

*Today, Colorado's cattle industry is the state's largest agricultural industry. Raising cattle continues as the largest segment of American agriculture.*

## Colorado Cattle Country

Ranchers are caretakers of cattle and the land. The meat we eat from cattle is called beef. Beef gets its start on a ranch. Some ranches are small and some are large, but at the end of the day a ranch is a business, and usually a family business. It uses sunshine, soil and water to grow grass. Cattle eat the grass and convert it into beef ~ a nutrient powerful food.

Ranchers are also grass farmers. The better they are able to manage their grasses, the better they are able to care for their cattle. This is true of any rancher no matter what type of animal he or she is raising ~ cattle, horses, sheep, llamas, bison, even chickens.

Agricultural animals have always made a major contribution to the welfare of human societies by providing food, shelter, fuel, fertilizer and many other products and services.

Cattle ranchers (and all livestock owners) work very hard to take proper care of their animals. They provide cattle with nutritious food like hay, grain and corn; clean water, shelter and medical care. In today's cattle industry, a successful rancher wears many hats – cowboy, herdsman, nutritionist, businessperson, land manager and financial manager among others.



# Cattle Ranching Time-line

JANUARY

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FEBRUARY

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MARCH

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AUGUST

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OCTOBER

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NOVEMBER

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DECEMBER

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## JANUARY - APRIL:

“Calving”

A cow will give birth to her calf any time between the months of January and April. A cow’s due date depends on when she was bred. Newborn calves will normally weigh 60 pounds or more. Ranchers call this “calving season.”

## MAY: “Branding”

All of the cows and calves are gathered in one location. The calves are separated from their mothers. Cowboys will brand, vaccinate and put ear tags on the calves. After that’s done, the calves are returned to their mothers. Brands are the “return address” if the calf gets lost.

## JUNE - OCTOBER:

“Summer Pasture” & “Breeding Season”

All of the cow and calf pairs are either trailed by horseback or hauled by truck and trailer to summer pasture. They will spend the next few months grazing the green pastures to gain weight and grow up healthy and strong. Bulls are turned out with the cows for breeding. There are approximately 25 cows for one bull.

## MID OCTOBER: “Weaning”

Cows and calves are gathered from their summer grazing areas. The calves (now weighing approximately 500-600 pounds) are “weaned” or separated from their mothers. The mother cows are taken back to the ranch and turned out on pasture. The calves are taken to separate pastures.

## NOVEMBER: “Sorting”

Calves are gathered again and sorted by the rancher. Most calves will be sold. The best heifers (female calves) are kept by the ranchers to join their cattle herd.

## DECEMBER: “Winter Feeding”

Pregnant cows are moved from large pastures closer to the rancher’s facilities. These areas are easier for monitoring the cows during the winter weather. Ranchers provide the cows with hay. The cows are checked regularly and can be helped if any of them calve early or have problems calving. *Oh look, it’s almost January! Calving season is almost here!*

A calf is born April 15.

It weighs 60 pounds.

On October 15th, the calf weighs 660 pounds.

How much weight did the calf gain in that time period?

What was the average weight gain each month?

A rancher has 600 cows. Ninety-five percent of the cows have calves. How many cows have a calf?

How many cows do not have a calf?

Sixty percent of the calves are female. How many female calves were born this year?

How many male calves were born this year?

# CATTLE RANCHING TODAY

Colorado's modern ranchers are using new technology to raise cattle. Cattle, equipment and facilities are cared for year around. Cattle, after all, don't take vacations or days off. Computers and smart phones are essential to their way off life.

**Business analysis** - Most ranchers use computers for bookkeeping. Computers also help ranchers stay competitive by comparing their expenses with other ranches. Keeping a cattle inventory or records of equipment repairs on the computer helps the rancher be a better businessperson.

**Selling Cattle** - Technology now gives ranchers several methods to sell their cattle. For example, ranchers can now sell their cattle via the internet by showing videos of their cattle to people who want to buy cattle.

**Animal Nutrition** - What cattle eat is often calculated on a computer. The nutritional balance of their feed and what to mix together to make sure cattle get all the necessary nutrients is done much more efficiently on a computer.

**Electronic Ear tags** - Some ranchers use electronic ear tags on their cattle. Just like the grocery store scans your purchases, cattle ear tags can be scanned and all the information about that animal shows up on the computer. The history of the animal can be tracked with information such as age, weight, color, calving date, vaccinations, health records and more.

