

## Sheep Nutrition



Sheep nutrition should include water, energy (carbohydrates and fats), proteins, minerals, and vitamins. Sheep are ruminants so they eat grass, forbs, clover, and other plants found on pasture. Comparing a sheep to a cow, sheep tend to eat a greater variety of plants than cattle do. They particularly like forbs. Forbs are herbaceous (not woody), broadleaf plants that are not grass-like. Sheep prefer forbs as they are very nutritious. When pasture is not available, harvested feeds, such as silage, hay, green chop, and crop by-products. Grains are feed when higher nutritional needs are required. For example, pregnant ewes during the late gestation period, ewes that are nursing two or more lambs, or lambs that have the genetic potential for rapid growth should all be fed grain. However, if sheep eat too much grain, they can experience digestive problems. It is best to introduce grain slowly and gradually into their diet. Sheep are usually fed corn, barley, wheat, and oats. A protein source such as soybean meal or cottonseed meal should also be added to the diet. Vitamins and minerals are also required in the sheep's diet. Sheep should always have unlimited access to clean and fresh water. A sheep's feed and nutritional requirements might vary during the production cycle of sheep depending on their development stage.

### Maintenance stage

This is a production stage with the lowest nutritional requirements. Feeds of lowest quality can be used, including pasture or crop residue. Salt and minerals are still required to supplement diet.

### Pre-breeding stage

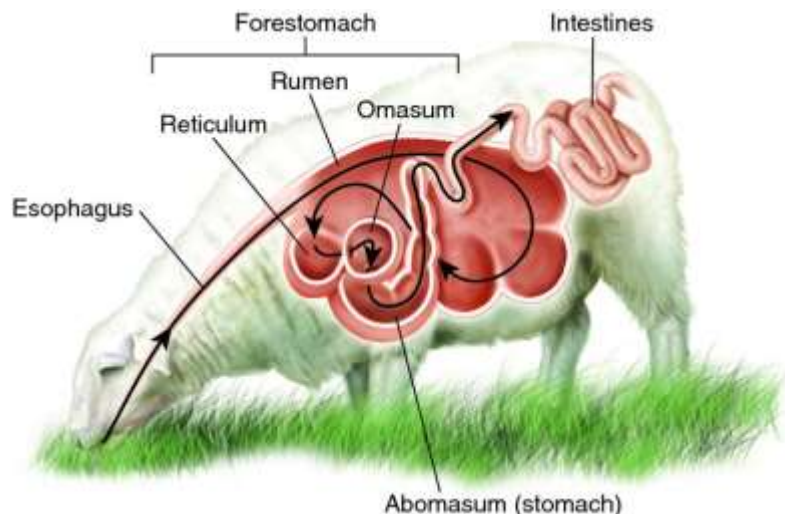
Prior to breeding, its required to increase dietary energy. In most cases, this can be done by increasing the level of grain 30 days prior to ram turnout and for about three weeks after the ram turnout. Minerals are very important during this stage.

### Late gestation stage

These are the last 40-45 days before lambing. Energy requirements are substantially increased, but overfeeding may cause dystocia. Dystocia means difficulty giving birth and is common in sheep and causes death of many lambs and ewes.

### Lactation stage

This stage also requires a high level of energy. Mineral supplementation is also important. The milk production peaks 2-3 weeks after lambing and it declines to the lowest point by 8-10 weeks.



## Copper Toxicity

Copper nutrition in sheep is quite complicated. It is a required mineral for sheep, yet highly toxic. Copper status of sheep is influenced by breed, age, health status, levels of other minerals consumed, and even levels of some feed additives in the diet. Presence or absence in the diet of sheep of other minerals and some ionophores affects the copper metabolism of sheep. Especially the level of molybdenum and sulfur in the diet. Molybdenum and sulfur act as antagonists to copper. The presence of these compounds binds with copper and prevent gut absorption and increase excretion of absorbed copper in the liver and body tissues. Molybdenum is often added to sheep diets to try to help prevent copper toxicity. However, molybdenum added at too high of levels can actually result in sheep having copper deficiency. Also, feeding ionophores (monensin, lasalocid) to sheep, which is done frequently, can result in increased efficiency of copper absorption by sheep. This is why copper nutrition is pretty complicated. There is a narrow range between required levels of copper and levels where toxicity can occur. In general sheep need four to eight ppm of copper in the diet, depending on breed, sulfur, and molybdenum levels in diet. Copper levels in a diet for sheep with molybdenum levels at three ppm or slightly higher can usually tolerate 20 to 25 ppm copper. Sheep fed diets lower in molybdenum than this tolerate lower levels of copper.

Methods to prevent copper toxicity include:

1. Do not feed swine or poultry feed to sheep. They contain high levels of copper by design.
2. Carefully investigate copper levels in beef or dairy products before feeding to sheep. Some of them will have high levels of copper, while others will not.
3. Communicate with feed company representatives or country elevators supplying feed. It is important that mixers are clean, augers clean, and feed delivery trucks clean before handling sheep feeds, especially if they mix swine feeds.
4. Test feeds and forages for levels of copper, molybdenum and sulfur.
5. Avoid grazing sheep on pastures where swine or poultry waste is applied.
6. Consider adding molybdenum to the diet at a rate of 3 ppm.
7. Have post mortems done on dead animals. This is a good routine management practice.

### Product of the Week

#### "O" Sheep Mineral



"O" Sheep Mineral is a complete mineral and vitamin package designed to meet the specific nutritional needs of sheep. Contains sulfate forms of trace minerals, OMRI-listed yeast culture, and certified-organic Icelandic kelp as a source of over 60 trace minerals and vitamins. Includes vitamins A, D3, E and B complex to meet daily vitamin needs. Also contains less than 50 ppm copper from natural, plant-based kelp source. This mineral helps improve reproductive health, immune system function and wool production.