

Beef

Cattle give us many things – everything from hamburgers to medicine, and steak to shampoo. Let's learn more about beef!



BEEF COW AND CALF

Beef Production

There are about 1.85 million beef cattle in North Dakota. That's almost 2½ cattle for every person in the state.

One 1,350-pound beef animal produces enough meat to make more than 3,000 quarter-pound hamburgers. If you eat one hamburger every day, that would be enough to last almost 9 years!

A calf is a young male or female beef animal less than one year of age. A heifer is a young female beef animal that hasn't yet given birth to her first calf.

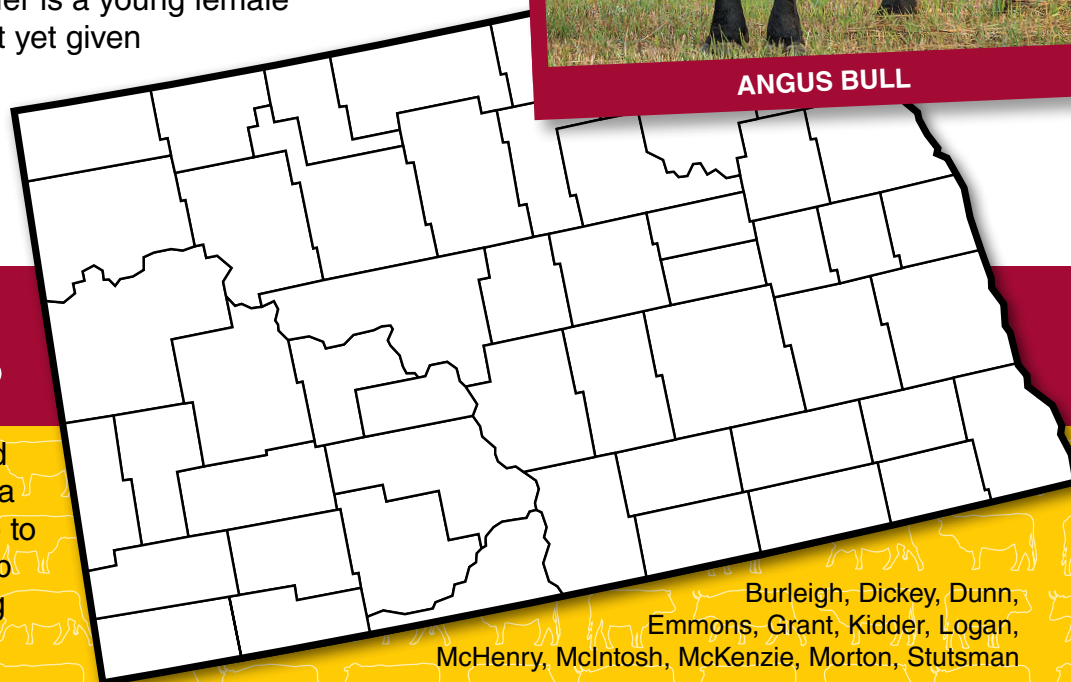
A cow is a beef "mother" and bull a beef "father."



ANGUS BULL

Where's the Beef?

Beef cattle are raised in every North Dakota county. Use this map to identify the state's top beef-cattle-producing counties.



Burleigh, Dickey, Dunn, Emmons, Grant, Kidder, Logan, McHenry, McIntosh, McKenzie, Morton, Stutsman

Beef in North Dakota: Then and Now

Use these words to fill in the blanks:
identified, computers and apps, Marquis,
refrigerated, Medora, auctions, market, internet

Then...

In April 1883, the Marquis de Mores, a 24-year-old French nobleman, founded the town of Medora, Dakota Territory. He built a beef packing plant, a brick plant, a hotel, stores and a large home (the Chateau de Mores) overlooking his new town.

The 1. _____ was probably ahead of his time. His dream was to ship meat to large cities in 2. _____ train cars instead of herding live animals in cattle drives. But the effort wasn't profitable, and the beef packing plant closed a few years later.

