

Ewe Nutrition

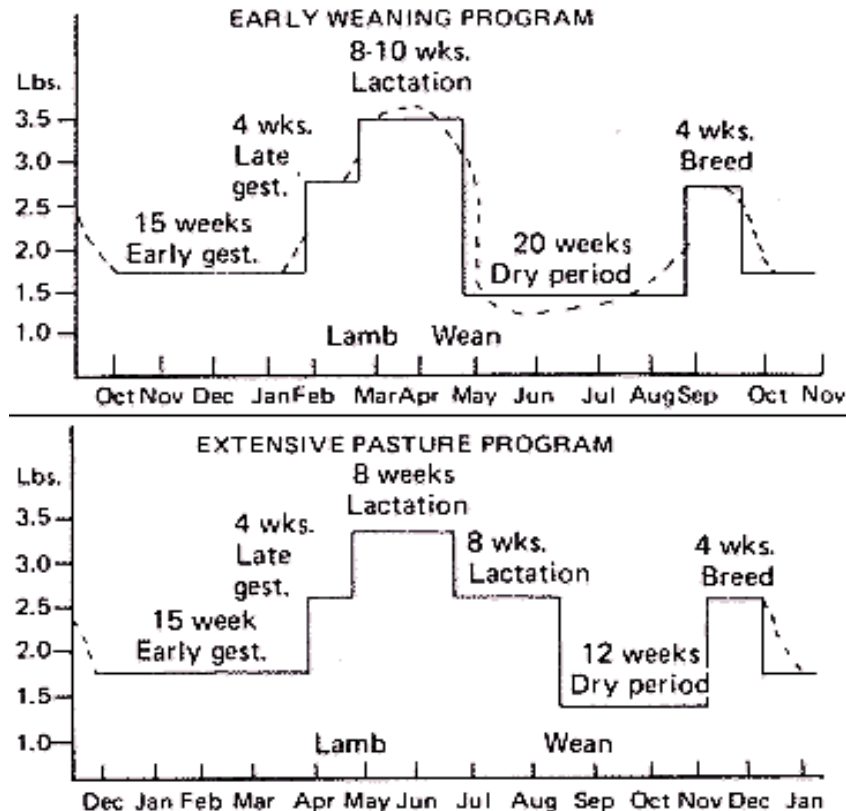
Ewe nutrition is one the most important aspects of production, as ewes that are fed well-balanced diets are more fertile, produce more milk and are more likely to wean a greater number of faster growing lambs. As well as producing more pounds of lambs per year, well-fed ewes are also healthier and, as a result, have a greater resistance to disease than ewes that are under nutritional stress. The nutritional requirements of a ewe, however, depend on her age and stage of production. For example, ewes in late gestation have different nutritional requirements than ewes, or ewe lambs that are lactating.

Ewe lambs have different nutritional requirements than mature ewes since they have not yet reached their adult body size at the time of first breeding. When first bred, ewe lambs should have achieved 75% of their expected mature body weight with a condition score of 3.5. If these objectives are not met, it will be difficult for the ewes to maintain condition in late pregnancy and to stimulate sufficient milk production to meet the requirements of the offspring. During pregnancy a ewe lamb will not only be supporting the growth of a fetus, but can also be expected to gain a further 10-15% of her mature body weight. Therefore, increased intakes of energy and crude protein will be required.

A ewe's production cycle can be broken down into seven stages: maintenance, flushing, early gestation, mid gestation, late gestation, lactation and post-weaning. Management in general, and nutritional management specifically, must change for each of these production stages if a producer is to have a successful lamb crop and, more importantly, good returns for market lambs.

The nutritional requirements for ewes are least during maintenance and early gestation; and are greatest during late gestation and lactation (especially for ewes carrying multiple fetuses or nursing twins). The diagram below indicates the changes in nutrient requirements as a ewe goes through the various stages of production. During all of these stages, ewes should be provided with a good source of trace minerals (mineral block or free choice) and ample amounts of fresh water.

Figure 1. Daily TDN requirement year round of 154 pound Ewe



Maintenance

The term 'maintenance' means that the animal is not producing heavily (i.e. reproducing, lactating, growing, etc) and, subsequently, does not have any extra energy requirements above normal body functions. The maintenance period for ewes lasts from the time the lambs are weaned to ~2-3 weeks prior to breeding (flushing period). Pasture grazing, or if in confinement, a mixture of hay and straw should be sufficient to keep ewes in good condition. The ewe's body condition score at weaning will largely determine the amount of feed that she will need during this time. For example, animals that are over conditioned should lose some weight (an excellent opportunity to utilize low quality feeds), while those that are under-conditioned should be allowed to gain weight. Each ewe should be assessed individually at weaning and penned or pastured with ewes in similar condition. Midway through the maintenance period ewes should be condition scored again and the leanest ewes separated for preferential treatment. The goal for the producer is to have the ewes with a condition score of 3, three weeks before breeding begins.

