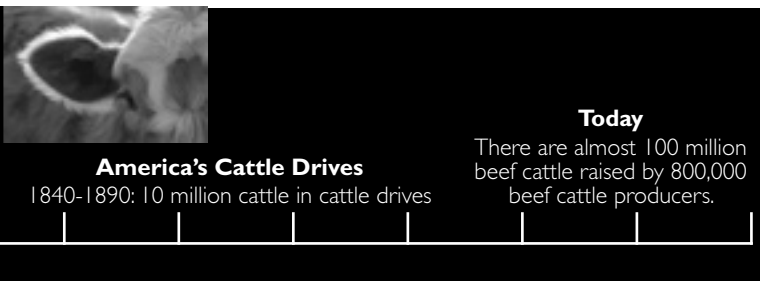
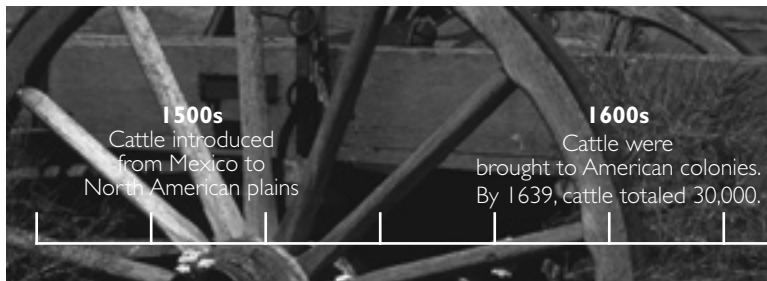


Beef In Brief

How America's Cattle Serve the World





A Long and Proud History

The earliest introduction of beef cattle to the country was in the 1500s via Mexico. These cattle came north to what is now the southern United States, and some of their relatives are still around today.

Domesticated cattle came directly to this country in the early 1600s. About 500 had become established in Virginia by 1620, and there were an estimated 30,000 by 1639.

Today there are almost 100 million beef animals and 800,000 beef cattle producers in the United States. Most cattle operations are family-owned. According to the U.S. Department of Agriculture, cattle produce about 25 billion pounds of meat per year. The combined value of the cattle and beef industry is \$200 billion per year.

In fact, the beef industry is the single largest segment of U.S. agriculture. It touches the livelihoods of many Americans, from the producers who raise the animals to the plant workers who process it, to the truck drivers who deliver it to the restaurant operators and supermarket managers who sell it. And in the end it benefits the people who eat it, providing a safe, wholesome and nutritious product that fuels our bodies.

Each year, Americans will eat an average of about 65 pounds of beef. This is equivalent to 2.8 ounces each day, well within the government's recommended daily servings from the meat and beans group.



What Is Beef?

Beef comes from amazing animals: cattle. The cow is an amazing animal because it eats grass and turns it into highly nutritious beef, which people enjoy.

A cow can do this because it's a ruminant. That means it has four chambers in its stomach rather than just one, like you have. In its four-chambered stomach it can "ferment" grass, which is mostly cellulose, into protein and fat. Beef is the muscle that's produced from this process.

Cattle live the majority of their lives in pastures, where they eat grass and grow. Many of the cattle used for beef will be taken out of the pasture when they're 12- to 18-months old and fed a grain-based diet for about four to five months. The feed helps them grow faster and produces the tasty, tender and juicy beef we've come to expect.

Only about half of the animal becomes beef, however. The rest also plays important roles in our lives. Hundreds of products other than beef are made from cattle. These goods are called by-products. We know that hides produce leather; one hide can make about 144 baseballs. But the beef industry makes many other contributions to the quality of American life. The 50 percent of the animal that does not become beef is used in many consumer products such as china, special glue, photographic film, car tires, shampoo and soap. Many pharmaceuticals, including epinephrine, which is used to treat allergies, and insulin, are cattle by-products. This efficient use of by-products makes beef more affordable.

Beef cattle have played important roles in the lives of people in this country for more than 400 years. They serve the well-being of humans by providing nutritious food and many other products to enhance our way of life.

Nutritious Beef

Beef is known for contributing protein to the diet but you may not know what makes beef protein so important. Proteins are made up of amino acids, and we need 20 for good health. Nine of them are considered essential because the body can only get them from food.

Beef is a complete protein because it contains all nine essential amino acids in proportions most useful to the body. Most plant proteins are not considered complete proteins because they are low in one or more of the essential amino acids.

