



Colorado Reader

An agricultural magazine for students

BEEFIN' UP KNOWLEDGE

Discover Colorado's #1 Agricultural Product

Welcome to the world of Colorado beef ranching! In this issue, you'll explore how Colorado's top agricultural product goes from ranches across the state to dinner tables everywhere. Discover the hard work and care that ranchers put into raising cattle, learn fascinating facts about beef, and see how cattle ranching connects to our environment, economy, and daily lives. Get ready for a beefy adventure that takes you from pastures to plates!

There are
2.6 MILLION
head of cattle in Colorado

Colorado ranks **4TH**
in the U.S. for
feeding cattle

Cattle and Calves
is Colorado's
#1 agricultural
product

There are
12,030
cattle and calf
farms and ranches
in Colorado

In Colorado, **cattle and
calves** accounts for
\$4.5 BILLION
in cash receipts

In 2021, Colorado exported
\$606 MILLION
of beef and veal, with **Japan, China,
South Korea, Canada, and Mexico**
being the top export markets



Source: Colorado Beef Council

POPULAR BREEDS OF CATTLE

A breed is a group of animals that come from common ancestors and have similar traits, or characteristics. Just like there are different breeds of horses and dogs, there are different breeds of beef cattle.

There are more than 70 recognized breeds of cattle in the United States. While there are various physical differences, they have one thing in common: They all provide high quality, nourishing beef that can be part of a healthy diet.

Let's learn about nine popular beef breeds in the United States. Use the descriptions to learn about popular beef cattle breeds and match each one to its photo! Write the name of breed below each photo.



Breed 1: _____



Breed 2: _____



Breed 3: _____



Breed 4: _____



Breed 5: _____



Breed 6: _____



Breed 7: _____



Breed 8: _____



Breed 9: _____

Angus (ANG-gus)

Physical Traits: Solid black color, medium to large size, known for being muscular and compact.

Country of Origin: Scotland

Imported to the U.S.: Around 1873

Approximate Current Numbers in the U.S.: Over 300,000 registered each year

Purpose/Traits: Angus are known for their high-quality, marbled beef and are often used in premium beef programs.

Brahman (BRAH-muhn)

Physical Traits: Light gray to red, with a distinctive hump over the shoulders, thin skin, and large, floppy ears.

Country of Origin: India

Imported to the U.S.: 1849

Approximate Current Numbers in the U.S.: About 200,000

Purpose/Traits: Known for heat tolerance and insect resistance, Brahmans are commonly used in warmer climates.

Charolais (SHAR-uh-lay)

Physical Traits: Solid white or creamy color; large and very muscular.

Country of Origin: France

Imported to the U.S.: 1930s

Approximate Current Numbers in the U.S.: Over 50,000 registered each year

Purpose/Traits: Charolais cattle are valued for their fast growth and lean, high-quality beef.

Gelbvieh (*GELV-vee*)

Physical Traits: Typically reddish-gold, though some are black; medium to large size with a muscular build.

Country of Origin: Germany

Imported to the U.S.: Early 1970s

Approximate Current Numbers in the U.S.: About 35,000 registered each year

Purpose/Traits: Known for fast growth, lean meat, and good milk production, Gelbvieh cattle are often used in crossbreeding programs.

Hereford (*HER-furd*)

Physical Traits: Red body with a white face, legs, and belly; sturdy and medium-sized.

Country of Origin: England

Imported to the U.S.: 1817

Approximate Current Numbers in the U.S.: Over 75,000 registered each year

Purpose/Traits: Known for their toughness and adaptability, Herefords thrive in various climates and produce high-quality beef.

Limousin (*LIM-uh-zin*)

Physical Traits: Golden-red to black coat, long body with a lean, muscular build.

Country of Origin: France

Imported to the U.S.: 1969

Approximate Current Numbers in the U.S.: About 45,000 registered each year

Purpose/Traits: Known for lean beef with little waste, Limousins grow quickly and are valued for their meat quality.

Red Angus (*RED ANG-gus*)

Physical Traits: Solid red color, medium to large size with a muscular body.

Country of Origin: Scotland

Imported to the U.S.: 1800s (with Black Angus)

Approximate Current Numbers in the U.S.: About 200,000

Purpose/Traits: Known for tender, marbled beef, Red Angus cattle are hardy and thrive in various environments.

Shorthorn (*SHORT-horn*)

Physical Traits: Red, white, or roan (red and white mixed); medium-sized and stocky.