Flushing

Flushing is the practice of increasing nutrient intake and body condition during the 2-4 weeks leading up to breeding (i.e. increasing from body condition score of 3 to 3.5 when the ram is turned-out). Its purpose is to increase a ewe's ovulation rate and therefore increase the chances of multiple births. How successful flushing is depends on the age of the ewe (mature ewes show a greater response than yearlings), its breed, body condition when flushing commences, and the stage of the breeding season. For autumn breeding, the greatest response to flushing is seen early and late in the breeding season. During mid-portion of the breeding season, when ewes are naturally most fertile, flushing is less effective in increasing lambing percentage. Ewes that have not recovered from previous lactation receive the most benefit from flushing, while the practice is least effective (i.e. no response) on ewes with a fatter than normal body condition.

Flushing is generally accomplished by providing ewes with an increased plane of nutrition for 2-4 weeks prior to introducing the ram and continuing 2-4 weeks into the breeding season. This can be accomplished by providing fresh pasture, supplemental harvested forage, or by feeding $\frac{1}{2}$ to 1 lb/head/day of a grain mix (oats, barley, and corn), depending on environmental stress (time of year), availability of forage, and body condition of ewes.

After breeding, the ewe flock is best maintained on good pasture, or if they are in a confinement feeding system, they should be fed enough to allow the ewes to maintain their body weight. Hay and/or silage fed *ad libitum* should be sufficient, however, poorer quality roughage during this period requires some supplementation with grain.

Early Gestation (15 weeks)

In early pregnancy, while fetal growth is minimal, the total feed requirement of the ewe is not significantly different from the maintenance period. However, nutritional management in the first month is still important for minimizing early embryonic losses. Ideally, the target for nutritional management in the first month of pregnancy would be maintenance to a slight increase in weight.

Early in pregnancy, ewes should be fed a similar ration to ewes on maintenance rations, with a slight increase in the amount offered. The National Research Council (NRC) suggests a post flushing weight gain of 0.03 kg (0.07 lb) / day.

Mid Gestation (up to 100 days)

Five weeks after breeding, the embryos are well established in the uterus, although their weights are insignificant. A live weight increase for the ewes of approximately 2 kg (4 lb.), in months two and three, equates to a 1 kg loss from the ewe's own tissues. While such a loss is tolerable, severe under-nutrition for even short periods can profoundly affect fetal development. Any degree of under-nutrition will have greater impacts on ewes that are already in poor condition.

Over-feeding during mid-pregnancy can also be detrimental. Increasing a ewe's body condition score above 3.5 at this time is wasteful, and increases feed costs. In addition, excessive abdominal fat combined with the increased uterus size can physically restrict the ewe's feed consumption in late pregnancy.

It should be noted that when weight is lost at any time during the ewe's reproductive cycle, it must ultimately be regained at a later date. In terms of total nutrient requirements it is more costly to lose and regain weight than to simply maintain it.

Late Gestation (last 4 weeks)

Next to lactation, the late gestation period has the greatest nutrient demands for fetal growth, with approximately 70% of fetal growth occurring in the last six weeks of pregnancy. This is also when the ewe starts to put nutrients towards milk production. Inadequate nutrition, especially low energy levels, during this time will have detrimental effects on milk production of the ewe and the birth weight and vigour (survivability) of the lambs.

During this stage of production the plane of nutrition should be increased gradually until lambing. Ewes should be fed good quality hay or silage and grain rations should be increase from 0.23 kg (0.5 lb) grain per day at six weeks before lambing to 0.68 kg (1.5 lb) at lambing.

Lactation (6 to 12 weeks)

This stage of production is the most physiologically demanding for ewes and, therefore, nutritional requirements are at their highest. A lamb in the first four weeks of life is totally dependent upon the nutrients provided by the ewe's milk, so optimizing milk production is critical. Body fat reserves of the ewe may contribute as much as 25-30% of the energy required to produce milk during the first month after lambing. Therefore, even with an increase in dietary energy ewes will generally lose condition during this period. Although body protein does not contribute greatly to milk production, additional protein should be added to the ration at this time, to help the ewe's system recover from lambing. Good quality hay should be available free choice. In addition, grain should be fed at 0.7-0.9 kg (1.5 – 2.0 lb) for single lamb ewes and 0.9-1.4 kg (2.0 – 3.0 lb) for ewes supporting twins or triplets.

It is recommended that ewes nursing multiple lambs be segregated from the rest of the ewe flock, as their nutritional needs are significantly higher than ewes nursing singles. Milk production of ewes that are nursing multiple lambs peaks earlier and declines faster, and so it is also recommended that an effort be made to introduce their lambs to creep feed as soon as possible.

Providing ample amounts of fresh water is particularly important during this stage, as the ewe's requirement will increase significantly.

Post Weaning

After weaning the nutritional requirements of the ewe are no longer as critical. A maintenance ration is all that is required for the period between weaning and flushing.