Today, the cowboy traditions started by the Marquis are enjoyed by tourists in 3. _____.

Now...

Technology has changed how ranches operate.

Ranchers use 4. _____ to record information about their cattle. The 5. _____ can provide information to improve their cattle's health and genetics.

Cattle can be 6. _____ electronically. Some ranchers insert small computer chips into cattle's ears that record each animal's life history. Small computers read the chips.

Ranchers also are selling their cattle in new ways. Live 7. _____ may be viewed online so buyers can purchase the cattle without being at the sale. Ranchers can now more easily 8. _____ their cattle around the world.

Where in the World?

Just like poodles and beagles are breeds of dogs, there are many breeds of cattle. Write the letters of the countries on the map where the beef cattle breeds listed to the right originated.

SCOTTISH HIGHLANDER



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Carl Dahlen, NDSU



ANGUS

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HEREFORD

Many cattle are crossbreds, blends of two or more breeds to combine each breed's best traits.

Cattle Breeds and Country of Origin

- A. India — Zebu, Brahman
- B. Japan — Wagyu
- C. Italy — Chianina
- D. Austria — Gelbvieh
- E. England — Hereford
- F. Australia — Murray Grey
- G. Germany — Pinzgauer
- H. Belgium — Belgian Blue
- I. Switzerland — Simmental
- J. France — Charolais, Limousin
- K. Scotland — Angus, Scottish Highlander
- L. U.S. — Brangus, Santa Gertrudis

B e e f P r o c e s s i n g

Meat and More Math

1. A 1,350-pound live steer is to be harvested. Since about 520 pounds of the steer is hide, blood and byproducts, how much will the trimmed carcass weigh?
2. About 34 percent of the carcass will be made into ground beef and stew meat. How many pounds of beef will that be?
3. Sirloin steak usually costs \$7.99 per pound, but it's on sale for \$2.50 off per pound. How much per pound does it cost now?
4. If chuck roast costs \$5.99 per pound, how much does a 3-pound roast cost?
5. Three pounds of ground beef can make how many quarter-pound burgers?
6. Your recipe calls for $1\frac{1}{2}$ pounds of beef, but you're tripling the recipe. How much beef do you need to buy?
7. Ground beef must be cooked to 160 degrees Fahrenheit to be safe. Your food thermometer says the center is now at 135 degrees. How much must the internal temperature rise for the ground beef to be safe to eat?
8. Food often starts growing bacteria if left at room temperature more than 2 hours. Your ground beef casserole was served at 11:45 a.m. By what time must it be refrigerated?
9. If 20 footballs can be made from 1 cowhide, how many footballs can be made from 6 cowhides?
10. Since 144 baseballs can be made from 1 cowhide, how many cowhides would be needed to make 576 baseballs?



BRAHMAN

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Sustainability on the Ranch – Crossword Puzzle