Country of Origin: England

Imported to the U.S.: 1783

Approximate Current Numbers in the U.S.: Over 15,000 registered each year

Purpose/Traits: Shorthorns are versatile, used for both beef and milk, and known for their gentle temperament.

Simmental (*SIM-en-tahl*)

Physical Traits: Often red and white or spotted; large and muscular.

Country of Origin: Switzerland

Imported to the U.S.: Late 1960s

Approximate Current Numbers in the U.S.: Over 90,000 registered each year

Purpose/Traits: Valued for their fast growth and good milk production, Simmentals are raised for both meat and milk in some areas.

Test Your Knowledge

Using the provided beef breed descriptions, answer these questions.

1. Which breed is the oldest in the U.S.?

2. Which breed has the fewest numbers registered in the U.S. each year?

3. Which two breeds originally came from Scotland?

4. What is the unique feature of the Brahman breed that helps them stay cool?

5. How many breeds were imported to the U.S. during the 1900s?

6. How many breeds originated from European countries?

Extra credit: On a separate piece of paper, write a short essay about what breed of beef cattle you would want to be and why?

Phonetic pronunciations help you sound out words by breaking them into easy parts to say. For example, "Angus" is shown as (ANG-gus), so you say the first part like "ANG" (like in "angel") and the second part like "gus" (like in "August"). Try saying each part slowly, then put them together to say the whole name!

EXPLORE THE BEEF LIFECYCLE

Raising beef cattle is a long and complex journey. Because cattle need different types of food as they grow, they often move to different places and change owners about three or four times. This happens over one and a half to three years, as the cattle go through different stages of life.

PHASE 1 - COW-CALF FARM OR RANCH:

Raising beef begins with ranchers. These ranchers have a herd of cows. The cows give birth to calves once a year. Calves can be born any time during the year, but most are born from January to May. About 40 percent are born in the fall. When a calf is born, it can weigh between 60 to 100 pounds. For the first six months of its life, each calf will live off its mother's milk and eat grass.



PHASE 2 - WEANING:

Calves are weaned or separated from their mother's milk at six to ten months of age. At this weaning stage, they weigh between 450 and 700 pounds. These calves continue to eat grass. They may also eat a small amount of feed. This feed is plant based and gives the calves extra energy and protein to help them grow.

PHASE 3 - STOCKERS AND BACKGROUNDERS:

After weaning, the calves may be sold to ranchers called stockers or backgrounders. These ranchers continue to care for the calves. The calves grow and thrive by eating grass in pastures. The calves also eat additional feed, which includes vitamins and minerals. This additional feed makes sure the animals are getting all of their nutritional needs.



PHASE 4 - LIVESTOCK AUCTION MARKETS:

After weaning and/or during the stocker and backgrounder phase, many calves leave the farm or ranch where they were born. They may be sold at livestock auction markets, online auctions, or through a company cattle buyer. The calves are typically between 6-12 months of age at this stage.

PHASE 5 - FEEDYARD:

Mature cattle are often moved to feedyards. Here cattle typically spend four to six months. They are free to eat at feed bunks. The feed is a carefully balanced diet made up of roughage and grain. Roughage can be hay and grass. Grains include corn, wheat, and soybean meal. Veterinarians, nutritionists, and caretakers work together to provide individual care for each animal.



PHASE 6 - PACKING PLANT:

Cattle reach market weight around 1,200 to 1,400 pounds at 18 to 22 months of age. They are then sent to a packing plant (also called a harvesting facility). United States Department of Agriculture (USDA) inspectors oversee animal welfare, food safety, and quality standards. Their goal is to make sure all standards are met. There are strict standards from the time animals enter the plant until the final beef products are shipped to grocery stores and restaurants.

MEET THE JOHNSTON FAMILY

We are a first-generation ranching family that manages a large cow-calf herd in Canon City, Colorado. Cow-calf means that we have cows (females) and bulls (males), and every year each cow has a calf (baby) in the spring. The calves are sold in the late fall, after they have been weaned (separated from their mothers). The ranch has two divisions, one high up in the mountains and the other on the plains. Our land isn't very good for raising crops—it's too dry and cold with a short growing season on the mountain, and too dry and hot down on the plains—it's great for growing grass and other plants that cows can eat!

