

## Feeding the Ewe Flock

*This article first appeared in The Working Border Collie, Inc. in Nov/Dec 1997.*

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Feed is normally the largest single expense of a sheep operation. Feed or nutrition for the sheep operation consists of purchased or harvested grains, hays, minerals, vitamins, water expenses and pasture or range costs. Whether that operation consists of 25 sheep or 2500 sheep, feed will usually account for 50 to 70% of the total cost. One could logically infer that if feed costs can be kept under control, producers have a better chance of making money or losing less money. This is a correct assumption to a point, however, if nutrition is inadequate then animal performance is less than optimum and economic returns can be low. What and how much should I feed my sheep? That is a question that is asked quite regularly. The correct answer is; it depends. Depends on the weight of the ewe, the body condition of the ewe, the production stage of the ewe, the weather, the fleece length of the ewe, the nutritional profile of available feeds and other important considerations. Taking these factors into account allows one to specifically feed sheep to their nutritional needs, thus optimizing the cost of feed and ewe production performance.

### Forage Quality and Sheep Nutrition

Most sheep nutrition programs, especially for the ewe flock, are based upon the maximum use of forage. Thus, a few words on forage quality and its affect on sheep nutrition are in order.

When considering forage, two criteria are of importance; quantity of forage produced and nutritional quality. Both these criteria are influenced by the specie of forage and the stage of sexual maturity the plant is in when harvested (either harvested by the animal or mechanically). It is difficult to write specifically on this topic, since the many regions of the U.S. have different plant species that are adapted to the climate, soil and growing decisions unique to that location. However, generally legumes (alfalfa, clovers, lespedeza, etc.) are higher in protein, calcium and digestibility than grasses (fescue, bluegrass, etc.). Although, grasses will usually yield more total pounds of feed per acre than legumes.

The stage of development or sexual maturity of plants has a tremendous influence on the nutritional profile of forages. Forage quality is often described by the specific stage of development. For instance, early bloom, midbloom, seeds formed, etc. all describe stages of development. In general, the more developed a plant the higher the fiber content and the lower the digestible energy content. For example, a hay (or pasture) that has been cut during early bloom vs. One that has been cut when seeds have been formed will have a higher percent digestibility, a higher percent protein, and ewes can eat more of it. However, there will be less pounds of forage produced per acre with the early bloom as compared to the over mature forage.

One of the keys to feeding the ewe flock is to match the quality and quantity of forage to the specific production needs of the ewes. There are times when the ewes really need high quality forage and there are periods when low quality forages can be fed quite effectively.

### Ewe Production Phases

The production phases of the ewe flock are usually divided as follows:

- Maintenance or nonproductive phase.
- Flushing or the breeding season.
- Late gestation or the last 4 to 6 weeks before lambing.
- Lactation.

The National Research Council (NRC) has developed through sheep nutrition research, guidelines on what sheep need nutritionally specific to these phases. These NRC values have been developed as a good starting place to determine sheep nutrient needs, yet common sense still needs to be used when feeding sheep.

Monitoring ewe body condition score during the respective production phases is important. Sheep should be fed to a proper body condition relative to production phase. Body condition scores in sheep range from a score of 1 to 5. A 5 score would indicate an extremely obese ewe, while a 1 would be a ewe so thin her life would be at risk. A working range for body condition scores throughout the production year for a ewe would be from 2 to 3.5, depending on productivity level. To best determine body condition scores, handle ewes over the ribs, loin, backbone and hips. The amount, or lack of, fat in these regions determine the body condition score.

**Maintenance.** The maintenance period for ewes is the longest period in the production cycle for ewes. The maintenance period is when the ewe flock is not lactating and lasts up to about 30 days before breeding. Once the ewe flock has been bred, the first two-thirds of gestation is also considered a maintenance phase of nutrition. The term maintenance is used because the ewes only needs are to maintain themselves or if growth is expected, it is slow growth. The nutrient needs of a 150 pound ewe in maintenance as established by the NRC are:

Intake (dry matter basis) 2.6 pounds (1.7% of body weight)

TDN 1.5 pounds or 57%

Crude protein 9.5 to 10%

Phosphorus .2%

These requirements are fairly easily met with a wide range of feedstuffs. If hay is being fed it would take three to four pounds of medium to low quality hay to meet these requirements. Maintenance is often the phase where ewes are on pasture or some type of crop residue.

The lowest quality, cheapest sources of forage can be used successfully during the maintenance phase if the ewes are in adequate body condition. This is the production phase where sheep can be fed economically without lowering production levels. Provide them with adequate amounts of moderate to low quality forage, salt/mineral and water, and treat for internal parasites and they will do well.