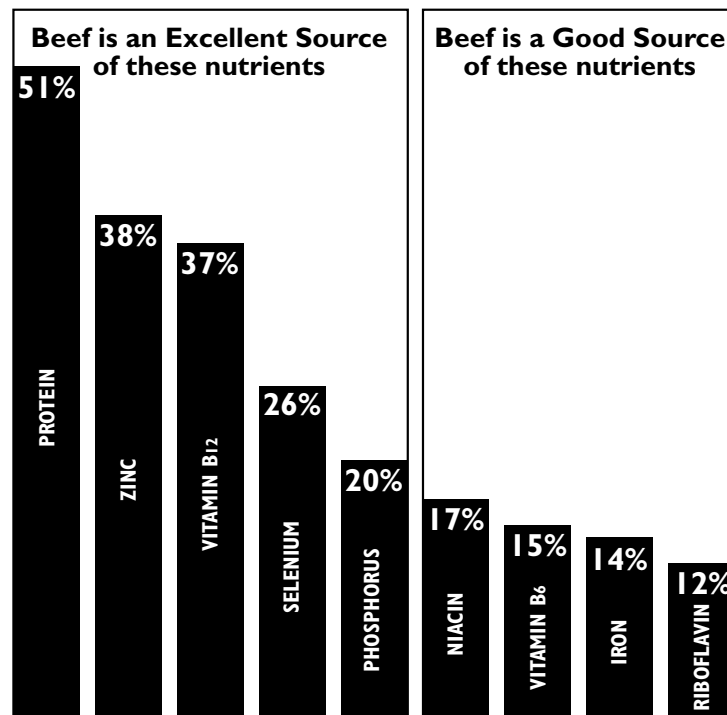
But protein is only one piece of beef's nutrition puzzle. Beef is also a good source of many B-vitamins, iron and zinc – all of which are crucial to human health. Beef is "naturally nutrient-rich," meaning it has many essential nutrients with relatively few calories, making it an important part of a healthy diet.

Over the past 20 years the beef industry has made beef leaner than ever. Today, there are 29 cuts of beef that meet the U.S. government definition of "lean." When comparing 3-ounce cooked servings, these 29 cuts have, on average, only about 1 gram more saturated fat than a skinless chicken breast.

All fat isn't bad. Fat is an important nutrient that keeps your body working properly. A common misunderstanding is that animal fats are all saturated. In fact, less than half of beef's fat is saturated. About half the fat in beef is monounsaturated, the same type found in olive oil and promoted for its heart-healthy properties. Beef also has an important fatty acid called conjugated linoleic acid (CLA), which some studies have shown to be protective against cancer, heart disease and diabetes.

Eaten in moderation as part of a balanced, healthy lifestyle, beef is a valuable – and delicious – fuel for the body.

A 3-ounce serving of lean beef (179 calories) contributes less than 10 percent of calories to a 2,000-calorie diet, yet it supplies more than 10 percent of the Daily Value for these essential nutrients.



Source: U.S. Department of Agriculture, Agricultural Research Service, 2005. USDA Nutrient Database for Standard Reference, Release 18. Based on a cooked serving, visible fat trimmed.

SOME TERMINOLOGY:

- Bovine:** The animal classification that includes cattle
- Cattle:** A group of domesticated bovine animals
- Cow:** A mother bovine; sometimes used as the domesticated bovine animal in general
- Bull:** A father bovine
- Heifer:** A female bovine that has not yet had a calf
- Steer:** A neutered male bovine



Safe at Home... and Everywhere Else

Everyone has a responsibility to make sure the food that's grown, served and eaten is safe. In the case of beef, safe food starts with the cattle farmers and ranchers who raise the animals and involves each link of the meat production chain that brings meat to the table.

First, producers must raise their animals properly, giving them appropriate feed and the kind of humane treatment and clean environment that maximizes their growth and health.

Rules about what cattle can be fed prevent occurrences of BSE, or "mad cow disease," in this country. Scientists have said this and other actions soon could make BSE an animal disease for the history books.

The government has a strict approval process for any antibiotics used to treat sick animals. It also regulates the use of growth promotants that develop lean muscle and reduce fat. Regulations assure the use of antibiotics or growth promotants don't result in harm to the animals – or to humans.

