

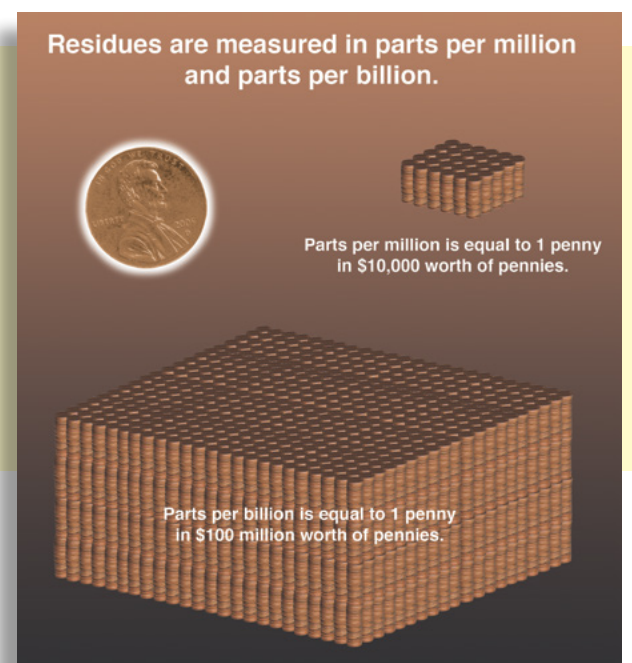


Arizona cattle play a large role in Arizona's nearly \$20 billion agriculture industry. Ranking as Arizona's top commodity, there are 6,029 farms and ranches with cattle across the state, spanning all 15 counties. Whether they reside on a ranch or feedyard, the nearly 970,000 cattle are given the highest quality of care by Arizona farmers and ranchers.

Keeping Animals and You Healthy

A large part of animal care requires keeping the animal healthy. This is a top priority for ranchers. Just like you, beef farmers do not like when their animals are sick. When they are, antibiotics can be given under the guidance of a veterinarian. At times, antibiotics can also be given to keep other animals from getting sick.

Whenever antibiotics are given to animals raised for food, the U.S. Food and Drug Administration (FDA) monitors any residues to keep us safe. Tolerance levels have been determined through extensive research specific for each compound that determine what, if any, residual level is safe. Some veterinary compounds have a zero tolerance while others have been found safe at very low levels. Whenever an antibiotic is given to a food animal, a strict waiting period or "withdrawal" period is required before the animal can be harvested for food. This industry practice ensures that antibiotics are properly eliminated from the animals' systems and that no unsafe residues are found in the meat. Other industry guidelines encourage avoiding using antibiotics that are important to human medicine, using a narrow spectrum of antimicrobials whenever possible, treat the fewest number of animals as possible, and use antibiotics only to treat, prevent or control disease. What does this mean? All the beef at the grocery counter is safe to eat!



Beef can be a delicious part of a healthy diet. In fact, beef is one of the most naturally nutrient-rich foods in the protein group because it provides a high Daily Value of zinc, iron, protein and B vitamins - all of which are necessary for a healthy body. Some say, beef gives you ZIP!



ZINC supports the body's immune system while also helping form enzymes and insulin.

IRON is essential to produce hemoglobin (found in red blood cells) and myoglobin (found in muscle). Hemoglobin is necessary to transfer oxygen in your blood to the lungs and tissues.

PROTEIN (complete) from beef help to build, maintain, and repair body tissues, form body hormones and enzymes, and increase resistance to infection and disease. Beef also provides several B-vitamins that are associated with improved brain performance, the promotion of healthy skin and nerves, and aid in digestion. Vitamins B6 and B12 also help the body

make non-essential amino acids. B-vitamins are needed for normal functioning of body cells and the nervous system.