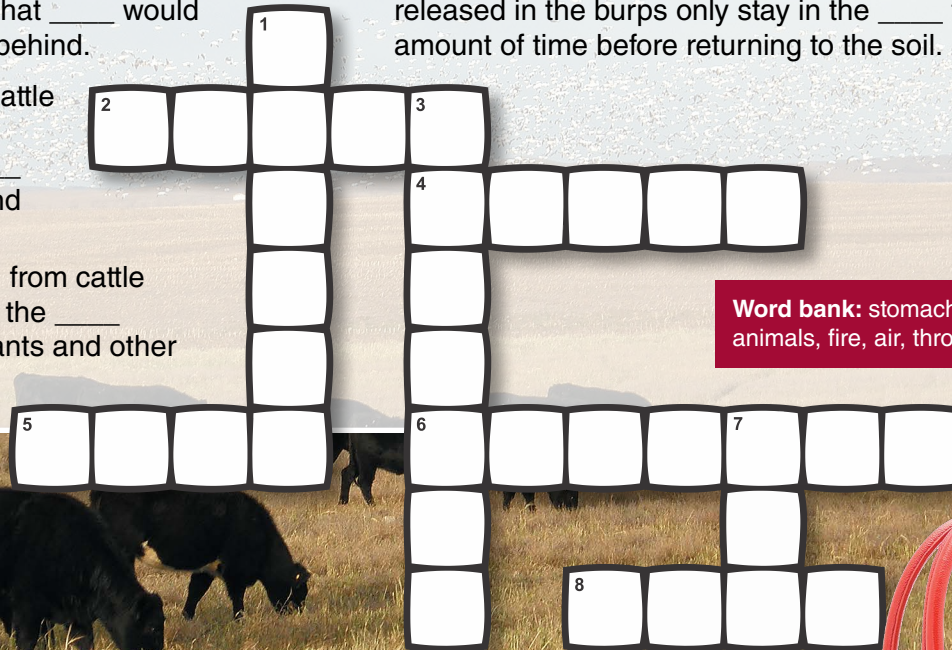
Courtesy of BeefItsWhatsForDinner.com

Across

- Cattle eat ____ and plants and turn them into wholesome, delicious beef.
- A good way to help the planet is to ____ away less food.
- Cattle naturally prevent wildfires by eating the grass that ____ would burn if it was left behind.
- The land where cattle live is also home for many wild ____ like deer, birds and insects.
- Manure, or feces, from cattle can help improve the ____ where worms, plants and other organisms live.

Down

- When ____ graze on land, they conserve areas that people can use for hiking, biking and hunting.
- Cattle use their special ____ to digest grass in a way that humans can't and turn it into beef!
- Cow burps are part of a natural cycle. The gases released in the burps only stay in the ____ for a limited amount of time before returning to the soil.



Word bank: stomach, dirt, cattle, animals, fire, air, throw, grass

NDSU

Beef Byproducts

Byproducts are things produced in a process in addition to the principal product. Meat is the primary product we get from beef cattle, but they also provide many important byproducts. Nothing goes to waste.

Draw a line from the part of a beef animal you think these products come from. These are just a few examples of beef byproducts we use every day.

Fats	Belts, purses, footballs
Hair	Iron to treat anemia
Hide	Tennis racket and musical instrument strings
Bones	Candles, crayons, soaps
Intestines	Insulin for diabetics
Collagen	Livestock feed
Pancreas	Paint brushes
Blood	Fertilizer
Bone Meal	Gelatin for gummy worms and marshmallows
Manure	Adhesives such as glues



Career Corner

Layna Dvorak

Manning, North Dakota

Ten-year-old Layna Dvorak likes raising beef because she gets to be outside to see their cattle every day. She also really likes to eat beef, especially steak.

The Killdeer Public School fifth grader ranches with her parents, Weston and Teresa, and her sisters: 14-year-old twins Audrey and Tessa and 12-year-old Landry.

“Our ranch raises **cows** and **calves**,” Layna explained. “At the beginning of the summer, we move the cows and calves to **pasture**. Our cows are in grass pastures that my dad can’t grow crops on. They also graze our fields in the fall after the crops are harvested.”

In addition, her parents built a **feedlot** with big pens where the cattle live and people pay them to feed and take care of their **heifer** calves during the winter. Then, in the spring, they go back to their owners.

“When our calves are almost one year old, we sell them to a feedlot that feeds them until they are ready to become meat,” Layna said.

Some of Dvorak’s cattle are sold to their own business: Dunn Burgers, which processes the beef and sells it directly to consumers rather than through grocery stores.

“They cut it into lots of different cuts like steaks, hamburger and roasts,” Layna said. “My school buys beef from Dunn Burgers. I think it is pretty neat that my friends and I get to eat the beef I raised on my ranch!”

Layna and her sisters learn about their cattle, plus pigs, sheep and community service, through 4-H.



Photos: Dvorak Family

“I help feed our 4-H animals every day. I also help my mom when she is feeding the calves in the feedlot by unwrapping all the bales. I am finally old enough to start driving the tractor so I can help rake hay.”