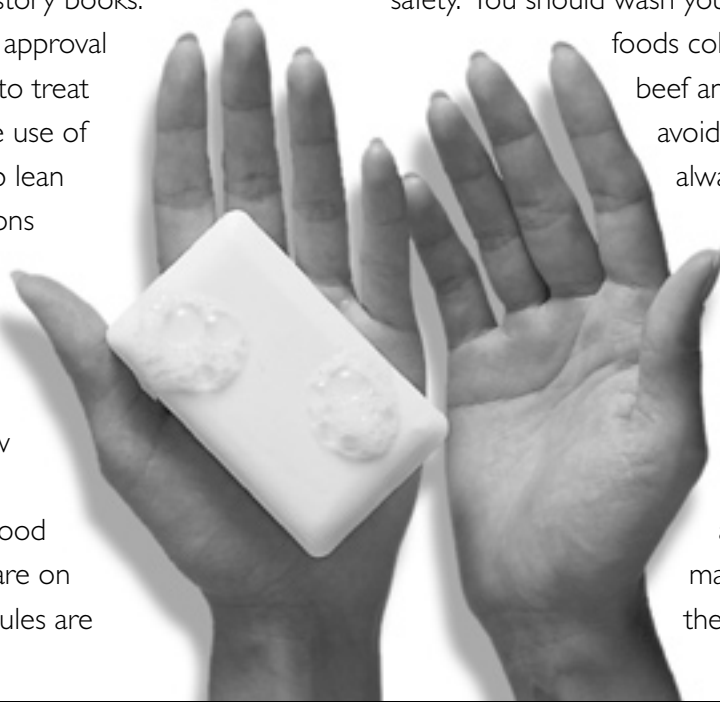
Processing plants must follow strict government guidelines to ensure proper animal care and food safety. Government inspectors are on hand at all times to ensure the rules are followed.

Plant owners and workers follow scientific procedures to make sure meat is safe. Their efforts – with government supervision – have greatly reduced the risk of human exposure to harmful bacteria such as *E. coli* O157:H7, the only strain of *E. coli* harmful to people.

Grocery store and restaurant managers and workers keep their establishments clean and the products at the right temperature. They also make sure employees have good instruction on how to handle the product. Fresh items must be sold promptly, with dates marked on the packages to help consumers know when they should be eaten.

Finally, all of us need to do our part to assure food safety. You should wash your hands and utensils, keep cold foods cold and hot foods hot, and store beef and other food properly. To avoid the risk of cross-contamination, always wash food preparation surfaces and utensils immediately after cutting raw meats and before preparing other food.

Working together, cattle farmers and ranchers, the government and consumers across the country have helped make our beef supply the safest in the world!



The Right Thing

Humans should respect all animals and treat them properly, especially the ones that provide food for us to eat.

People who raise beef cattle are in the business because they love to work on the land and work with the animals. They do tasks that people in the city couldn't imagine doing – getting up at all hours to help animals giving birth, spending cold winter days getting feed and water to animals, tending to

sick cattle, and improving the well-being of their animals in many other ways.

It is more than just a job for beef producers, it's a way of life. They take their responsibilities to animals seriously. They also know that healthy, happy animals produce the kind of beef we all like. They can't afford to do the wrong thing; they want to do the right thing!

Continued on next page



The Right Thing continued

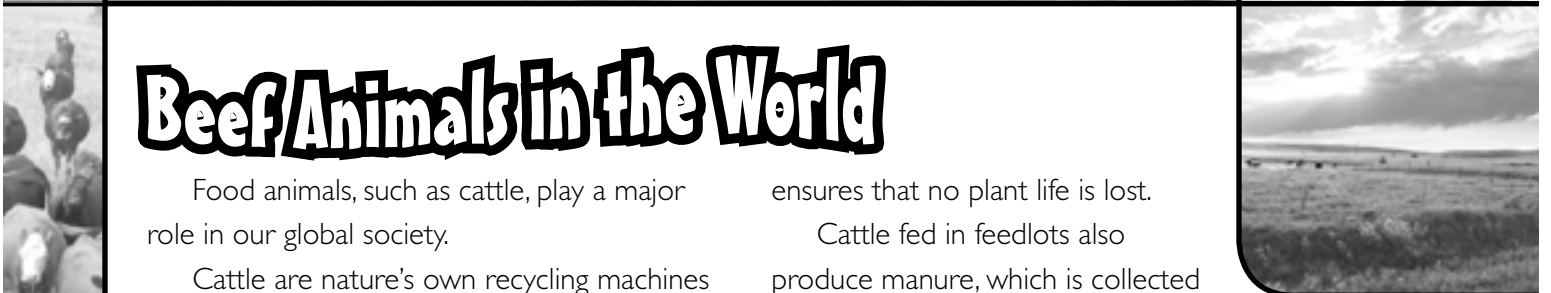
Animals in feedlots also are treated properly. They are fed regularly and always have water available. Cowboys experienced in spotting illness observe cattle every day – sometimes riding through the pens on horseback – and remove sick animals for treatment. Like cattlemen on the range, these producers know it's morally right to care for the animals.

