

Feeding and Management of Goats to Prevent Nutritional Disorders
Roraima Feeds
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Introduction

Goats are ruminants and their diets consist of forages and weeds. Goats have narrow and deep mouths. This anatomical feature allows the goat to selectively harvest soft and leafy tissues and woody shrubs. The deep mouth enables it to strip leaves and harvest the highest quality parts of the plants. This adaptability makes the goat well suited for year-round grazing.

The nutrient requirements for goats are energy, protein, minerals, vitamins and water. These requirements vary with the animal's body weight, sex, the stage of pregnancy and lactation. Physical activities and stress influence these requirements. Energy is supplied by forage, browse and grains. Inadequate feed intake, poor quality feed and forage can have a negative effect on productivity through reduced growth and reproductive efficiency. Additionally, it can lead to reduced milk production. Kids that depend on the doe's milk for growth can be negatively affected. Diseases and parasite infestation are closely linked to inadequate energy intake. The provision of the required levels of energy in goats is important to maintain a healthy herd.

Protein constitutes the building blocks for cells. If the level of protein in the goat's diet is inadequate, then fetal development can be affected. Furthermore, it could lead to reduced growth and milk production. Ruminants produce vitamin K and all the B vitamins in the rumen. Vitamin A is likely to be deficient during times of drought when forage is not available.

Some general feeding guidelines

The goal of feeding is to foster good health so as to get the maximum production. It is essential to keep an eye on costs to stay within a reasonable budget. Feed constitute cost about 60-70% of the cost of production. It is important to pay attention to prices and low-cost alternative grains. Proper feeding of goats is the best defense against diseases. The question that always arises is how much grain and hay to feed. As mentioned above, it depends on the sex of the animal, the body weight and whether the goats are pregnant, lactating or dry. Hay and grain offered to goats should be consumed in about 20 minutes. If the animals are taking longer than

20 minutes to consume the feed provided, then they are probably being overfed. It is necessary to provide fresh and clean water at all times. The lack of water can reduce intake. Daily consumption of water ranges from one liter to one to liter per head per day. Periodically scrub and sanitize watering bowls to keep them free from contamination, micro-organisms, parasites and algae. On average, an adult animal should be fed two kilograms of high-quality feed and hay per day. Milking does should be fed an additional half of a kilogram of grain per day for every liter of milk produced. Goats may reduce their feed intake if the grains are moldy. It is essential to buy good quality grains. Grains not dried properly or stored under damp or wet conditions in high temperatures can lead to mold growth.

Feeding to prevent nutritional disorder

Remember prevention is better than cure. The following nutritional conditions can develop due, in part, to poor feeding practices:

Bloat

Gas is a natural by-product of digestive fermentation in the rumen, and it is expelled continuously as the goat belches. Bloat occurs when gas is trapped in the rumen. It is a life-threatening condition. Frothy bloat is usually caused by grazing lush pasture or legume pastures. Foam forms in the rumen with tiny bubbles that are impossible for a goat to belch up. The rumen expands with foam and the goat could die quickly from respiratory or circulatory failure due to excessive pressure on the diaphragm. Dry bloat is usually caused by indigestion from eating too much grain. In this type of bloat, gas forms in pockets and is trapped in the upper portions of the rumen. To prevent bloat, feed high quality hay before allowing them to eat new, green moist grass. Grain ration should not be fed alone. It is advisable to feed hay first before grains.



Photo of frothy Bloat. Photo courtesy of The McEvilly Homestead at Erin's Acres



Photo: Dry Boat. Photo: Courtesy of backyardgoats.iamcountryside.com

Acidosis

Fiber (e.g., hay or silage) is important in the diet because it stimulates the goat to chew, thereby producing alkaline saliva which serves to control the level of acidity in the rumen. The rumen microflora can only handle gradual changes in forage: grain ratio. When the proportion, absolute amount or type of grain changes too quickly, it favors the growth of lactic acid producing microorganisms. This type of rumen microorganisms are lactic acid producers. This lowers the pH of the rumen. The acid gets absorbed into the body creating general acidosis. It is advisable to avoid sudden or too much offering of grain to goats.

Laminitis/Founder

Laminitis is the term used to describe the initial outbreak of the disease when the laminae become inflamed and break down, releasing its hold on the bones in the hoof. Over-feeding a high-energy diet or feeding a concentrated grain diet with low-to-no-roughage sets the stage for this illness. The signs are lameness, reluctance to move, fever and all four feet are hot to the touch. It can be partially cause by complication of other diseases. The approach to prevent this disease is to feed balanced rations with no sudden or drastic change in diet.



Photo; showing laminitis in Goats

Photo: Courtesy of thelifestylevet.co.nz

Urinary calculi

The urethra is a tube that empties urine from the bladder. The male's urethra is much longer and narrower than that of the doe. It is less of a problem in does because of the straightness and shortness of their urethra. Stones are formed in the bladder and become a problem when they are lodged in the urethra. Symptoms of this condition include straining or frequent non-productive urination, abdominal discomfort, stretching, kicking, looking at their sides, and rapid tail switching. To avoiding this problem, it is advisable to feed a ration of high quality, free



Photo: Bladder stones in kidney of goats\Courtesy of angoras.co.za

choice, mixed legume/grass hay with salt and trace minerals with calcium to phosphorus ratio of 2:1. Add grain as required. Freedom to browse is an added plus. Have fresh water available at all times encourages urine flow. If possible, defer castration until 3 to 5 months of age. This allows the influence of testosterone on the development of the urethral lumen size.

Milk fever

Milk fever usually occurs around kidding time. The noticeable symptom of this disease is dragging of the hind foot. Certain feed rich in calcium, most notably and peanut (legume) hay are believed to be the cause. These feeds contain calcium in excess of what the doe needs at kidding time. This excess calcium sets off a "chain reaction" causing calcium to be deposited into her bones when her body needs to be releasing it for use in milk production. The best way to prevent milk fever is to lower calcium intake during the last 30 days of pregnancy. In most

herds, this can be done by eliminating legume hays from the doe's diet. This puts the doe's body in a slightly negative calcium position, allowing the hormonal system to mobilize calcium reserves during kidding time.

Enterotoxaemia

This condition is called overeating disease or pulpy kidney disease. Many sheep and goats carry a strain of the bacteria *Clostridium perfringens* Type D. This microorganism is part of the normal microflora of the intestine. Excessive consumption of grain or young succulent forage causes the bacteria to multiply and produces a toxin that leads to sudden death of the animal. Control of this disease is vaccination of the breeding female as well as the kid. Avoid feeding high grain diets or allowing goats to graze lush pastures.