Layna says she enjoys working on the ranch because it helps her learn to be responsible. Plus, she enjoys being outside and she can find the fun in the work.

“Beef cattle are important so people don’t starve,” Layna says. “Beef gives us protein that makes us strong.”

Someday Layna hopes to have a career that lets her continue working with beef cattle and meat.

Match Game

Match these definitions with the bold words from this Career Corner by writing the bold word that matches the definitions.

- _____ a plot of land where cattle live together in large pens and are fed grain and hay to grow efficiently
- _____ young beef or dairy animals, usually less than one year old
- _____ a young female beef or dairy animal that has not yet had a calf
- _____ a large area of land naturally covered with grass and other plants where cattle live and graze (eat the grass and plants)
- _____ adult female beef or dairy animals that have had at least one calf



Beef Distribution

The Journey of Beef

Beef travels through many steps from the farm to your table. Think about beef production, processing, distribution and consumption to number these steps in the order in which they happen.

_____ When cattle are ready for market at about 1,300 pounds (14-20 months of age), they may be sold to a packer or processor.

_____ Finished cattle are trucked to a packing plant where they are converted to beef to eat and byproducts.

_____ Calves are born on farms and ranches, weighing about 80 pounds at birth.

_____ From the packing plant, beef is shipped to the supermarket where it is purchased to be eaten at home or to schools, restaurants and hospitals.

_____ When cattle are about a year old (called yearlings) and weigh about 800 pounds, they are usually sold at an auction or livestock market to a feedlot where they eat grain along with hay or silage until they weigh about 1,300 pounds.



CATTLE GRAZING ON A PASTURE

CATTLE IN A FEEDLOT



Beef Consumption

Beef is in the Protein Foods group of MyPlate. Kids your age generally need 4 to 6 ounces of protein foods each day for healthy nutrition.

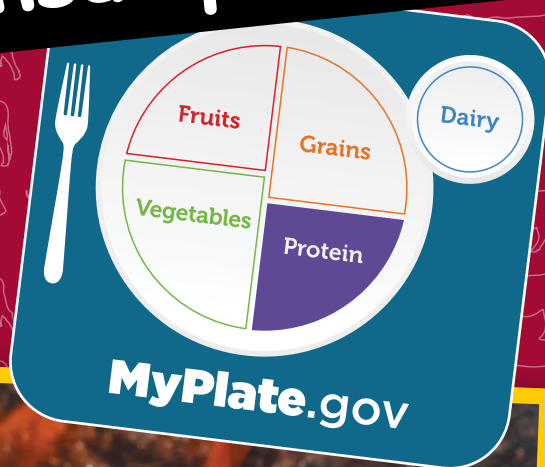
Hamburger History

Use these words to fill in the blanks: American, German, Russia, sandwich, chef, favorite

The 14th century people of the Tartar region in 1. _____ liked their beef raw, chopped finely with salt and pepper. When their ships reached the 2. _____ port of Hamburg, "tartar steak" found its way to Germany. Soon a German 3. _____ cooked the tartar steak to make Hamburg steak. Many years later in America, the chopped meat cooked Hamburg style became known as the "hamburger."

In 1904, the first hamburger 4. _____ was served to the public at the St. Louis World's Fair.

Today the average 5. _____ eats 114 hamburgers a year, and one poll found that the hamburger is the 6. _____ food of Americans.



HAMBURGERS ON GRILL

ZIP with Beef

Beef is packed full of power nutrients, including **ZIP** – zinc, iron and protein.

Zinc is needed for a healthy immune system and to control your appetite. Beef is the #1 source of zinc in the American diet.

Iron helps carry oxygen to your body's cells and tissues. It also helps your brain develop.

Protein helps keep your body energized. You need to eat enough protein every day to support growth and maintenance of muscle and other tissues, and to replace proteins that are broken down by the body.

