



THE BASICS OF NUTRITION for Your Livestock Project



Introduction

Each animal has specific nutritional requirements. These requirements are based on species, age, weight and physiological stage. Physiological stage refers to the stage of life or production they are in, such as growing, finishing, gestation and lactation. Animals perform their best when they are fed a complete diet based on these factors, are healthy, and are provided with a low-stress environment.

What are Nutrients?

Basic nutrients include protein, carbohydrates, fat, minerals, vitamins, and water. Each nutrient is essential to life and may be provided through a variety of feedstuffs in the diet. While each nutrient has many different functions within the body, their key roles are listed below.

1. Protein helps the animal grow and develop muscle.
2. Carbohydrates are provided in two different forms: sugars and fiber. Sugars help give energy and assist to increase fat deposition. Fiber is important for digestion, especially in cattle, sheep, goats, horses and rabbits.
3. Fat serves as another source of energy and increases fat deposition.
4. Minerals have numerous functions, but in general support bone growth and overall body function.
5. Vitamins help support the immune system and overall body functions.
6. Water is the most critical nutrient and has a role in nearly every bodily function.

Types of Feeds

While a feedstuff can provide more than one nutrient, certain classifications of feeds are often utilized to increase the amount of one or two nutrients in a feed. For example, some feedstuffs, such as cottonseed meal, are higher in protein. Grains, also referred to as concentrates, provide more simple carbohydrates (or sugars) to increase energy and fat deposition. Fibrous carbohydrates are provided through roughages such as hay and other forages. Minerals and vitamins are almost always provided in a premixed formula within a ration, or they can be added to a ration. Water exists in every feedstuff but must also be provided in the form of clean drinking water.

Types of Feeds (cont.)

There are several generic terms used to describe types of feeds provided to livestock based on their age and physiological stage. Those include starter, grower, finisher, and maintenance rations. It is important to remember that each animal will grow at a different rate. Therefore, the duration in which each of these rations is offered may be different for each animal, even if they are the same age.

- **Starter rations** are for young animals learning to eat feed. These are often the foundation for muscle and skeleton development, as well as the animal's future growth potential. Starter rations are higher in protein, higher in fat and lower in fiber.
- **Grower rations** are an intermediate ration that truly builds muscle and begins to lay down proper fat cover. Grower rations are often moderate in protein, moderate in fat and higher in fiber.
- **Finisher rations** are the final feed that gets an animal to market weight and readiness. Finisher rations are typically lower in protein, moderate in fat and higher in fiber.
- **Maintenance rations** are typically used in mature animals to keep them at their current weight.
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How Much Should I Feed?

Animals typically eat at least 2% to 3% of their body weight daily.

Example: A 100-pound lamb needs to eat at least 2 to 3 pounds of feed each day, whereas a 50-pound lamb needs to eat at least 1 to 1.5 pounds of feed each day.

Realize that these are general numbers, and animals may require more or less feed, depending on the type of feed you are offering and how much muscle or fat they are genetically disposed to have. Some animals may need to be fed more to grow more rapidly, whereas some animals may only need the minimum of 2% of their body weight in feed to keep from growing too rapidly. Each animal needs to be fed based on its individual needs. Your 4-H Agent can assist you with this throughout the year.

Understanding Supplements

There are many different supplements available for each species of livestock animal. Supplements do play an important role in show stock nutrition, but you must understand what your animal needs to enhance its genetic potential and how to properly use that supplement. Each animal's needs will be different, therefore you may not need to supplement all of your animals the same way.

Types of supplements include:

- **High fat:** Typically used towards the finishing stage to lay down a proper level of fat cover.
- **High protein:** Used to increase the protein content of the animal's normal ration and to increase muscle deposition.

Understanding Supplements (cont.)

- **High fiber:** Normally the main ingredient will be beet or citrus pulp and is used to create fill in the center of the animal. A drawback is that it can cause the animal to fill so much that they do not want to eat their normal ration.
- **Gastrointestinal health:** Often made of high levels of pre- and probiotics to keep the animal eating and maintain a proper balance of healthy microbes in the gut.
- **All purpose:** Generally high in protein, fat, minerals and vitamins. When fed correctly, they can work to enhance your feeding program.

General Feeding Tips

- Always offer free choice, fresh, clean water.
- Weigh the feed for each animal on a scale for every feeding.
- Clean out the feed trough if they do not eat everything.
- Slowly adjust an animal from one feed to another when you decide to change feeds. For example, when switching from a grower to a finishing ration, mix the two different feeds together over time to allow the animal's digestive system to adjust to the new feed:
Days 1 to 4: 75% grower and 25% finisher
Days 5 to 8: 50% grower and 50% finisher
Days 9 to 12: 25% grower and 75% finisher
Day 13: All finisher
- Feed twice a day and try to feed as close to the same time each day as possible.
- Weigh your animals as often as possible and record their weights.
- Feed tags should say what animal the feed is for and how much to feed each animal.
- Don't forget that some animals, such as cattle, sheep, goats, rabbits, and horses, require hay or other forages in their diet.

Summary

Remember that each animal will perform differently and therefore require different feeding regiments. Pay attention to each individual animal and feed according to their performance. Reach out to your local 4-H or extension agent for assistance when needed.



*Feeding your livestock project individually ensures that each animal is receiving their ration making it easier to customize based upon their individualized needs.
Photo by Abby Dunn*

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