

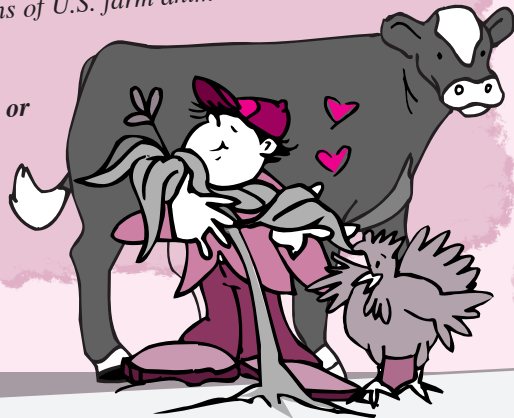
Plants

They're the only living things that make their own food. They are also the source of food for every other living thing. Plants become our medicines, fibers, paper products, cosmetics, spices and building materials. We burn plants for fuels. That includes wood as well as the fossil fuels that came from plants eons ago. We eat plants — roots, leaves, stems and fruits. Everything else we eat also eats plants! Finally, we depend on plants for the oxygen we breathe. Without plants, we would not survive.

Think & Discuss

More than half the world's population depends on rice for a daily meal. Another one-third eats wheat in some form every day. One-fourth uses corn and corn products every day. Soybeans are another major crop for both people and animals. More than three-fourths of U.S. farm animals are fed corn and soybeans on a regular basis.

What have you eaten or used today that came from rice, wheat, corn or soybeans?



Animals

Only about one-fifth of the land in the United States is suitable for growing crops. The rest has poor soil, too little rainfall, or rocky, rough surfaces that machinery can't cover. Forests cover millions of acres. Even though we can't grow food crops on these lands, livestock can often graze there. As livestock eat grass, they turn it into food and fiber people can use. Animals provide the eggs, milk, fish, burgers, steaks, chops and roasts that give us protein. They produce the wool and leather people use for clothes, shoes and baseball gloves. Animal fats are important in soaps, cleaners, cosmetics, paints, plastics and much more. Thanks to animals we have better lives.

Think & Discuss

Where there are animals, there's manure. Cow pies, right? And even manure has value. It fertilizes soil, making it rich for growing crops. Millions of people around the globe use dried manure for cooking their food.

Why would they do this?

Beef Farming in Minnesota:

Bringing Plants and Animals Together

Beef farming is an important industry in Minnesota and the nation. Beef farmers depend on both plants and animals for their business. Feed for cattle comes from plants (grass, hay, ground-up field crops). As cattle eat grass and other **forage** plants that humans cannot eat, the animals produce food (meat), fiber (leather) and other materials that people can use. You'll learn more about the beef agriculture cycle from the field to your dinner plate on AgMag pages 4 and 5.

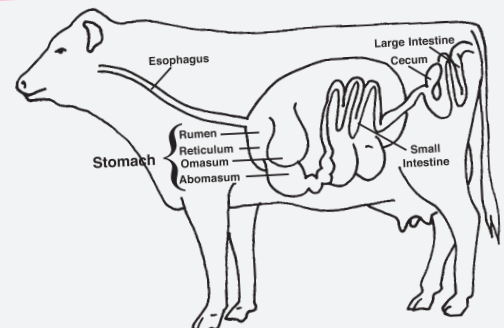
Why can cattle eat grass and we can't?

Animals like cattle, goats, sheep and deer can digest plants like grass because they have a stomach with four compartments. They swallow food in large pieces into the first stomach compartment (**rumen**) to start digestion, but bring it back into their mouths later to chew again. This is called "chewing the **cud**." The cud is swallowed again and moves through all four compartments, digesting further in each stomach. As the food digests, the animal's body uses its nutrients. Humans have simple stomachs that cannot digest plant fibers in the same way.

These are common words for cattle.
Can you match each with its definition?

