

Goat Nutrition and Nutritional Disease

Prof.Dr. M.Kemal KÜÇÜKERSAN

Ankara Üniversitesi Veteriner Fakültesi Hayvan Besleme ve Beslenme Hastalıkları Anabilim Dalı

Goat Breeding

- ▶ In our country, it is seen that goat breeding is done more in mountainous, forested and bushy regions. In this sense, goat breeding has advantages over other livestock breeding.
- ▶ Goats have the ability to get more feed types from the pasture.
- ▶ High costs are not required for goat shelters.
- ▶ The fertility of goats is high.

Goat Breeding

- ▶ Goats are more resistant to diseases than other animals
- ▶ Due to the various features of the digestive tract, goats are the only animal species that can evaluate medium and low quality roughages better than other ruminants.
- ▶ Goats have been providing great benefits both to nutrition and economy for centuries with valuable animal products such as meat, leather, milk and especially fiber (mohair, cashmere) they produce.

Products from goats

- ▶ Goat milk, cheese, butter, ice cream, yogurt, whey,
- ▶ Capricorn meat (milkweed meat less than 1 month: sold as chevon or cabrito), sausage, salami
- ▶ Mohair (angora or moher), cashmere, kasgora (Cashmere x angora hybrid wool),
- ▶ They are soap or cosmetic materials



Goat Milk



- ▶ Since goats have good ability to convert carotene to vitamin A with feed, their milk is whiter.
- ▶ Fat molecules and proteins of goat milk have a smaller and softer structure than cow's milk.
- ▶ Goat milk is rich in B vitamins and phosphorus.
- ▶ It can easily be preferred in those who have allergies and digestive system problems.

Goat Milk



- ▶ Although it is similar to cow's milk in terms of goat milk, protein, fat, dry matter, milk sugar and vitamin C, it is superior in terms of vitamin A, vitamin B, Riboflavin, calcium and phosphorus.
- ▶ Especially cheeses made of goat milk abroad have a high level of market. In this regard, France is the leader in terms of goat cheese production.

Goat Meat

- ▶ Although some of our goat meat regions (especially rural areas) are not preferred in mortar, they have a protein ratio similar to sheep and beef. In terms of fat level, it is approximately 50% lower than beef.
- ▶ Goat meat (especially young boy meat) is a preferred food abroad (Italy, Greece, Portugal, Morocco).



Goat hair

- ▶ The products obtained from goat hair are mohair (angora or moher), cashmere (pashmina), kasgora and coarse top hair.
- ▶ Coarse upper bristles are mostly used for protection purposes and lower bristles (cashmere produced) are used for thermal insulation.



Goat Breeding in Our Country

- ▶ While goats are predominantly located in forest and pasture areas, in some regions they are sheltered in the winter.
- ▶ It is seen that goat breeding is traditional in many regions.
- ▶ Capricorn growth is continued for about 5 months.



Energy and Nutrient Requirements in Goats

- ▶ The average life span of a breeding goat is 13-15 years. Its economic life is 7-8 lactations. The nutritional needs of goats are similar to sheep.
- ▶ The dry matter requirement of these animals is quite different compared to other ruminants. Feed time in the digestive system is shorter in goat (22 hours in goat, 28-32 hours in sheep and 60 hours in cattle).
- ▶ In general, the daily feed consumption (dry matter) of goats is 5.0-6.5% of their live weight.

Energy Need in Goats

- ▶ Energy requirement of these animals is calculated 20% more than sheep.
- ▶ Since a significant part of goat rations are based on roughage, the energy need is met with these feeds. These animals, which consume roughage, convert these feed substances into essential fatty acids (acetic, propionic and buturic) in the rumen. These acids can meet the energy needs of the dry animal.

Symptoms of Energy Deficiency in Goats

- ▶ Energy deficiency results from either consuming too low quality roughage or not getting enough feed in high-yielding dairy and other breeding goats.
- ▶ In energy deficiency, goat kids generally regress, puberty delays, fertility decreases, lactation period and milk yield decreases.
- ▶ If energy deficiency continues, resistance to parasitic and infectious diseases decreases. In addition, mohair yield and quality decrease.

Protein Need in Goats

- ▶ Protein requirement of goats is especially important during periods of growth, pregnancy and lactation. In addition to these, the need for protein increases even more because it is rich in amino acids containing hair and mohair sulfur.
- ▶ When evaluated in general (in meat and dairy goats) total protein in their rations is around 12-16%.

Protein Deficiency in Goats

Protein deficiency in goats; anorexia, decreased milk, meat, mohair yield, reproductive disorders are observed.

Both the energy and protein needs of goats during the growth period, the last sixty days of pregnancy and lactation periods are quite high and the necessary needs must be met in this period. Otherwise, deficiency symptoms are seen.

Herd Management in Goats

- ▶ Current herd composition to get high yield from breeder
- ▶ 25% of the current population is 1.5 elderly,
- ▶ 25% of the current population is 1.5 - 2.5 elderly,
- ▶ 50% of the current population should be 3.5 years old and over.
- ▶ In addition, 20-25% of the animals that lose their breeding quality should be sorted and young animals with good breeding characteristics should be replaced.

Pregnancy in Goats

- ▶ Pregnancy duration in goats is between 145-157 days.
- ▶ For a good condition;
- ▶ animals should be given 450-900 g / day concentrated feed and 2 kinds of good quality roughage (legume and buckwheat green or dry grass 50% -50%) (alfalfa is not given alone because Ca / P is high and may cause milk fever).



Feeding strategy during pregnancy

- ▶ Body condition score (VKS) is desirable to be 2.5 and above in capricorn period.
- ▶ In goats with a body condition score below 2.5, besides the poor quality colostrum, a sudden decrease in milk yield, decreases in milk fat rate are insufficient in this development.
- ▶ In animals with a body condition score of 4 and above, birth difficulties and susceptibility to metabolic diseases are observed.

Feeding strategy in milk production period in goats

- ▶ The highest milk yield in dairy goats is the first 6-8 week period after capturing. In this period, a balanced and adequate feeding system is required for obtaining the highest level of milk, keeping the mother healthy and the rapid and correct development of the kids.
- ▶ Ration to be given to dairy goats should consist of high quality roughage + grain crushing or grinding + mineral substance mixture.

Feeding strategy in milk production period in goats

- ▶ For each liter of milk produced, 400-600 g of milk feed mixture is calculated out of dry grass. The milk feed mixture should contain 16% crude protein and an average of 700 kcal net energy.
- ▶ **MIXED FEED TO BE PREPARED;**
- ▶ For a liter of milk, mixed feed consisting of a mixture of goats (300-350 g barley + 100 g cotton seed meal) or (200-250 g barley +100 cotton seed meal + 100 g corn) can be prepared.

Feeds In Goat Feeding

- ▶ Hay and other roughages
- ▶ The daily amount of dry grass consumption recommended to goats is 2.5-4.0% (Dry matter) of average live weight.
- ▶ Silage: 2.0-2.5 kg / day should be given on average.
- ▶ In general, goats can be given an average of 0.5 kg / day of hay
- ▶ Goats can be given as energy-rich feeds and oilseed meal. The last 6-8 of pregnancy. In the weeks of breeding female goats are given 250-450 g / day grain mix and 150-200 g / day grain mix according to the condition of the animal before breeding.