PROTEIN









Beef Life Cycle

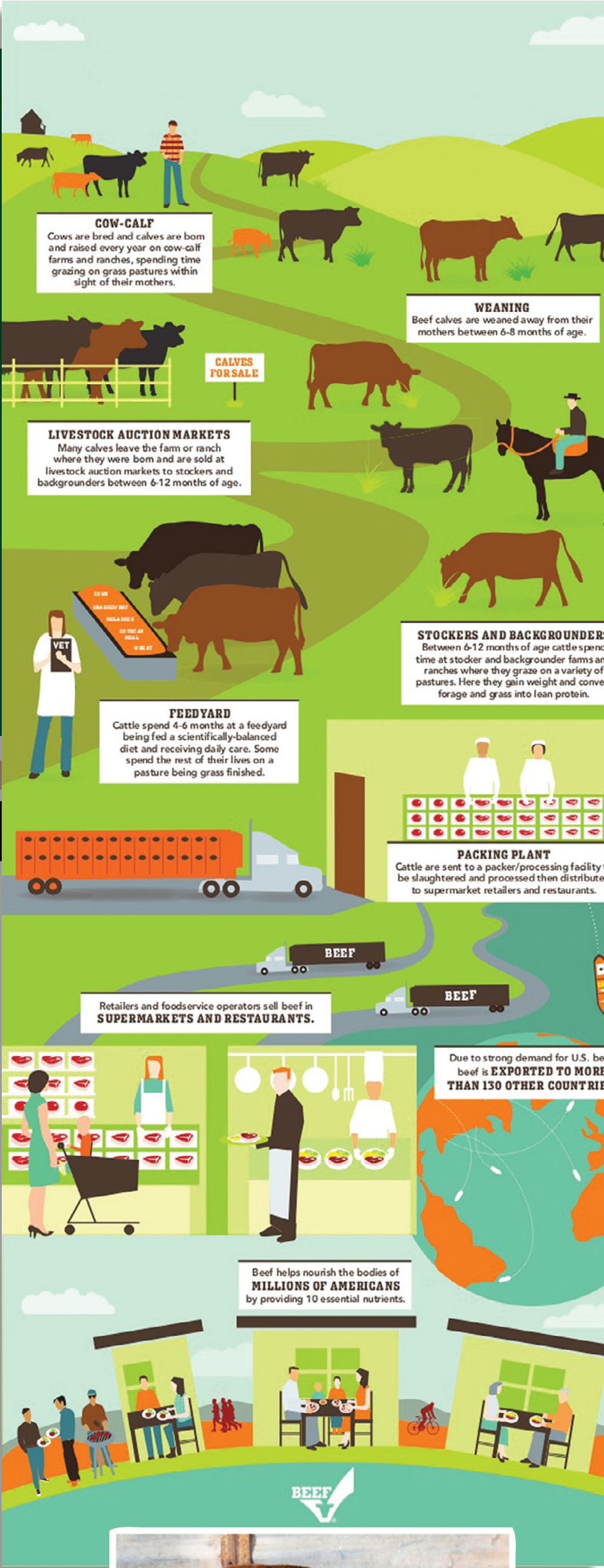
The cattle life cycle is complex and requires several caretakers who have extensive knowledge and specialize in a key area of a cow’s life. In fact, cattle will change owners an average of two to three times. Each caretaker through the Gate to Plate process focuses on proper animal care, using voluntary programs like Beef Quality Assurance (BQA) to raise high-quality beef for people here in the United States as well as around the world.

Photo by: Joe “boots” Parker



Andy and Stefanie Smallhouse own and operate the Carlink Ranch in Redington, Arizona. They are the fifth generation to care for the land and the cattle on this ranch.

-  91% of US cattle ranches and 80% of feedyards are family owned.
-  When a calf is born, it weighs between 60 to 100 pounds.
-  Weaned calves will weigh between 500 to 750 pounds. About 1/3 of the female calves will stay on the farm to continue to grow and will become mothers the following year.
-  Cattle are usually around 18 to 20 months of age and 1200 to 1400 pounds when they are harvested.
-  USDA inspectors are in all federally inspected packing plants and oversee the implementation of safety, animal welfare, and quality standards from the time animals enter to the time the final beef products are shipped to grocery stores and restaurants. If an animal is sick or has an injury, the USDA Inspector will deem the animal unfit for human consumption, and the animal will not enter the food supply.
-  About 90% of the beef raised in the U.S. is consumed in the U.S.



What's in the Trough?

Quality care of cattle starts in the feed trough. Most beef cattle begin their lives grazing grasses and other forage on the range or in pastures. Once cattle reach weaning age, when they no longer need cow's milk, their diet will change, continuing to provide all the necessary minerals and nutrients. Beef farmers work alongside cattle nutritionists to formulate rations and assess animal needs. Some feedyards will test the cattle feed weekly to analyze the nutritional profile to ensure they are providing quality feed that the cattle want to eat. What might you find in the feed trough?



Roughages Arizona is a great place to raise cattle because Arizona is a great place to grow alfalfa. Roughages are necessary for a healthy ruminant digestive system. Other roughages include Sudan Grass, silage, and Bermuda grass.



Steam-flaked corn provides protein, fiber and minerals such as phosphorus to cattle. Flaking or rolling the corn makes it easier for the cow to absorb the nutrients.