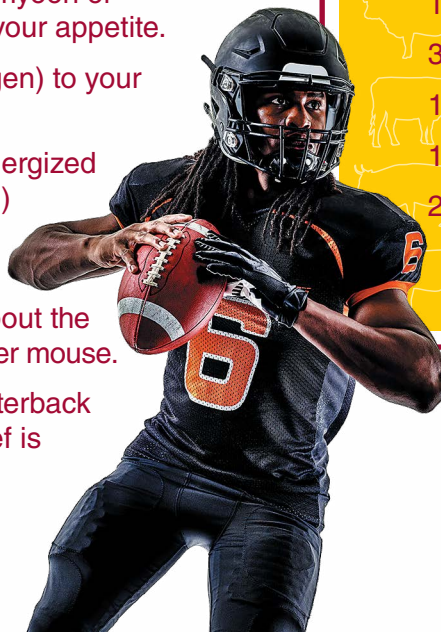
Beef also is an excellent source of B vitamins that promote growth and maintain health.

One serving of cooked beef is three ounces. This is about the size of a deck of cards or computer mouse.

Beef Gives Athletes ZIP and More

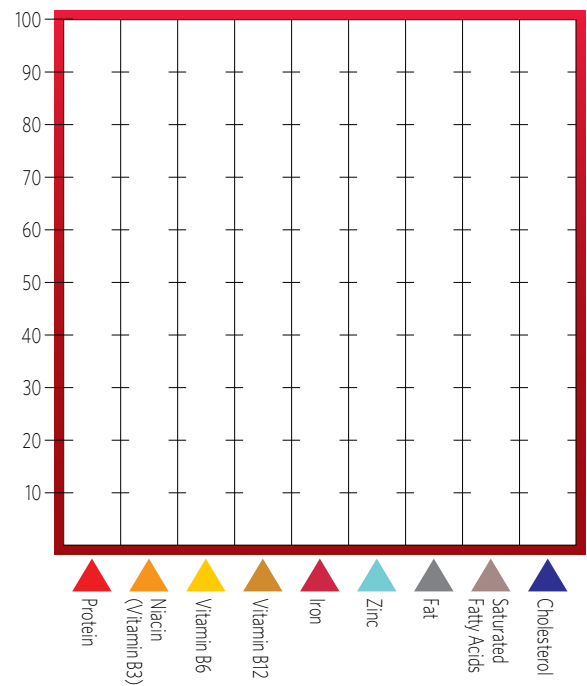
Circle the correct word in each sentence.

1. Beef is packed with power nutrients for everybody but especially for (athleets or athletes).
2. These nutrients have ZIP: zinc, iron and (protein or proteen.)
3. Zinc is needed for a healthy (immyoon or immune) system and to control your appetite.
4. Iron helps carry (oxygen or oxegen) to your body's cells and tissues.
5. Protein helps keep your body energized and supports (muscle or mussel) growth.
6. One serving of cooked beef is 3 (ownces or ounces), which is about the size of a deck of cards or computer mouse.
7. Tony Romo, a former NFL (courterback or quarterback), shares why beef is important in an athlete's diet at www.beefitswhatsfordinner.com.



Ground Beef Nutrition

When you eat a cooked 3-oz. (85g) 90% lean/10% fat ground beef burger, what percent of the Daily Value for beef's key nutrients do you get? Fill in the bar chart below using information from below.



Source: North Dakota Beef Commission

One 3-oz. (85g) cooked burger of 90% lean/10% fat ground beef will supply:

43% of the daily value for **PROTEIN**.

26% of the daily value for **NIACIN**

16% of the daily value for **VITAMIN B6**

42% of the daily value for **VITAMIN B12**

13% of the daily value for **IRON**

36% of the daily value for **ZINC**

14% of the total fat

18% of the saturated fatty acids

23% of the dietary cholesterol recommended on a 2,000 calorie diet.

Take this issue of North Dakota Ag Mag home to share what you've learned about beef.



Agriculture
Commissioner
Doug Goehring

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