1. heifer _____
2. cow _____
3. calf _____
4. bull _____
5. steer _____

- A. female after she has had a calf; produces milk
- B. young female who has not yet had a calf
- C. male of any age
- D. newborn or young (male or female)
- E. neutered male



Bring on the Beef

Travel through Minnesota farm country and you will see many herds of beef cattle. Beef cattle are raised for the meat they produce. Here are some of the steps beef goes through as it moves from the field to our tables.

1

Beef calves stay with their mothers until they are about five months old.



Photo Courtesy U of MN Agricultural Experiment Station

6



Photo Courtesy Ellison Meat Company

2

After they are **weaned**, calves are moved to a pasture or a feedlot. They are given a balanced mixture of feeds for growth and health. It takes about 12 to 18 months to grow to market size.



Photo Courtesy U of MN Agricultural Experiment Station

3

Farmers take good care of their animals so they stay healthy and comfortable. Each animal has an identification number and a tag so age, health records, food needs and other information can be carefully tracked. Veterinarians help farmers keep their animals healthy.



5



Photos Courtesy Ellison Meat Company

4



From the farm, cattle are trucked to places where they are inspected and sold. Those to be used for meat go to a processing plant. Minnesota has about 300 businesses, large and small, that process beef.



7

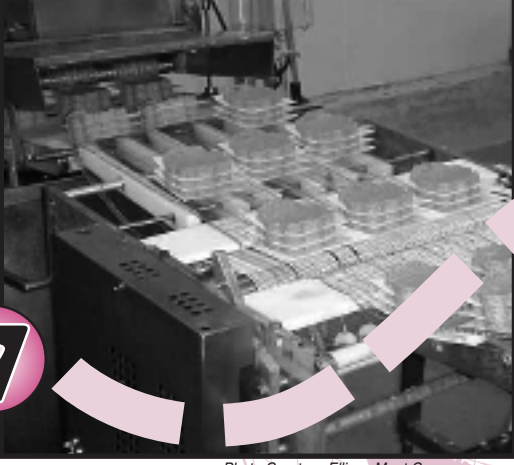


Photo Courtesy Ellison Meat Company

At its next step, meat is further processed into cuts customers order. Some want steaks; others want hamburger or roasts or ribs.

8

The U.S. is the world's largest beef producer. Some U.S. meat is exported to other countries. Japan, Korea, Canada and Mexico are leading customers.



9

A lot of beef is sold to fast food and other restaurants, hotels, schools, hospitals and large institutions.

More than half goes to grocery stores.

Photos Courtesy Minnesota Beef Council

10



The meat counter isn't the only place you'll find farm animals. Turn the page and you'll see what we mean.



Keeping Our Food Safe & Clean

Safer food at every stage—farmyard, processing plant and dinner plate—takes research and care. Bacteria are everywhere! About 73,000 people—many of them children—get **E. coli** infection every year. This illness is often linked to undercooked hamburger. The good news is that **foodborne** illnesses are preventable.

The technology of food **irradiation** offers one more layer of protection from foodborne illness.

Food irradiation is a process in which foods are exposed to short bursts of high energy (radiation). The energy passes through the food and destroys germs. Nutrition and taste do not change. Irradiation is used on raw meats and poultry, fruits, vegetables, spices, rice, wheat and more.



Irradiated foods in our grocery stores must carry this symbol, called the radura. You may also see the words Irradiated for Food Safety.

Just like pasteurization makes milk safer, irradiation makes beef safer. When ground beef is irradiated, at least 99.99 percent of *E. coli* and other harmful bacteria are killed. More than 40 years of research says irradiation is safe.

Once food is in our kitchens, food safety is up to us. That means washing hands, keeping cold foods cold and hot foods hot, and scrubbing all surfaces touched by raw food. It means cooking meats to the correct temperature.



Did you know?

People used to think that cooking the pink out of hamburger made it safe. Now experts tell us that only cooking hamburger by thermometer, to 160 degrees F, can stop danger from *E. coli* and other bacteria that can make you sick.