



FORAGE FOR MILKING DAIRY GOATS

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For many producers their goat's forage is gleaned from pasture the bulk of the year. Goats harvest the forage themselves. For a few months the pasture is supplemented with stored hay – generally, grasses and legumes cut in the field, dried, and then baled and stored for feeding at a later date. Many producers have the opportunity to develop more progressive strategies for this important component of the ration.

In December Dr. Carpenter and I presented “Forage for Milking Dairy Goats” at the 2022 Dairy Goat Management Seminar. We helped producers bring into focus what forage is, helped answer what makes it palatable to goats; and discussed how to determine whether it meet their nutritional needs and is it an economical base for the ration.

Silage is an excellent option for producers who try to maintain a consistent, high-quality forage. Grasses or other crops, such as corn, alfalfa or forbs are cut, fermented and compressed until they're ready to be fed to the livestock. For high producing herds depending on a consistent diet that meets their nutritional needs, many have found that corn silage fed via a total mixed ration (TMR) combines nutrition and economics to build bigger margins.

We asked the attendees what forages they feed. The majority feed alfalfa hay; a few fed grass hay, fewer fed baleage and fewer still fed corn silage. That was interesting to us, and we'll

explain as we continue. Goats possess physical characteristics and eating behaviors that set them apart from other ruminants. Their narrow mouth and mobile upper lip and tongue all contribute to diet selection. Goats are selective eaters who prefer to browse rather than graze. They will select only the higher quality portions of plants (i.e., the top leafy portions when grazing) leaving behind what they deem to be less desirable. For stored forage things are a bit different- today we will focus on stored forages.

Any discussion of the roles of forage must provide the understanding that forages provide energy, protein, rumen fill and promote rumen health.

But first let's review the five periods of doe production and why they are important to the forage in their diet. In early lactation, production was initiated with parturition and increases faster than her ability to consume nutrients, resulting in a negative energy balance and weight loss. High protein and energy forages help maximize production and minimize weight loss.

In mid-lactation, from three to six months postpartum, high quality forages will help the doe to catch up to the nutrient requirements for milk production.

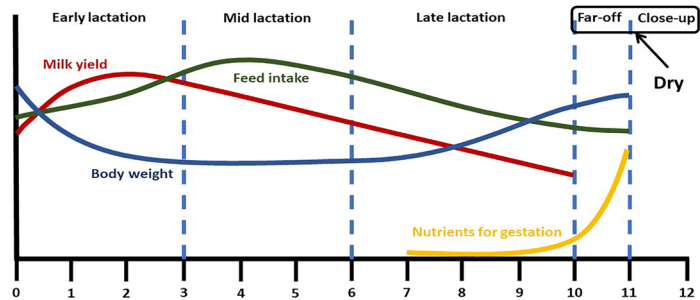
Late lactation is when body condition should be added as it is easier to put weight back on at this time rather than the dry period. However, at the end of lactation, energy should be reduced and a lower quality forage should replace the high quality forage.

During the dry period, does should not gain excessive weight. Fat does will have a more difficult time kidding and are more susceptible to metabolic disorders like pregnancy toxemia and ketosis. The three to four weeks prior to kidding and immediately after kidding is the transition period. Transitioning to the higher-quality forage that the milking does are consuming will help prevent metabolic issues and hasten milk production increases.

From the opening comments you know that we are focusing on stored forage which implies that it is being fed from some kind of bunk. Every doe should have adequate space and time to consume the dry matter intake it needs.

Goats have a higher dry matter intake (DMI) for their body size compared to lactating dairy cattle. Average DMI is five percent of body weight compared to three percent in dairy cattle. A high producing doe will consume

5 Periods of Dairy Doe Production



Adapted from *Dairy Goat Production Basics*, Langston University

up to seven percent of its body weight. This results in a faster rumen turnover rate and shorter retention time of ingested feed. Multiparous does have higher DMI compared to primiparous does. DMI generally peaks about 8-12 weeks after kidding. DMI can also be affected by dietary energy and protein level. Higher protein levels will lead to increased DMI while increasing energy levels will decrease DMI.

A producer should expect around ten percent daily feed refusal. Feeder design should minimize feed wastage. Adequate feeder space should be allowed so dominant goats cannot crowd out timid goats. Goats will not eat old feed so feeders should be cleaned out regularly.

Remembering that concentrates should make up 50-60 percent of the diet, quality corn silage is a natural fit for even moderately sized herds.

Larger and more sophisticated operations are now feeding goats using a TMR (total mixed ration) system. This allows the grain to be mixed in with the forages decreasing the potential for digestive upsets (i.e. decrease “slug” feeding of grain) and increasing milk production. As with dairy cattle, TMR must be managed properly in order to get maximal production. Goats have a tremendous ability to pick and sort what they want to eat. Goats will sort out such ingredients as cob wheels from corn silage and grain within the TMR mix potentially causing digestive upsets and acidosis. Flavors are also an issue with goats. Off flavored feeds will lead to a depression in DMI. Forage quality is important. Poorly fermented haylage and corn silage will

lead to health problems (i.e., *Listeria*) and ultimately poorer production. Good quality feed must be available to goats at all times. Ensure that enough fermented forages are being fed to prevent the feed surface from spoiling (especially in the summer).

A two-year study in Spain investigated two methods of feeding concentrated rations to intensively reared dairy goats: separate distribution of concentrate and forage in different feeders or concentrate and forage mixed rations. Mixed rations increased the intake of concentrate (8-9 percent higher) and forage (42-44 percent higher) in both lactations. Total milk yield was about 10 percent greater with the mixed ration both first and second lactation does. The results of this study showed that the use of mixed rations improves the production of goats in both lactations because they increased intake of concentrate and forage. (Elizardo Monzon-Jose, Department of Animal Science, University of Las Palmas de Gran Canaria, 35416, Spain)

The availability of quality corn silage is important for dairy goat producers when formulating “least-cost rations”. Agricultural Prices report and the most recent month of October posted alfalfa hay prices of \$281 per ton, up \$62 or 28% from a year earlier. Other hay prices were \$180 per ton in October, up 16% or \$25 per ton. October was a record monthly price for alfalfa hay while it was the second highest on record for other hay, only behind August 2022. Corn silage on a nutrient basis, is a much better bargain at \$65 - 98 per ton in the Midwest. ■