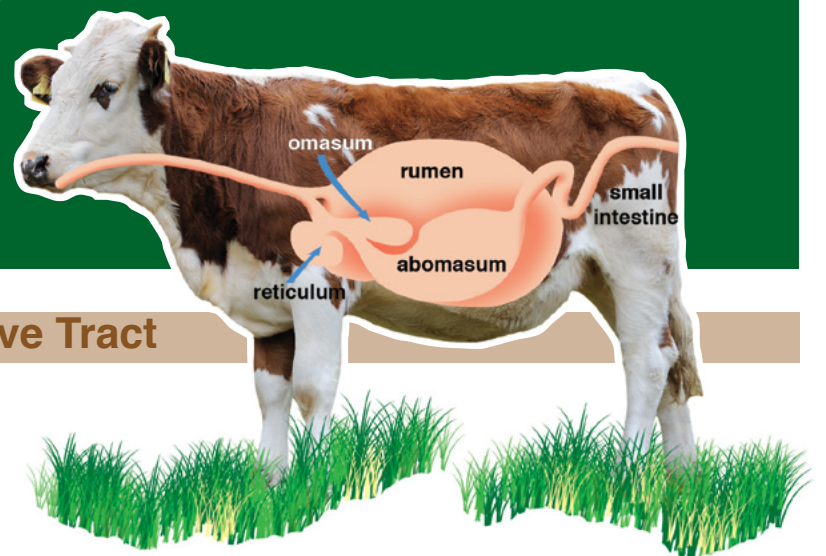


Wet distiller grains are a by-product of producing ethanol. These can be mixed with a feed ration to provide fiber, protein, and moisture to the diet



Used vegetable oil from restaurants can be mixed with a feed ration to add fat that cattle can convert to energy.

Did You Know?
Corn is the seed of a grass.



Cow Digestive Tract

Even Beef Gets Graded

A+

All beef is inspected by the U.S. Department of Agriculture (USDA) and is graded for quality and consistency. Grades are used to reflect differences in eating quality of the cooked product for consumers. Factors such as marbling, firmness of muscle, color and texture are all factors in the grading process. Marbling is the thin white streaks of fat found in the muscle that melt and baste the meat when flavored. The more marbling, the higher the grade.

BEEF GRADES INCLUDE

**USDA
PRIME**



This beef contains the largest amount of marbling. It is generally sold by finer restaurants and some select meat stores. This meat is usually higher priced due to limited quantities. Only about 5% of all beef qualifies for the PRIME distinction.

**USDA
CHOICE**



This is the grade preferred by most consumers because it has some marbling for flavor and juiciness but is less expensive than PRIME. Approximately 70% of beef is graded CHOICE.

**USDA
SELECT**



This grade is usually lower priced due to less marbling. These cuts are leaner, a little less juicy, and benefit from marinades and slow cooking. Approximately 25% of beef is graded SELECT.

Decode the Label

A poll conducted by Consumer Reports National Research Center found that 93% of consumers want labeling on meat. Yet, many find the marketing claims on meat labels are often confusing and may leave the consumer with more questions than answers. The use of specific words by food marketers contributes to confusion about how animals are raised in modern agricultural practices and how those practices affect the meat we eat. So, what are those food labels really telling us? Use this as a guide to get you through the confusion at the counter.



GRAIN-FINISHED

Most beef is raised this way. There will not typically be a designating label.

This beef comes from cattle that...

- Spend most their lives eating grass or forage.
- Spend 4-6 months at the feedyard eating a balanced diet of grains, hulls, sugar beets, silage, and the majority being grass and forage.
- May or may not be given United States Food and Drug Administration (FDA)-approved antibiotics to treat, prevent, or control disease and/or growth-promoting hormones.



GRASS-FINISHED OR GRASS FED

This beef comes from cattle that...

- Spend their whole lives eating grass or forage.
- May also eat grass, forage, hay or silage at a feedyard.
- May or may not have been given FDA-approved antibiotics to treat, prevent or control disease and/or growth-promoting hormones.



CERTIFIED ORGANIC

This beef comes from cattle that...

- Never receive antibiotics or growth-promoting hormones.
- May be either grain - or grass-finished as long as the feed is certified 100% organically grown.
- May spend time in a feedyard.



NATURALLY RAISED

The beef comes from cattle that...

- Never receive antibiotics or growth promoting hormones.
- May be grain- or grass-finished.
- May spend time at a feedyard.

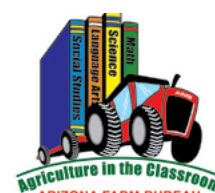
DID YOU KNOW?

Distinction is required for the label naturally raised and natural. Natural can be anything that is minimally processed. This label does not pertain to how that animal was raised, its diet, etc.

It's up to You to Keep it Safe

Farmers and ranchers work hard to produce safe and delicious food for people throughout the world. It is up to YOU to keep it that way. Here are some steps to help keep your meat safe after you bring it home from the grocery store.

- Keep your hands and cooking services clean: wash frequently.
- Defrost meat in the refrigerator or the microwave. Don't leave it out on the counter.
- Use a separate cutting board and utensils for raw and cooked meat.
- Check the temperature. The internal temperature for ground beef should be 160 degrees F.
- Store and refrigerate leftovers in an air-tight container. Not planning on using them in a few days? Freeze them instead!



This issue is provided by AITC as a partnership with the Arizona Beef Council. FREE teaching materials available at www.arizonabeef.org



To learn more about Agriculture in the Classroom and the other FREE classroom resources visit us at www.azfb.org/aitc, or contact Katie Aikins at 480-635-3608.

Information in this Ag Mag may be linked to the following Arizona State Learning Standards:

High School CTE Standards

Animal Systems Standard 10.0 Describe Food Safety and Processing Practices

Culinary Arts Standards 1.16 Identify minimum internal cooking temperatures