

## The Basics of Feeding Sheep

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Feeding the ewe flock, whether they number a few or in the thousands, is one of the most important considerations in raising sheep. Without question, the biggest expense in sheep production is feed. Whether that be harvested feed ( hay, grain, proteins, minerals ) or standing forage ( pasture ). Overfeeding is expensive and not necessary, while underfeeding can lead to decreased performance and increased health problems.

What I will try to do in a series of articles is to cover sheep nutrition and to offer some guidelines on how to feed the flock. This first article will cover the basics of sheep nutrition. Future articles will cover feeding the ewe flock, feeding lambs and replacement stock.

### Feeding Sheep in a Nutshell

In its simplest terms feeding sheep consists of matching nutrients to the specific production phase of the sheep. Or, what to feed, how much to feed and when to feed it. For sheep, the major production phases are:

Ewes - Maintenance, Early Gestation, Late Gestation, Lactation, Breeding Season.

Lambs - Pre-weaning, Growing , Finishing.

Replacement Ewes - Growth, Breeding, Lactation, Post-weaning

Rams - Maintenance, Breeding Season.

Each of these phases has nutritional requirements associated with them , and through sheep nutrition research, guidelines have been developed to assist sheep producers to properly feed their flocks.

Nutrients of importance to sheep are the same as any animal; water, energy, protein, minerals and vitamins.

Most sheep nutrition programs are based on some type of forage as the primary feedstuff. This can be pasture or range forages, or harvested forages such as hay or silage. Often times when feeding ewes, forages are the sole source of energy and protein. However, sometimes forages need to be supplemented with energy, protein, minerals, and vitamins, depending on the nutrient needs of a specific class of sheep or the production phase they are in.

In a nutshell, feeding sheep successfully consists of matching nutrients and forage type and quality with sheep production stage. The rest is just details, although, often important details.

## Nutrients for Sheep

As mentioned earlier, the nutrients to consider for sheep are water, energy, protein, minerals and vitamins. A discussion of each, as related to sheep nutrition will follow.

**Water** The most important nutrient for any animal is water. Many parts of the U.S. take water availability for granted. While, in other parts of the country water availability may be one of the first limiting resources for sheep production. Delivery and availability is an important consideration.

There are many factors affecting the amount of free water a sheep needs to drink on a daily basis. Some of the most important factors are: production stage of the sheep, what feeds they are consuming, what the water content of the feed is, and environmental temperature. A sheep eating a high grain diet during the summer will drink more water than a sheep consuming lush early spring pasture when it is cooler.

In general, sheep will drink from 1/2 to 1 gallon of water daily, depending on animal size and the aforementioned factors. However, in the winter if snow is available ( not hard or crusted ), sheep will consume enough snow to meet much of their water requirements. In fact, it is an advantage for sheep as compared to cattle that sheep can satisfy much of their free water needs from snow. This is assuming that little to no production is expected from the ewes, i.e. they require maintenance nutrition only ( not lactating, in late gestation, or in a growth stage ).

Lack of a good clean water supply will definitely decrease the production potential of sheep. They will eat less, have lower digestibility of feedstuffs, be more prone to digestive and metabolic problems, and in general lack thrift.

**Energy.** Energy is the nutrient required in the single largest amount by sheep. It is also the nutrient most likely to be deficient or in excess. No doubt that the largest expense in raising sheep is the supply of energy to them for either maintenance or productive functions.

Energy needs of sheep are influenced by their body size ( weight ), the stage of production, the amount of exercise they get, fleece length and environmental factors ( temperature, wind chill, etc. ). Bigger sheep need a larger intake of energy than small or average size sheep. Sheep in drylot or in small pastures need less energy than sheep grazing over large range or pasture areas. In winter, sheep with short fleece need more energy than those with a full fleece.

The energy status of sheep is dependent on how much feed they are consuming, what the energy content of the feed is and what the digestibility of the feed is. Energy content of feeds are often described by the TDN content of the feed. TDN stands for total digestible

nutrients. Grains have TDN values in the 70 to 80% range, while, forages range from 50 to 60% TDN.

For example, sheep can have access to all the corn cobs that they want and still be in an energy deficient situation. This is because they have a limited capacity to consume a bulky, poorly digested feed, that lacks useable energy content. Conversely, lambs are often fed high grain diets to finish them for market. They are eating similar amounts of feed daily as those eating cobs, however, they would be growing quite rapidly. Again, the difference being the digestibility and energy content of the two feedstuffs.

**Protein.** Since sheep are ruminants animals the amount of protein eaten is more important than the quality of the protein. Sheep, because of the symbiotic relationship with rumen microbes, can take nitrogen or other low quality protein from the diet and synthesize useable protein for the animal.

Protein is usually fairly expensive, and thus, should be supplemented rather judiciously. Most average quality forages have an adequate content of protein for much of the ewes needs throughout the production year. The most common times when protein would be supplemented would be in times of high production. For instance, when ewes are lactating, lambs are growing, etc. Protein can also need to be supplemented when pasture or range plants are borderline in protein content, usually in early winter or after the plants have stopped actively growing.

**Minerals.** Mineral nutrition in sheep can be quite complicated. This article will cover the most common situations, with the most practical implications. Keep in mind that the mineral content of feeds are a direct reflection of the mineral content of the soil they were grown in. Thus, there are many regional differences in sheep mineral nutrition.

Minerals are classified as macro or micro. The difference between the classifications reflect the amount needed in the diet and not there physical size.

The macrominerals of practical significance for sheep include calcium, phosphorous, sodium, chlorine, and magnesium. These minerals often need to be supplemented to sheep. Good sources of calcium include; green forages, legumes, ground limestone, bone meal and dicalcium phosphate. Grains are very poor sources of calcium. Most grains have plentiful phosphorous, while forages are often low in phosphorous.

The ratio of calcium to phosphorous is extremely important, especially with rams or wethers. The diet should contain at least 2 parts Ca to 1 part P, to prevent a condition known as urinary calculi. If this ratio is not met stone or crystal formation can occur in the bladder and kidneys of sheep and they these can block the urethral tract and block normal urination. **This can be a life threatening situation for male sheep.**

Sodium and chlorine, when combined make good old fashioned salt. This is easily supplemented, yet, many sheep don't get salt and are actually salt starved.

Magnesium is extra important when sheep are grazing high moisture spring pasture or small grains such as wheat or ryegrass. Lack of magnesium can lead to a condition known as grass tetany. This can be prevented by using a mineral high in magnesium content.

Microminerals with the most practical implications include: Iodine, Selenium, and Copper.