



Small Ruminant Edition Fall 2021

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Optimize Lactation Performance of Dairy Goats Through Dry Period Nutrition

*Written by: Kristin Thompson, MSc., PAg, Ruminant Nutritionist & Srdjan Nesic,
MSc, Ruminant Business Manager*



The dry period is the vital link between lactations for dairy goats. During this time period, the animals' nutritional status, as well as overall management, will determine the does physiological response to kidding and her subsequent performance during lactation. Ensuring that she is entering into her next lactation with an optimum nutritional status is the best method to promote her success and positively impact profitability for producers.

During the dry period, the mammary gland is regenerating in preparation for the next lactation. At the same time, the rumen is adapting to a diet that is high in forage when compared to a lactating doe ration. Research suggests that if does are not dried off between lactations, they produce smaller kids, have reduced colostrum quality and decreased total milk production. It is also important to remember that dairy goats are susceptible to multiple metabolic disorders during late gestation and early lactation. The majority of these disorders can be directly linked to specific nutritional imbalances that occur during the dry period. For example, the most common metabolic disease with dry goats is pregnancy toxemia, also known as ketosis, that occurs in late pregnancy. This

occurs when the does energy demands are increased during a period of negative energy balance, such as at freshening and the liver cannot fully utilize fats that are being broken down. This produces ketones, which can overflow into the bloodstream. Ketosis is found mainly in over-conditioned does and does carrying multiple kids.

The majority of farms will have a predetermined lactation length and dry off date for their herd. New-Life Mills recommends gradually decreasing the inclusion of a top dress ration in the last month or month and a half prior to drying off. Similarly, during this time, we recommend feeding less grain within the total ration and increasing the forage content, which will help to slow down milk production. Following dry off, the feeding program needs to be simple, but effective to prepare does for kidding and lactation. Dry goats should be provided with free choice, high quality 1st cut dry grass hay along with New-Life Mills' dry goat mineral, at a rate of 35-40g per head per day. Straw should not be fed to dry goats as this may result in kids that are smaller. If does are in good condition, feeding dry hay along with a mineral is enough to meet nutritional requirements throughout the first

four weeks of the dry period. However, it is important to continuously monitor the herd to ensure no does are becoming too fat or too thin. If does are thin at dry off, additional grain may need to be fed. It is recommended to aim for a body condition score (BCS) of 3-3.5.

Four weeks prior to kidding, dry goats should be provided with a grain ration, starting around 0.5-1lb per head per day. Slowly increase the grain level during this period till the does are consuming 2-2.5lbs per day and fed 2x per day. The provision of a higher energy ration prior to kidding aids in preventing pregnancy toxemia. New-Life Mills' 18% Pre-Fresh Ration is designed with high quality sources of protein and energy to promote a healthy kidding and allow the doe to excel in her next lactation. It also contains yeast for improved rumen health and chelated trace minerals for improved bioavailability.

Conclusion

Dairy goats are presented with a multitude of changes between the end of one lactation and the start of the next. During this dry period, her diet changes from a lactating ration to a dry ration and then back to a lactating one. At the same time, she is experiencing increased energy demands and decreased feed intake, along with mammary gland development. Proper nutrition is important in ensuring she is prepared for her next lactation. Talk with your New-Life Mills Representative on optimizing your dry goat rations.

Points to Remember!

1. Ensure adequate feed and water intake.
2. Reduce the energy level of the ration 2-3 weeks prior to the dry off date.
3. Begin feeding New-Life Mills' 18% Pre-Fresh Ration 4 week prior to kidding to ensure appropriate energy intake.
4. Do not feed straw based diet to dry goats.
5. Discuss with your New-Life Mills' Small Ruminant Specialist for ration balancing and feed testing.

Meet: Kristin Thompson!

Ruminant Nutritionist



I grew up in rural Saskatchewan on a mixed farm operation, where we raised an assortment of livestock and poultry species. Growing up on a farm and through the 4-H program instilled a deep love for agriculture and drove me to pursue the tremendous opportunities that this industry has to offer.

I attended the University of Saskatchewan where I obtained my Bachelor of Science in Agriculture, specializing in Animal Science and later a Masters Degree in Ruminant Nutrition and Genetics. I had the opportunity to work with a livestock genetics company in Saskatchewan prior to starting with New-Life Mills in 2015.

When not working, I can be found on the farm where I live with my husband, two children, dogs, cats and horses. We are currently cultivating our own farm vision and look forward to having our children grow up in this industry.