**Ultrasound** - you may have heard of ultrasound being used to check on pregnant women, but it can be used on cattle too. An ultrasound scan can show a picture of a cow's muscle and fat. That provides clues about which cattle to breed to get better steaks.

**Drones** - The future for the use of drones on a ranch is amazing. Drones can be used to check fences, search for missing cattle or even to herd the animals. Potentially, drones could be used to identify cattle by scanning a special Active RFID ear tag that gives off a signal for up to a mile.



**FROM GRASS TO GRAIN**  
EXPLORING WHAT CATTLE EAT



**GRASS/HAY**  
Grass can be cut and made into hay for livestock. Different types of hay will have varying levels of protein and fiber.



**SUGAR BEET PELLETS**  
Pulp leftover from processing sugar beets into sugar for humans is made into pellets for feed for cattle containing energy and fiber.



**ROLLED OATS**  
Oats are a good source of fiber and can be fed during most stages of growth.



**STEAM FLAKED CORN**  
Corn is often processed with a steam-flaker to make the nutrients easier to digest. Corn is a great source of energy.



**MIXED RATION**  
A ration is a mixture of many feed sources (such as oats, corn, pellets & ground hay) to create a balanced diet for the cattle to include protein, energy and fiber.

**GO ONLINE AND PLAY THE FROM GRASS TO GRAIN GAME AT [WWW.EXPLOREBEEF.ORG](http://WWW.EXPLOREBEEF.ORG)**

*A cow eats about three pounds of hay every day for every 100 pounds of her body weight. If a cow weighs 1,200 pounds, how much hay does she eat every day?*

*A rancher needs to buy hay for her cows for the winter. She estimates she will need 2.5 tons per cow. She has 50 cows. How much hay does she need to buy?*

# Caring for Cattle and Colorado Land

## Colorado Ranchers Are Friends Of The Land

To the men and women who have been cattle ranchers for decades, land and water conservation are a way of life. They depend on healthy land for their living. They know how to treat the earth well so it can keep giving back to us and to future generations. Ranchers work to keep most of their land in its natural state. Cattle need open pasture for grazing, so nothing is cut down, drained or paved over. Pasture land provides a place for other wildlife, too. Deer, rabbits and birds feed on the same grasses and forbs that cattle like.

## Ranching To Keep Colorado Green

The land is changing as more people move to Colorado. Areas once used to grow crops and livestock are being developed for homes and businesses. Just as cattle depend on humans for food and care, we depend on ranchers. They supply us with food and cattle co-products. Cattle ranchers who take care of their land do more than practice good ranching. They help preserve Colorado's natural environment for a greener future.

## Good Ranching Saves Open Spaces

Many ranchers work hard to keep their land natural and healthy. They help Colorado's environment in several ways:

- Sources of water are developed for cattle to drink including wells, dams and stock ponds. Of course, wildlife like to use these same sources of water too.
- Native plants and wildlife are preserved.
- Shelter belts of trees planted by some cattle ranchers which provide cover for creatures such as foxes and raccoons.

## Colorado

- Cash receipts for Colorado livestock and products total more than \$4 billion, of which more than 77% percent of cash receipts come from sale of cattle and calves.
- Colorado has around 2.7 million beef cattle.
- Colorado feeds almost 2 million head of cattle including cattle from other states.
- Colorado ranks 10th in the United States in total cattle.
- Colorado is the fourth largest exporter of fresh and frozen beef in the United States.

A cow and her calf are called a pair. You can have 24 head of cattle that are made up of 12 pairs.

Dogs and cats drink by lapping water with their tongues while cattle and horses make use of a sucking action.

The scientific name for cattle is bovine. You can have beef bovines. You can have dairy bovines. You can have red, white, black, tan or spotted splotchy colored bovines.

It is possible to lead cattle upstairs but not downstairs. The knees of cattle cannot bend properly to walk back down.

Cattle feet are hooves. The singular of hooves is hoof.

There's a name for each gender and gender/age of cattle: bull, cow, calf, heifer, steer. You can tell which is which by looking at their body structure and size.





# The Amazing Ruminant

About two-thirds of America's land is useless for growing vegetables, fruit or grain. It may be too dry, sandy, rocky or even too wet for crops. On much of that land, nothing grows but weeds and grasses. Those are plants that people can't eat, but the grasses do fill a special need. They're just the right food for livestock and cattle. As cattle eat and grow, they turn that grass into high quality protein that we can use - beef.