DESCRIBE A TYPICAL DAY:

Each day is different, and that makes it fun. Early in September, we start bringing the cows off the mountain leases to the meadows closer to the ranch. In late October, it's time to wean and ship the calves to the lower ranch so they can eat lots of forage and grain to grow big until it's time to sell them. We will also pregnancy-check all the mama cows to see who is going to have a calf next year and when. Our vet uses a special tool called an ultrasound so he can see the calves inside the cow's reproductive system. Because we live high up in the mountains, we also PAP Test our replacement heifers (the young cows who are going to be new mama cows.) PAP means Pulmonary Arterial Pressure, and it's a test the vet does to see how hard a cow's heart is working to pump blood through their body. Up here where the air is thin, if a cow's heart has to work too hard, it can make the cow sick and it will die. This test helps us understand which cows can thrive in the mountains and which ones need to spend their lives at a lower elevation on the plains. Once

WHO IS INVOLVED:

Bert and Cassidy (aka Mom and Dad) and their three boys: Wacey, Buster, and Kirby. Plus a lot of dogs, horses, and several barn cats! There are also ranch hands and their families who live and work on the ranch.



all that work is done in November, we will ship the cows down to the lower ranch for the winter.

WHY WE RANCH:

The Johnstons are first-generation ranchers, which means they are the first ones in their families to raise cattle on a ranch. Bert knew he wanted to be a cowboy from the time he was really little. He participated in rodeo all the way through college and started working on a ranch as a teenager. Cassidy discovered ranching in college and knew that it was what she wanted to do for the rest of her life almost right away. Now, they run big ranches that need a lot of cowboys to take care of all the cattle. Wacey loves to go with dad on his horse, Chug, to help move and care for the cattle. Buster likes to play in the barns and draw pictures of everything going on, and he also makes sure there are enough snacks. Kirby loves to do any kind of cowboy thing but especially loves going for rides in the backhoe or tractor, or on the four-wheeler or on his favorite horse, Sneaky.

WHY CATTLE ARE SUPERHEROES!

Did you know that cattle are like superheroes? They have a special power that allows them to turn things we can't eat into something super nutritious—beef! But how do they do it? Let's dig into what makes cattle so amazing and why they're a big part of sustainable farming.

SUPER STOMACHS: DIGESTION SUPERPOWER

Cattle are ruminants, which means they have a unique four-part stomach that helps them eat things that humans are unable to digest. The largest part of a cow's stomach is called the rumen. It's filled with millions of tiny bacteria and microorganisms that break down a substance called cellulose. Cellulose is what plants use to make their leaves, stems, and stalks strong. Cattle love to munch on foods high in cellulose, like grass, hay, and even leftover plant parts from food and ethanol production.

These food sources might look like a boring salad to us, but to cattle, it's a delicious meal! With the help of their powerful stomachs, they turn this plant material into nutrients, and ultimately, into healthy, tasty beef. Cows and cattle can even eat leftovers from human food production, like corn husks, almond hulls, bakery waste, and sugar beet pulp—things that would normally go to the landfill! According to a study by the Food and Agricultural Organization (FAO), 86% of livestock feed is not suitable for human consumption.

WHICH OF THE
TWO PLATES
BELOW WOULD
YOU LIKE TO EAT?



Grass and forage

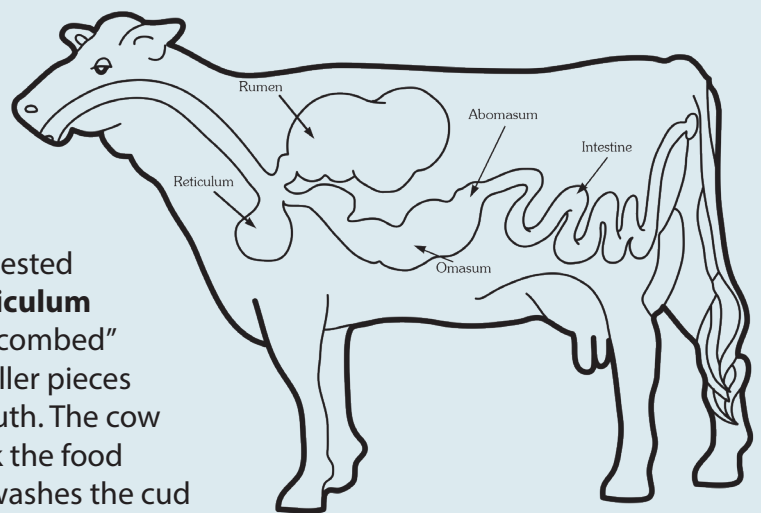


Beef jerky

CHEW IT TWICE

Did you know that a cow spends six hours eating and eight hours chewing its food each day? Follow the path food takes on its way through the cow.