One of the main reasons I love working in agriculture is the people. I can't think of any other industry where I would rather spend my career. People in agriculture are some of the most hard-working, innovative and entrepreneurial individuals in the world, and I appreciate learning from everyone that I meet.



Raising Your Next Generation of Milkers

Written by: Rami Kridli, Ruminant Technical Representative, PhD

Ewe lambs are the future stock of a dairy sheep operation and they need to be reared properly to ensure they reach their full genetic potential as mature ewes. Most of today's producers breed their young females so that they are lambing at 12 to 14 months of age. This is done for two primary reasons: to improve the lifetime productivity of the female (more lactations and lambs born over her lifetime) and to accelerate the genetic improvement of the flock (selected young stock have improved genes compared with the rest of the flock).

Depending on the breed, ewe lambs are usually bred at around 7 to 9 months of age. However, more important than age at first breeding, is ensuring ewe lambs reach 40 to 70% of their mature body weight before rams are introduced. In large dairy sheep breeds, it is advisable to wait until they reach 60-70% of the mature weight. A higher body weight at first breeding, results in improved reproductive performance including better fertility, higher pregnancy rate and increased litter size. Therefore, producers may be tempted to push for higher post-weaning weight gains in order for ewe lambs to reach a higher body weight before mating. However, high-

energy post-weaning diets, may create undesired long-lasting effects on the development of the young females' mammary gland.

Raising ewe lambs according to recommended feeding programs allows for proper development of the rumen and the mammary gland. The stomach of a young, milk-fed lamb works like that of a monogastric animal, such as swine, where energy is absorbed through enzymatic digestion. Introducing grain through creep feeding before weaning allows the gradual development of a functional rumen whereby the absorbing fingers, called papillae, of the rumen wall grow longer, which increases the surface area for nutrient absorption. The longer the papillae are, the better. As the rumen develops, young lambs transform into ruminants and begin absorbing volatile fatty acids, which are the end products of bacterial fermentation within the rumen. These volatile fatty acids become the animal's primary energy source.

During this early stage of development, the ewe lamb's mammary gland grows at the same rate as the rest of the body. Between approximately 2 to 3 months of age and puberty (5 to 9 months,

depending on breed), the mammary gland grows at a higher rate than the rest of her body. It is during this period that the secretory tissue of the mammary gland develops, determining the milk production potential of the ewe lambs. Overfeeding ewe lambs during the pre-pubertal period causes fat deposition in the mammary gland at the expense of secretory tissue development, thereby compromising future milk production. These udders may appear normal in size but contain more fat and less alveoli (milk secreting tissue in the udder). Numerous studies have shown that rapidly reared ewe lambs produce less milk than those with a controlled rate of growth during the pre-pubertal period (around 200g of gain/day). After puberty, mammary gland tissue growth rate is similar to that of the rest of the body. During pregnancy, the ewe lamb undergoes another phase of rapid mammary gland development until lambing.

Accelerating growth of pre-pubertal ewe lambs to breed at a younger age results in increased feed costs that don't end up in improved productivity or profitability. Similarly, these ewe lambs have reduced mammary gland development leading to lower milk production as mature ewes.

Recommendations for raising replacement ewe lambs:

- Offer pre-weaned lambs a creep ration that is properly balanced for protein and energy. This allows the lambs to become used to grain and promote rumen development. An 18% pellet is ideal for body growth and rumen development.
- Offer a 16-18% pellet (or concentrate mix) in addition to medium to good quality hay for the first month or two after weaning.
- Raise weaned replacement ewe lambs in homogeneous age groups with animals of similar nutrient requirements.
- Feed replacement females in a different group from your market lambs. Their target gain should

be around 200g/day. This rate of gain still allows timely puberty of the females.

- From around 2.5 to 3 months of age, energy intake of replacements should be restricted to 65-70% of their ad libitum intake (offer 1-1.25lb 16% pellet or concentrate mix in addition to free-choice good quality hay).

Plan and select the adequate nutrition program with your New-Life Mills Technical Representative in order to achieve desired average daily gains, ewe lamb growth and optimal mammary gland development. Remember this is a key group that will determine your flock's future milk production.

Promote a healthy transition into lactation with...

Dairy Goat 18% Pre-Fresh Ration



Designed to be fed 4 weeks prior to freshening

1. Formulated with chelated trace minerals and organic selenium for improved bioavailability
2. Includes yeast which benefits rumen function and stability
3. Provides readily available sugars to help prevent toxemia



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