

Goat Nutrition and Management to Prevent Nutritional Disorder

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Introduction

Goats are ruminants and their diets consist of forages and brushes including weeds such as blackberries, pigweeds, honey suckle, and kudzu. 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 age, body size, growth and lactation. Physical activity 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 affected. Disease and parasite infestation are closely linked to inadequate energy intake. The provision of the required levels of energy in goats is important in maintaining 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. At the same time it is essential to keep an eye on costs to stay within a reasonable budget. Proper feeding of goats is the best defense against diseases. The question that always arises is how much grain and hay to feed. This depends on whether the feed is for male/female, the body size and whether the goats are lactating or are dry. Feed constitute cost about 60-70% of the cost of production. It is important to pay attention to prices and low cost alternative grains.

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 quart to one and half gallon per head per day. Periodically scrub and sanitize watering bowls to keep them free from contamination, microbes, parasites and algae. On average, and adult animal should be fed five

lbs. of high quality feed and forage per day. Milking does should be fed an additional pound of grain/day for every quart 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. A sickness in one goat in the whole herd can cost about 10-20 times more when you have to treat as opposed to the cost of prevention. 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 can die pretty 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 in the morning.

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 buffer the rumen. The rumen microflora can only handle gradual changes in forage: grain ratio. If the proportion, absolute amount or type of grain changes too quickly, then lactic acidosis will develop. The type of rumen bacteria change to lactic acid producers. This lowers the pH of the rumen. The acid gets absorbed into the body creating general acidosis.

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 4 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.

Urinary calculi

The urethra is a tube that empties urine from the bladder. The male's urethra is much longer and narrower than the doe's. It is less of a problem in does because of the straightness and shortness of their urethra. Stones are mainly 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, and looking at their side, rapid tail switching. To avoid this problem it is advisable to feed a ration of high quality, free 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 hind dragging of the hind foot. Certain feeds 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 disease is called over eating 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 allowing goats to graze lush pastures.