Beef processing plants are built with animal calmness and safety in mind. Animal behavior experts

design pens and walkways to reduce the stress on the cattle.

Respect for the contribution these animals make to the well-being of people is a value shared by everyone involved.

Humane treatment doesn't mean treating the animals like humans. It does mean respecting the needs and well-being of the animals that provide us with the food we eat.



Beef Animals in the World

Food animals, such as cattle, play a major role in our global society.

Cattle are nature's own recycling machines because they convert sunlight, water, and grass into human food. Forty-three percent of the total U.S. land mass is essentially used to grow grass and other leafy vegetation. Though not suitable for human consumption, grass holds the soil in place, keeps the air clean and filters and cleans the water. In addition, cattle graze on grasslands and turn the grass into healthful, delicious beef.

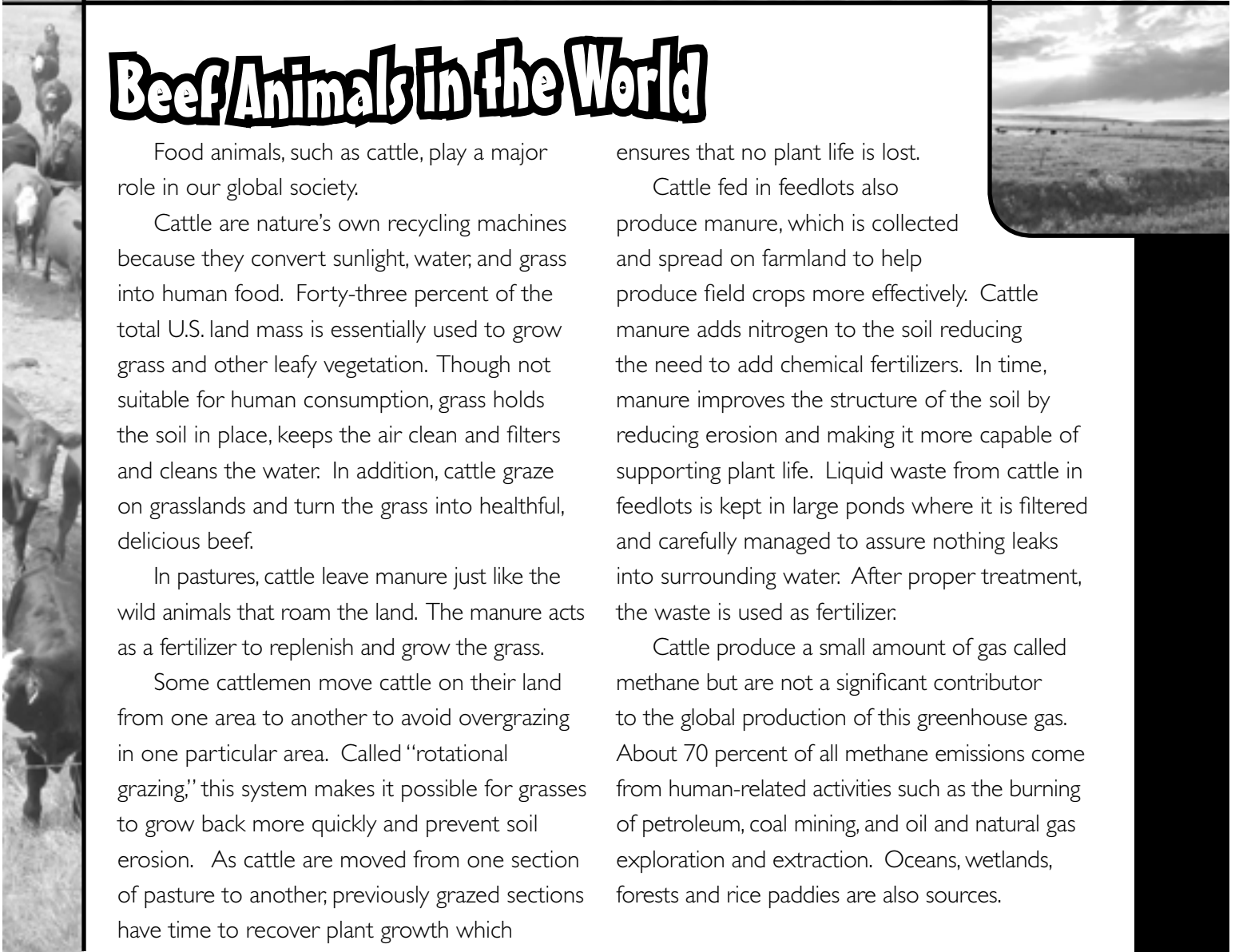
In pastures, cattle leave manure just like the wild animals that roam the land. The manure acts as a fertilizer to replenish and grow the grass.

