

PUBERTY AND DEVELOPMENT OF REPLACEMENT FEMALES FOR YOUR FLOCK OR HERD



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Defining Puberty

Puberty in females is defined many ways, including age at first ovulation, age at first estrus or age at which a female can support pregnancy. For production purposes, the age at which a female can support pregnancy is often the most practical definition. To support pregnancy, a doe or ewe should be an appropriate frame size and body composition. She must have also reached a certain metabolic and physiological status to conceive, sustain pregnancy and support proper fetal development. Average age at puberty for both sheep and goats is 4 to 6 months. However, puberty may occur as late as 12 months of age in both species.

Frame Size and Body Condition

Doelings and ewe lambs should not be bred until they have reached 60% to 70% of their mature weight. In addition to proper frame size, they should be at an average body condition score of 2.5 to 3. It is important to realize that these females are still growing. Asking them to continue their growth, maintain pregnancy and properly develop kids or lambs at the same time is a significant demand.

Nutrient Requirements

Animals consume 2%-3% of their body weight daily. Growing animals may be able to consume more if it is offered. The amount of fat deposited influences every metabolic process, in turn influencing production of reproductive hormones. Too little fat cover will delay the onset of puberty despite adequate frame size and weight. Caution should be taken to prevent them from becoming overly conditioned. Too much fat can lead to kidding and lambing problems.

Some producers develop replacement females by solely utilizing grazed forages. Cool-season forages can meet nutrient requirements during early development when lambs or kids are learning to graze. Some warm-season forages may meet nutrient requirements after weaning, but lower rates of gain are often seen. Forage samples should be sent for nutrient analysis to gain a better understanding of the nutrients your animals are consuming. Supplementing with grain, such as corn or oats, or a commercially mixed ration has been shown to increase rate of gain and may be necessary to meet nutrient requirements. Grains should be processed to increase their digestibility. Offering a free choice mineral may also be needed to reach the animal's requirements. This can be determined through forage and feed analysis.



Flock of meat sheep grazing in pasture.

Nutrient requirements are based on the breed, age, size and physiological status of the animal. Factors such as stress and extreme weather can influence nutrient demand, as well. Crude protein requirements can vary from 12%-18%, and the amount of total digestible nutrients needed ranges from 60%-70%. Your local AgCenter extension agent and veterinarian can help you determine the requirements for your herd or flock.

Environmental Influences

Environmental factors can impact age at puberty in females. Sheep and goats are classified as seasonally polyestrous species because their sexual receptivity peaks during the fall and winter months. Likewise, the onset of puberty is more commonly seen in fall and winter months. Some sheep and goat breeds are known to breed out of season and continue to display signs of estrus throughout the spring and summer. Puberty in these breeds can also occur in the spring and summer.

Housing females near a mature, intact male has been shown to hasten the onset of puberty in females. This is referred to as the "ram effect" or "buck effect" and works after the females have been isolated from a male for at least three weeks. The distance recommended between males and females during isolation varies. Most sources recommend a minimum of 1 mile of separation during this isolation period. In mature females, estrus is seen within a few days after exposure to a male. Exposure of doelings or ewe lambs for the onset of puberty may take several days to a week, and not all females will respond. It is important to note that doelings and ewe lambs must be peri-pubertal, or close to

puberty, for the buck or ram effect to work. It should also be noted that fencing or space between the male and females needs to be secure to prevent breeding.

Herd Health

Herd health protocols can vary based on region. Local veterinarians will be aware of the vaccinations needed to prevent diseases common to your area. Many vaccinations and medications require a prescription, and a working relationship with your veterinarian is essential to maximizing flock or herd management. Producers should work toward having their flock or herd certified as scrapie-free in the Scrapie Free Flock Certification Program with the United States Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS). More information on obtaining a premise ID, flock ID tags, and submitting samples for testing may be found by searching "National Scrapie Eradication Program" at www.aphis.usda.gov.

Summary

While it is most common to breed ewe lambs and doelings to lamb or kid at 1 year of age, it is important to develop the most realistic strategy for your program. Oftentimes, breeding females to lamb or kid as a 2-year-old may be more practical to ensure proper growth and development of the replacements. Optimizing management plans for replacement females can take time and should be improved each year. Resources such as local extension agents and veterinarians will help determine nutrition and health requirements for your flock or herd.



Small herd of commercial does and kids grazing.

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