**Breeding season nutrition.** The goals of the breeding season are to get ewes settled in as few of cycles as possible, minimize the number of open ewes, have ewes ovulate multiple eggs and have a low incidence of embryonic mortality. These goals are achieved by having the ewes in optimum body condition just prior to ram introduction (assuming the ewes have the genetic capacity for multiple ovulations).

The term flushing is used to describe increasing the energy content of a ration before the breeding season. Flushing can either be limit feeding high energy grains or the utilization of higher quality pasture. A common method of flushing is to feed ewes one-half to one pound of a grain (corn, milo, oats) per day for about 30 days before turning in the rams and continuing for about two weeks after ram introduction. The amount and length of feeding will depend on the body condition score of the ewes. A goal of a 3.0 to 3.5 body condition score at breeding will help increase the reproductive performance of the ewe flock. Flushing seems to be most effective early in the breeding season than later.

Mineral supplementation to the ewe flock prior to ram turnout is very important. Particularly, phosphorus and selenium status should be given extra attention. Feeding a high quality sheep mineral, without copper, is a must at breeding time.

**Late gestation.** Nutritionally, late gestation is an extremely critical production phase in the ewe flock. All nutrients are important to ensure as easy and productive a lambing season as possible. Late gestation is the last trimester of pregnancy and is 40 to 45 days in length. This is the period of the majority of fetal

growth. This also is the time period when the majority of the ewes mammary system develops. Thus, lamb growth and development and ewe milking ability is strongly influenced by late gestation nutrition.

Nutrition in late gestation is also influenced by weather conditions and the housing status of the ewes, fleece length, the number of lambs the ewes are gestating, and the body condition of the ewes. The ranges of daily nutrient needs outlined by the NRC (primarily dependent on expected lambing rate) for a 150 pound ewe are:

Intake (dry matter basis) 4.0 lbs. to 4.2 lbs. (2.6 to 2.7% of body weight)

TDN 2.3 to 2.8 lbs. (59 to 65%)

CP 11 to 12%

Calcium .35 to .4%

Phosphorus .25%

Again, these are only guidelines, and thin animals that have short fleece in cold conditions may need more energy. Common sense is important when feeding sheep, especially in late gestation.

Energy is especially important during late gestation as it affects lamb size and vigor at birth. Lack of energy results in small, weak lambs that are more prone to create problems for the shepherd and many of these are at increased risk for mortality.

A practical diet for ewes in late gestation would include 4 to 4.5 pounds of a medium quality hay (or pasture equivalent) and from .5 to 1.0 pounds per ewe per day of a grain concentrate such as corn. Fresh water and mineral are also crucial.

**Lactation.** Lactation is a very demanding period for ewes. Consider the composition of ewe's milk; 82% water, 25%+ milk protein (on a dry basis), 25 to 30% fat, high levels of calcium and milk sugars. Thus, if ewes are to milk well, they need a high quantity of feed, that is high in energy, protein, minerals and vitamins. Unlimited access to water is also important.

Ewes that are suckling more than one lamb will produce more milk because of the lambs nursing stimuli. So, ewes with twins need more feed, and of a higher quality than ewes with singles. If at all possible, ewes should be separated based upon number of lambs suckled and fed accordingly.

Again, body condition is very important when lactation feed needs are to be considered. Usually, during lactation (especially with twins) the ewe is in a negative energy balance. She simply cannot eat enough to satisfy her energy requirement with a forage based diet. It is normal that a ewe will lose weight during lactation. In fact, fat ewes at weaning time should be eyed very suspiciously, their milk production may be low. The key is not to let the ewes lose so much weight that they cannot regain it during the maintenance period.

Again, guidelines from the NRC for 150 pound ewes in lactation by number nursing:

	<u>Single</u>	<u>Twin</u>
DMI (dry basis)	5.5 lbs 3.6% of bodyweight	6.2 lbs 4.0% of body weight
TDN	3.6 lbs 65%	4 lbs 65%
CP	13.5%	15%
Calcium	0.32%	0.39%
Phosphorous	0.26%	0.29%

A practical method to meet the above requirements is to feed ewes 4.5 to 5.5 lbs of a good quality hay and a pound of a grain for each lamb the ewe is nursing. If the hay is low in protein then the diet may need supplementing with a protein supplement, soybean meal, cottonseed meal, etc. to get the protein content increased. Again, water and mineral are crucial.

Many producers lamb in the spring and then run the ewes and lambs on good spring grass. This system works well, but remember the high nutrient requirements of the ewe during lactation and the often inconsistency of forage quality and quantity between years. Certainly, the weather in the spring will determine the amount of spring forage available. If ewes nursing twins need to eat about six pounds of dry matter daily and the spring flush of grass contains 75 to 80% water, the ewe will need to eat around 25 pounds per day of pasture forage. Thus, observe ewes closely and supplement them with energy if needed in years of late and (or) low forage production in the spring.