

Late gestation in ewes and does

The last month in which a ewe or doe is pregnant is extremely important. This is because almost 70 percent of fetal growth occurs during the last trimester. At the same time, the female's udder tissue is developing and her rumen capacity is decreasing. Extra nutrition is usually required to support a successful pregnancy and lactation.

Energy (TDN) is the nutrient most likely to be deficient during the last month of pregnancy. Some grain is usually fed during this period because grain is the most concentrated source of energy. Often, it is not possible for high-producing females to consume enough forage (fresh or dry) to meet their late gestation nutritional requirements.

The exact amount of nutrients (or feed) that a pregnant ewe or doe needs depends upon her age, size (weight), breed (sometimes), and expected level of production (fetal numbers and milk producing potential). Environmental conditions (climate and housing) can also affect nutrient requirements.

During late pregnancy, it is common to provide hay free choice to females and to supplement them with $\frac{1}{2}$ to 1 lb. of grain. The composition needed in the grain will depend upon the type and quality of hay fed. The amount of grain will depend upon the size of the females and their expected lambing or kidding rate.



Overfeeding and underfeeding can both have negative consequences on the outcome of a pregnancy and the female's subsequent lactation. Insufficient nutrition may lead to pregnancy toxemia (also called ketosis), the birth of small and weak babies, higher neonatal mortality, reduced quantity and quality of colostrum, poor milk yield, and reduced fiber production (in the offspring via fewer secondary follicles).

Fat females are also more prone to pregnancy toxemia, as broken-down fat produces toxic ketone bodies. Overweight females are more likely to prolapse their vaginas and have difficulty delivering their offspring. While some males may sire oversized fetuses, the more common cause of oversized fetuses (and subsequent dystocia) is overfeeding during the final month of pregnancy.

Young females

Ewe lambs and dealings that are bred to lamb and kid when they are yearlings (12 to 15 months of age) should be fed and housed (or pastured) separately from mature

females. This is because they have higher nutritional requirements than mature ewes. In addition they may have trouble competing for feeder space and getting their fair share of feed, especially grain.

Calcium

The female's requirements for calcium virtually double during late gestation. An insufficient intake of calcium may result in milk fever (hypocalcaemia). Free choice mineral mixes do not ensure adequate calcium intake. Milk fever can also result from the female's inability to mobilize calcium reserves from her bones. This is usually caused by excessive calcium in the diet.

Grains (corn, barley, and oats) are poor sources of calcium, while legume hays tend to be rich in calcium. Ground limestone can be added to the ration to increase the calcium content or a commercial sheep or goat feed can be fed. Milk fever and pregnancy toxemia present similar symptoms. Diagnosis is usually made on the basis of the animal's response to treatment (calcium vs. propylene glycol).

Selenium

Inadequate intake of selenium (and/or vitamin E) may result in poor reproductive performance, retained placentas, and white muscle disease in lambs and kids. Ideally, selenium should be “force-fed” to pregnant females through a grain mix or TMR. Otherwise, a “loose” mineral mix that contains the legal limit of selenium should be offered free choice.



Dietary supplementation of selenium is always preferred to giving injections. However, injections can be given (to lambs and kids) if dietary sources of selenium fail to prevent white muscle disease. Injectable selenium must be obtained from a licensed veterinarian.

Vaccinations

Ewes and does should be vaccinated for *clostridium perfringens* type C and D (overeating disease) and tetanus approximately one month before lambing and kidding. This way, newborns will acquire passive immunity when they consume the colostrum (dam's first milk). Vaccinating the pregnant female is the only way to protect young lambs and kids from type C and provide early immunity to tetanus. Females that have never been vaccinated or whose vaccination status is unknown require two vaccinations during late pregnancy.

Internal Parasites

The periparturient rise in worm eggs is a natural phenomenon whereby small ruminant females suffer a temporary loss of immunity to internal parasites (worms) at the time of parturition (birthing), resulting in higher fecal egg counts. In spring-lambing flocks, this periparturient rise often coincides with the “awakening” of previously arrested worm larvae, further worsening the problem. In addition, the

worm eggs deposited by the dam are the primary source of infection for young lambs and kids.

