the continent. In the nineteenth century, beef production became a major industry on the western grasslands of the United States. Beef production has evolved since then into an industry consisting of four sectors: purebred breeders, cow/calf producers, backgrounders, and feedlot operators. Many career opportunities currently exist in the industry.

Credits

Missouri Farm Facts. Columbia: Missouri Agricultural Statistics Service in cooperation with the Missouri Department of Agriculture and the U.S. Department of Agriculture, 2004.

Baker, Meelee, and Robert E. Mikesell. *Animal Science Biology and Technology.* Danville, Ill.: Interstate Publishers, Inc., 1996.

Gillespie, James R. *Modern Livestock and Poultry Production.* 5th ed. Albany: Delmar, 1997.

Lee, Jasper S., et al. *Introduction to Livestock and Poultry Production.* Danville, Ill.: Interstate Publishers, Inc., 1996.

Taylor, Robert E. *Beef Production and the Beef Industry.* Minneapolis: Burgess Publishing Company, 1984.

Taylor, Robert E., and Ralph Bogart. *Scientific Farm Animal Production.* 3rd ed. New York City: Macmillan Publishing, 1988.

Thomas, Verl M. *Beef Cattle Production: An Integrated Approach.* Philadelphia: Lea and Febiger, 1963.