Why can cattle eat grass and you can't? It's because of their amazing stomachs with four compartments. That stomach is designed to digest food that humans can't, such as grass and other plants called "roughage." Cattle are great recyclers. They can also eat cottonseed hulls, cornstalks and rice hulls — leftovers we might otherwise throw out. Animals with these special stomachs are called "ruminants."

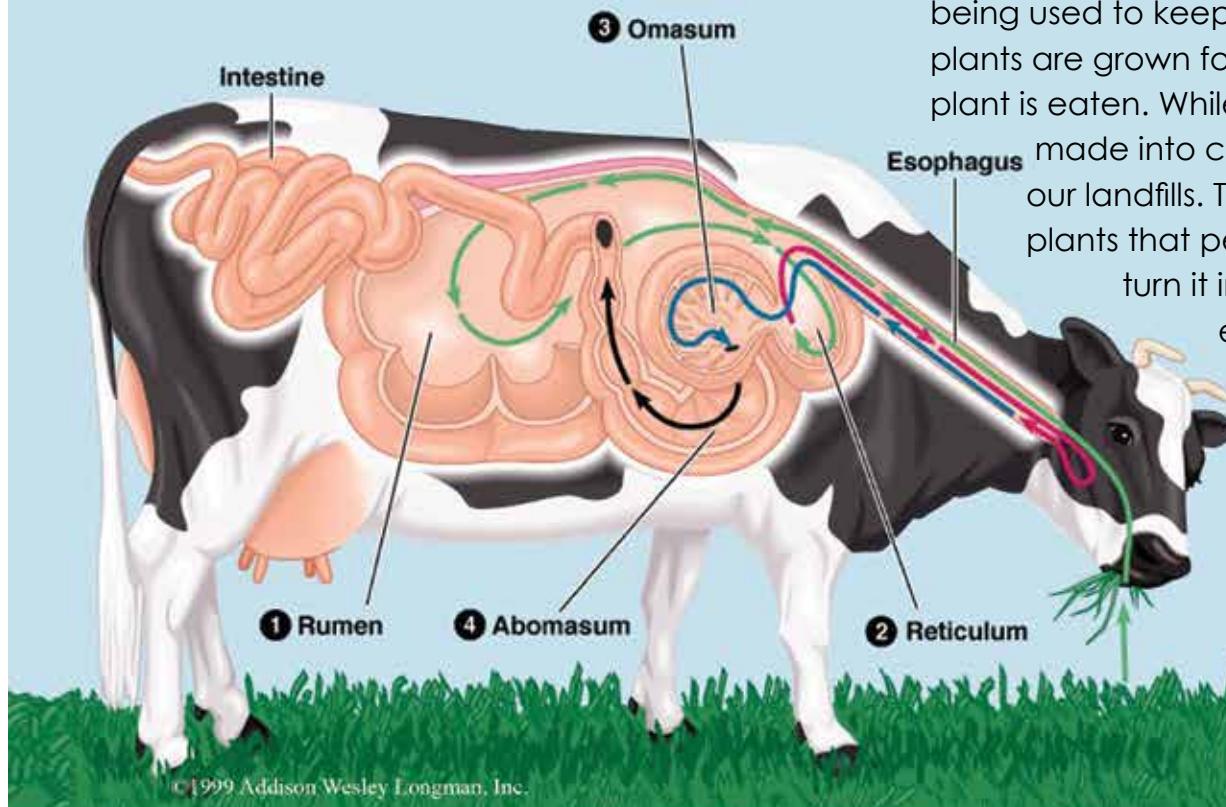
A ruminant animal has a large stomach which is divided into four compartments. One of the compartments is

called the rumen. Digestion in the ruminant depends on the action of billions of microorganisms that live in the stomach and break down the plant material in the ruminant fluid.

Ruminants graze (eat plants growing on the ground) or browse (eat the leaves and twigs from small bushes or trees). Ruminants do little chewing of their food while they are grazing. They chew it enough to mix it with saliva from the mouth. Saliva wets the feed material lubricating it for swallowing. Enzymes in the saliva start the digestion process. Ruminants produce large volumes of saliva.

