

Beef cattle nutrition

This fact sheet discusses beef cattle nutrition. It provides basic information on four areas:

- Factors that influence cattle nutrition
- Why it's important for producers to know about cattle nutrition needs
- How cattle use and process nutrients
- What resources are available to help producers meet their herd's nutrition needs

➤ Factors that influence cattle nutrition:

Beef cattle nutrition is not simplistic; it is influenced by a variety of biological and ecological factors. Your awareness of these factors can help you meet animals' nutrition needs. The following is a list of factors that influence beef cattle nutrition:

- Digestive system functions
- Animal's sex
- Breed type
- Diet: feed & rations
- Animal size
- Genetics
- Environment
- Body condition
- Animal's purpose in beef supply chain
- Animal age
- Weight

Producers can increase their knowledge about these factors by exploring sources that provide in-depth explanations about these topics.

➤ Why it's important for producers to know about cattle nutrition needs:

Nutrition is a very important part of raising an animal. Paying attention to cattle nutrition needs can benefit cattle producers in three ways: it can help producers properly meet animals' dietary needs, maintain and raise healthy productive animals, and achieve management goals.

➤ How cattle use nutrients:

Like all animals, cattle require a balance of nutrients for survival. An animal receives nourishment through their diet, which provides—in some form or another—a combination of six nutrients: water, carbohydrates, fats, protein, vitamins, and minerals. The bodies of healthy animals select and collect nutrients and use them to carry out basic life functions—the functions required to successfully eat, breathe, move and sleep.

Once animals have fully digested and absorbed nutrients, they can put them to use in other ways. This includes using nutrients for proper growth and maintenance, storing energy, and to transfer and provide nutrients to others.

➤ How cattle process nutrients—understanding a bovine's digestive process:

Cattle have a complex, unique and efficient digestive process. They are ruminant herbivores, which means they rely on plants for food. It also means they use four stomach compartments—the rumen, reticulum, omasum, and abomasum—to collect nutrients. The sophisticated functions of these compartments turn food into absorbable material for nourishment. A series of events, which includes regurgitation, sifting, and fermentation, must occur among the stomach compartments for ruminants to gain nourishment from the food they consume. The complexity of these processes is because ruminants have the unique ability to digest plants.

Cattle have a natural ability to break down cellulose, the building blocks that make up a plant cell wall. Cellulosic breakdown is a complex job performed by millions of microbes living inside the rumen. Microbes are crucial parts of a ruminant's digestive process. They help convert and utilize food material that other animals—humans, pigs, dogs and other monogastrics—cannot. The complexity and uniqueness of a ruminant digestive system makes them efficient at using plants for food. It also makes them important contributors in the food chain.

➤ **What resources are available to help you meet your herd's nutrition needs:**

Beef cattle nutrition can be complex. Common sense about animal health and care is the most useful resource, and fortunately, there are many other important resources to assist producers. These resources vary in depth, breadth and type. They include people, publications or a combination of specialized resources.

➤ **How educational resources can help you manage your herd:**

Each herd is unique and must be taken care of according to their unique needs. Successful producers pay close attention to the things that impact their herd. Geography, availability of resources, and independent herd goals are examples of things that play important roles in the unique management needs of your herd. Using educational resources can explain the specific topics that impact your farm or ranch.

Available resources by type:

Resource type:

Description:

Cooperative Extension

Cooperative Extension agents, regionally-focused outreach seminars, electronic & print publications, including newsletters & workbooks

Industry Specialists

Experts trained in ruminant nutrition—consultants, nutritionists, feed suppliers

Industry-supported publications

National Research Council's *Nutrient Requirements of Beef Cattle*, academic textbooks

Hands-on learning

Industry-sponsored seminars, short-courses and tutorials specializing in specific cattle nutrition topics, as well as general beef cattle management

Click on the Angus Education Center icon to access a list of herd management and education resources, including those on nutrition.