As cattle eat, the food passes from the mouth into the **rumen** (roo mihn), where the food is partly digested by tiny bacteria. The food is then passed to the **reticulum** (ruh tik yu lum), which is a membrane with "honeycombed" ridges. These ridges break the food down into smaller pieces called **cud**. The cud comes back into the cow's mouth. The cow chews its cud with its powerful back teeth to break the food down even more. As the cow swallows, the saliva washes the cud back into the cow's system. The food now flows into the **omasum** (o mey sum). This is where the food breaks down into vitamins and nutrients that the cow's body needs. The final digestive process takes place in the **abomasum** (ab o mey sum). Here the cow's system gets all the remaining food value it needs before the food passes into the **intestines**. The intestines continue to absorb nutrients and store the unused food portions until there is enough to be removed as cow manure.



SUSTAINABILITY ON THE RANCH WORD SEARCH

Beef farmers and ranchers have been committed to caring for the planet for many years. Carefully read the sustainability story below and search for the **BOLDED** and **CAPITALIZED** words in the word search to learn more about their important role!

Beef farmers and ranchers are dedicated to **SUSTAINABILITY**, which means caring for animals, the **PLANET** and people.¹ Cattle have a unique superpower: they eat **GRASS** and plants that humans can't and turn them into nutritious **BEEF** we can eat.² They also live on land that isn't suitable for growing other foods, making them essential for preserving valuable **LAND**.^{3,4}

Their grazing helps **PROTECT** the **HOMES** of other animals like deer, rabbits and birds⁵, while their **HOOVES** put **CARBON** back into the soil, contributing to the fight against climate change.⁶ Together, beef producers and cattle provide high-quality beef that is a key part of **HEALTHY**, sustainable **MEALS**, all while protecting our planet.⁷



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D	H	H	R	M	W	T	S	A	L	Y	W	Q	Z	Q	V	J	C	I	J



Scan code for sources

BEEF. IT'S WHAT'S FOR DINNER.

BEEF SWEET & SLOPPY JOES

Ingredients:

- 1 pound Ground Beef (96% lean)
- 1 cup chopped yellow, green or red bell pepper
- 3/4 cup finely chopped onion
- 1 can or bottle (12 ounces) 100% vegetable juice
- 2 tablespoon lightly-packed brown sugar
- 1 tablespoon Worcestershire sauce
- 4 whole wheat hamburger buns, split

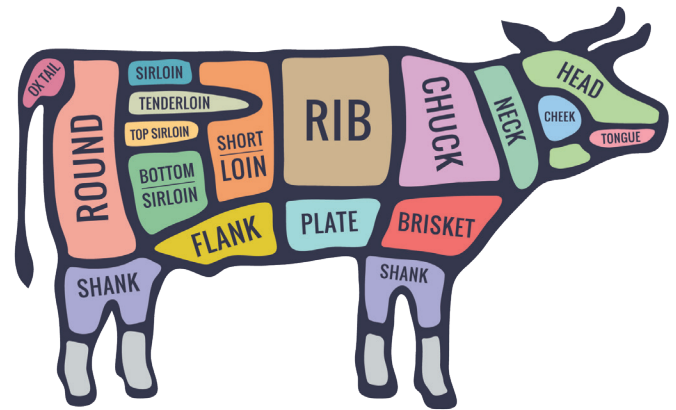
Cooking:

1. Heat large nonstick skillet over medium heat until hot. Add Ground Beef, bell pepper and onion; cook 8 to 10 minutes, breaking beef up into 3/4-inch crumbles and stirring occasionally.

Cook's Tip: Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of Ground Beef doneness.

2. Stir in vegetable juice, brown sugar and Worcestershire sauce; bring to a boil. Reduce heat; simmer, uncovered, 7 to 9 minutes or until most of the liquid has evaporated and thickens slightly, stirring occasionally.
3. Evenly place beef mixture on bottom half of each bun; close sandwiches.

Source: beefitswhatsfordinner.com



CUTS OF BEEF

Beef comes in many different cuts, each with its own unique flavor and texture. Every cut has a story and a special place on the cow! For example, some of the tenderest cuts, like filet mignon and ribeye, come from areas where the muscles don't work as hard. Cuts from the shoulder or leg, such as chuck or round, tend to be a bit tougher, but they're full of flavor and are great for slow-cooking.

Activity: Can you name some retail cuts of beef you might find at the grocery store or in your favorite beef dish? Write down the names of any beef cuts you know, and if you're not sure, take a look at a menu or ask an adult for ideas!

Page 2 answers: 1. Shorthorn, 2. Red Angus, 3. Simmental, 4. Hereford, 5. Charolais, 6. Gelbvieh, 7. Brahman, 8. Angus, 9. Limousin