Some cattlemen move cattle on their land from one area to another to avoid overgrazing in one particular area. Called "rotational grazing," this system makes it possible for grasses to grow back more quickly and prevent soil erosion. As cattle are moved from one section of pasture to another, previously grazed sections have time to recover plant growth which

ensures that no plant life is lost.

Cattle fed in feedlots also produce manure, which is collected and spread on farmland to help produce field crops more effectively. Cattle manure adds nitrogen to the soil reducing the need to add chemical fertilizers. In time, manure improves the structure of the soil by reducing erosion and making it more capable of supporting plant life. Liquid waste from cattle in feedlots is kept in large ponds where it is filtered and carefully managed to assure nothing leaks into surrounding water. After proper treatment, the waste is used as fertilizer.

Cattle produce a small amount of gas called methane but are not a significant contributor to the global production of this greenhouse gas. About 70 percent of all methane emissions come from human-related activities such as the burning of petroleum, coal mining, and oil and natural gas exploration and extraction. Oceans, wetlands, forests and rice paddies are also sources.



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National Cattlemen's Foundation, Building the Beef Industry, 1998.

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U.S. Department of Agriculture, 2002 Census of Agriculture, Web Briefing Rooms, Cattle, Updated Oct. 17, 2005 (<http://www.ers.usda.gov/Briefing/Cattle/Background.htm>).

U.S. Department of Agriculture, Meat Animals Production, Disposition and Income, 2004 Summary, April 2005.

Web Information on Beef and Beef Production

Government Gateway to Food Safety
<http://www.foodsafety.gov/>

General Beef Industry Web Site
www.beef.org

Education Materials for Teachers
www.teachfree.com

Beef Safety
<http://www.beef.org/ncbasafety.aspx>

Beef Safety for Consumers
<http://www.beefitswhatsfordinner.com/aboutbeef/handling.asp>

Food Safety for Kids and Teens
http://www.fsis.usda.gov/food_safety_education/for_kids_&_teens/index.asp

Beef Nutrition for Health Professionals
www.beefnutrition.org

Nutrition for Young People
www.zip4tweens.com

Beef Nutrition for Consumers
<http://www.beefitswhatsfordinner.com>

For more information contact your state beef council, or

National Cattlemen's Beef Association

9110 East Nichols Avenue
Centennial, Colorado 80112



Brought to you by

National Cattlemen's Beef Association on behalf of The Beef Checkoff

Key for the Activity Sheets

What is Beef Activity Page

Hey! Wait up! You've got to hear this. I had the best steak last night I've ever seen. It was cooked just right, too. It was the best piece of meat I've ever had!

Nutritious Beef Activity Page

There aren't many foods as excellent as beef when it comes to nutrition. I get excited when somebody asks me to his home to relax and eat healthy foods like beef. That's nice because beef is great and has terrific flavor.

Replacement words for sweet, tight and wicked may be interchanged.

Safe at Home... and Everywhere Else Activity Page

Protecting human health is of the utmost importance. It's a complicated topic, but one we, as a society, must continually manage. How food animals are raised is carefully controlled, and the products used are scientifically tested, regulated and approved to ensure the animal's well being. Animal production practices are based upon years of research and knowledge. Today, however, we can be sure of this: Beef producers care about the health of their animals and the health of people eating the beef that comes from their animals.

Optional Math Activity Answers:

- 894,737
- 1,496
- 344,000
- steak (from a steer given hormones)

The Right Thing Activity Page

Cattlemen recognize the importance of treating animals in their care well, whether they live in California, Maine or points in between. They believe in doing the right thing when it comes to animal welfare. United States citizens can be proud, I think, of the people who raise animals for food.

Beef Animals in the World Activity Page

Janet wrote a good paper yesterday. It tells why cattle are kept in feedlots and why their diet is important. She said cattle are important because they eat grass that humans can't eat. She said they are kept in feedlots partly to change their diet. What cattle eat can change the taste of the beef.

Crossword Puzzle Answers

A	B	O	V	E		C	A	L	F			
B	A	D				C	O	O	L	A	G	
U	S	E	D	C	A	R	L	O	T		U	
S	I					L	U	N	A	R	M	
E	N	V	I	R	O	N	M	E	N	T		
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E	R		E			S	C	I	E	N	C	E
L	E	A	F	Y			E	L	F		A	D