There are several strategies for dealing with the periparturient egg rise. A common (and traditional) recommendation is to deworm all ewes and does prior to lambing and kidding. All of the anthelmintics are deemed safe for pregnant females, with the exception of Valbazen®, which should not be given during the first 30 days of pregnancy or ram removal.

FAMACHA©, body condition scores, and other criteria can also be used to make selective deworming decisions at the time of parturition. Another strategy is to increase the protein level of the ration. Extra protein in late gestation has been shown to reduce the periparturient rise of eggs in ewes.

It's always a good idea to feed a coccidiostat (e.g. Bovatec® or Rumensin®) to ewes and does during their last month of pregnancy. This will reduce the number of coccidia oocysts in the lambing and kidding environment, which will help young lambs and kids to develop immunity to coccidia without developing clinical disease. An added benefit is that coccidiostats may aid in preventing abortions caused by toxoplasmosis.

Abortions

If there is a history (or high risk) of abortions, antibiotics can be fed to ewes during the last month of pregnancy. Chlortetracycline has been FDA-approved for use in sheep to prevent abortions caused by *Chlymidia* spp. and *Campylobacter* spp. Its use in goats requires veterinary approval.



In the event of an abortion “storm,” injectable antibiotics can be given to the remaining females. Aborting females should be isolated. Their pens should be sanitized. Aborted fetuses and placentas should be destroyed to prevent transmission of the abortive agent.

Certain mineral deficiencies can cause abortions and affect newborn viability. Goats that are housed with sheep and/or fed sheep feeds or mineral mixes may be copper deficient and require copper supplementation . As with copper toxicity in sheep, copper deficiency in goats (and sheep) is complicated. There are various environmental factors and interactions with other minerals involved.

Shearing

It is generally recommended that fiber-producing animals be shorn at least one month prior to parturition. Shearing offers numerous advantages to both the female and her offspring. At the same time, freshly-shorn animals need proper shelter and have higher nutrient requirements than fully-fleeced animals.

Crutching, a short modification of shearing in which wool around the vulva and udder is removed, is recommended when fully-fleeced animals are not sheared.

Facilities

During the last month of pregnancy, ewes and does should be kept at the location where they will lamb and kid. They should be allowed adequate exercise. Unfamiliar groups of females should not be mixed. Females should not be unduly stressed in any way. Lambing and kidding facilities should be prepared at least one week before the first lambs and kids are due to be born.



It goes without saying that ewes and does need a clean, dry, draft-free place to give birth and bond with their babies. If lambing and kidding will occur on pasture, it should be on a clean, well-rested pasture with access to shelter.

After birthing, it is common to put the female and her offspring in a small pen (called a “jug”) for 1 to 3 days. This facilitates bonding and gives the shepherd easy access to the dam and babies. There should be at least one jug per 10 females. The jugs should be approximately 5 ft. x 5 ft. They can be bigger or smaller based on female size. If birthing occurs on pasture (during mild weather), usually only females with problems are separated and penned.

Supplies needed for lambing and kidding should be accumulated ahead of time. The following table contains a suggested list of supplies to have on hand at the time of lambing and kidding.

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| Frozen colostrum | Prolapse retainer or harness | Weigh sling |
| Milk replacer | Colostrum supplement | Elastrator |
| OB lube | Needles and syringes | Ear tags |
| OB sleeves | Antibiotic(s) | Rubber rings |
| OB lubricant | Nylon rope or snare | Nipples (teats) |
| OB S-curved needle | Esophageal feeding tube | Disinfectant |
| Hanging scale | Thermometer | Heat lamb or warming box |
| Dextrose | Oral dosing syringe | Propylene glycol |
| Bo-Se | Calcium borogluconate | Pocket record keeping book |

Proper nutrition and management during the last month of gestation will go a long way towards ensuring a successful lambing and kidding season. Poor nutrition and management may result in a disastrous lambing and kidding season.

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