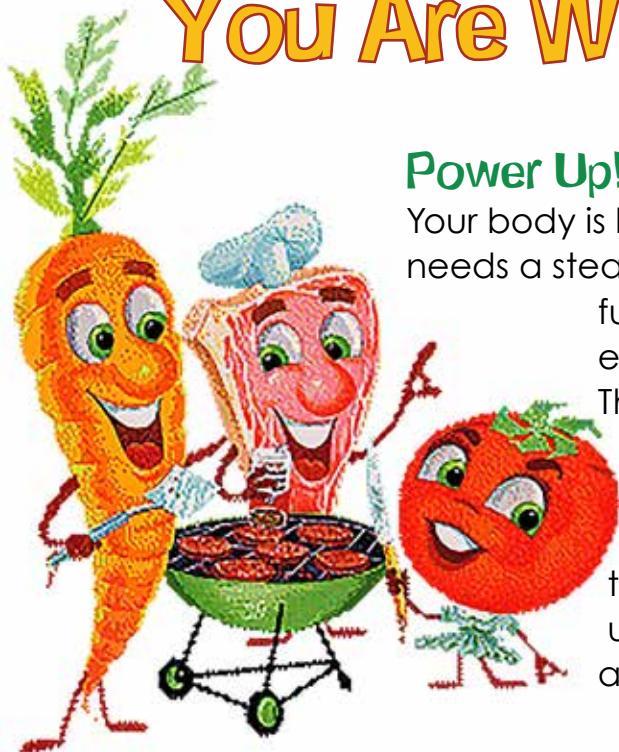
The esophagus connects the mouth to the forestomach. The forestomach is made up of three compartments: the rumen (1), the reticulum (2) and the omasum (3). The abomasum (4) is the true stomach of a ruminant animal.

Because of their amazing stomach, cattle are also being used to keep material out of our landfills. When plants are grown for human consumption, not all of the plant is eaten. While part of this waste material can be made into compost, the rest would be filling up our landfills. The cow is able to use those parts of plants that people can't consume, digest it, and turn it into high grade protein. An example would be the beet. Beet is grown for human consumption and the rest of the plant is chopped up and fed to cattle in feed yards.



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# You Are What You Eat! ZIP + B's



## Power Up!

Your body is like a car— it needs a steady supply of fuel to keep your engine running! The foods you eat supply fuel and important nutrients that help “power up” your body and brain.

**Go LEAN With Beef** How do you like to eat beef? Maybe you like beef in tacos, on your pizza, as a hamburger, or a juicy steak. There are lots of ways to enjoy beef, especially lean beef. “Lean” means it has less fat. Ask your parents to buy lean cuts of beef.

## Energy Boost

When you’re wondering what else to eat that will fuel your body AND help you stay fit, think lean beef. Beef has ZIP + B's! It's packed with nutrients that help you feel and look good— and it's satisfying and delicious!

# Z

**WHY DO WE NEED ZINC?** Zinc helps power your brain. It helps you think so you can remember important facts and pay attention in school. It may even help you get an A on your math test! Zinc also helps your body heal when you have an injury and helps you fight off illness, like a cold. Beef is an excellent source of zinc. The meat group supplies the greatest amount of zinc to the diet – 74% of all zinc consumed.

# I

**WHY DO WE NEED IRON?** Iron helps carry oxygen in your blood and helps to make new blood and brain cells. Your brain and your body need oxygen to help you to do your best. Beef is one of your best sources of iron and also aids the body in absorbing iron from plants. So whatever your thing is — sports, music, writing— you'll do it better.

# P

**WHY DO WE NEED PROTEIN?** Protein can supply energy for your body and keeps you strong. That's because it helps build and repair all parts of your body. While there are other plant and animal sources of protein, beef protein is a complete protein. This means beef has all nine amino acids our bodies need, but cannot make. Protein helps give you the power to perform, so go ahead and throw that ball or hit that high note.

**WHY DO WE NEED B-VITAMINS?** B-vitamins help turn food into energy. Beef supplies five of the B-complex vitamins: thiamin, riboflavin, niacin and vitamins B6 and B12. Riboflavin (vitamin B2) helps the body use energy and promotes healthy skin and good vision in bright light. Niacin promotes healthy skin and nerves, aids digestion and fosters normal appetite. Vitamin B12 is needed for normal functioning of body cells and the nervous system and is only found naturally in animal foods.

