

Goat feeding methods and nutrient requirements



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Feed is very important for livestock as for dairy or beef/mutton purpose. To get a maximum profit from any livestock a good feeding management and feeding according to nutrient requirements is necessary. If feeding is not according to requirement, most of the feed nutrient is loss and there is no effect on the performance of the animal . feed is a single most cost in any livestock raising. About 64% cost is on feeding excluding the labor. Good managerial practices decrease the feed cost. The main emphasis in this article is on the nutrient requirement of goats, feeding practices which promote good health and increase immune function and ultimately increase production of meat and milk from goats. Goats are very good browser i. e. they only eat young leaves of plants. By age, breed, production system either milk or meat, sex, body size, physiological state and climate we can determine the nutrient requirements of goats. Feeding practices is as that it can meet the protein, energy, vitamins and minerals needs. Goat consumes feed 3-4% of their body weight on dry matter basis. This feed intake is change according to the stage of the animal, body weight, palatability and physiological state of the animal.

Nutrients which are more important for goats

Carbohydrates

It includes sugars, starch and fibers. Sugar and starch are present in grains while fibers contain cellulose. And these carbohydrates are converted into volatile fatty acid by rumen fermentation with the help of bacteria which are normally resident of rumen. Young leaves and fresh pastures contain highly digestible fiber which contain more energy. Energy is presented as Total Digestible Nutrients (TDN %). It is recommended that half of the diet of the goat is consist of hay or pasture to minimize the high energy related

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diseases. Energy requirements are varies according to physiological states of goats e. g. maintenance, pregnancy, lactation and growth. Dairy kids require more energy as compare to adults. It is recommended that high energy ration is fed at the time of lactation.

Proteins

Proteins are important for body growth. Different proteins are broken and convert into amino acids which are ultimately absorb in small intestine. These amino acids are form body proteins i. e. (muscles). This break down is occurs in rumen. Forages, soyabean meals, canola meals and barley are the good source of proteins. During growth protein requirements are increased and also in milk synthesis. Always form a cost effective ration is made because protein is a expensive feed item.

Water

Good quality water is always offers to goats. Decrease water intake can impart a negative effect on performance of the goats. If goats are on high protein diets, they consume more water.

Vitamins and mineral

Goats require vitamins and minerals for their proper functioning of different systems. Vitamin A, D, E and K is must be in feed because goats cannot make these vitamin in the body. Although other vitamins are formed in the body. Vitamin B is formed in the rumen and it is essential for goat metabolism. For proper functioning of immune system vitamin C is required.

Both the micominerals and macrominerals are essential in goat diets. 2: 1 ratio of calcium and phosphorus is recommended. When minerals are added

in feed, keep in mind that some forages have high in some minerals while less in other minerals. (table)

Fat

Fat is also a good source of energy for goats. Dairy goats when browse they can consume some amount of fat also. Excess energy is stored in the form of fat in the body and during lactation high energy is required and this fat is use as an energy source.

Feeding practices for goats

The process by which nutritional requirements of goats is relate with the nutrient ingredient of the feed is called as feeding practices. It can improve productivity. The main objectives of good feed practices are 1-minimize feed cost and 2-increase animal performance.

Feeding of goat kids

For new born kid first three days are very critical. The young is just like a non-ruminant because rumen is not developed, and meets their requirements from colostrum and later from milk. Colostrums contain high level of proteins, globulins, and fat and milk solids. If kid is not separated from dam just after kidding, kid should receive colostrum at least for first three days. If kid is separate then it should be given milk replacer up to 8-12 week or until weaning age. (The process by which kid is separate from dam). Weaning age for meat purpose goat is about three months while for dairy goat it should be 3-4 days but depends upon the practice. Kid starter should be containing 11% fiber and 16 % crude protein and good quality hay for rumen development.

Herd replacement feeding

From weaning to up till 6 month of age kid starter is used at the rate of 0.25-0.5 kg/day. Together with good pasture and high quality forages macro and micro minerals should be added in the grain mix which contains 16% crude protein. When animal grow at breeding age from six months to onward they require grain mixture about 0.5-1 kg/day, crude protein 14-16% and vitamin E and A in feed. 25% protein is not recommended in growing replacement. The breeding is depends upon the weight and age of the does. Flushing ration is also used for dairy goats; it is the supplement of energy and protein one month prior to breeding time. Or when buck is introduced in herd. For meat goat it is not necessary.

Feeding of meat does in early gestation (non-dairy)

In first 90 days of pregnancy meat goats require nutrients for growth and maintenance. For fetal growth additional nutrients are less require. From good quality forages, minerals, salts and vitamin E and A is sufficient for dry goat. Small amount of protein is requiring if forages are not good quality.

Feeding of meat does in late gestation (non-dairy)

During the last 60 days of pregnancy especially 4-6 weeks prior to kidding 12-14% crude protein and grain mixture, good quality pasture and hay is recommended.

Feeding dairy does in early lactation

Dairy does require additional nutrients for milk production, some additional nutrients are requiring for fetus. For multiple fetuses more protein and

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energy is required. Grain mixture with 12-14 % protein, good quality hay and salt mineral mixture is recommended.

Far-off dry does feeding

Dry period is recommended for maximum milk production. Last 2 months are of more attention for pregnant does. These 2 months are divided into two phases' 1- Far-off dry period and 2- close-up dry period. Far-off dry period is the time period in which does are dry just 3 weeks before kidding. Mammary system is repair during dry period and mammary cells are also regenerates. Dry matter intake is about 2-2.5 % of body weight. 12-14 % protein in grain mixture is recommended.

Feeding of transition or Close-up dry does

The last 3 weeks of pregnancy is called as close-up dry period or transition period. In this period nutrient requirement are increase dramatically while feed intake is decrease about 35 %. At this stage animal need more protein and energy to avoid the negative energy balance (table)

Nursing does feeding

In first few month of lactation more nutrients are required by does to meet their need for milk production and for kids. About 16 % crude protein is recommended along with vitamins and minerals.

Feeding kid for meat purpose

After 3 months of age i. e. weaning time doelings are separated from buckling. Bucklings are kept for meat and doeling for replacement of herd. For meat purpose creep feeding is done in this practice additional supplements are fed to increase the growth rate 30-35 kg before 6 months.

Creep feeding is a good practice to increase the weight gain. It consists of corn, oats or kid grower mixture which contain 14-16 % of protein and fiber about 10 %. Slaughter at the age of 6 months is good practice.

Feeding for milk production

Particularly in early lactation does are in negative energy balance, so good managemental practice can increase the milk production and less chance of disease. At 6-8 weeks of lactation milk production is at peak while feed intake peaks at 3-4 months of lactation. In first month of lactation animal lose about 0.5-1 kg body weight/week. But at four months lactation does gain weight 1-2 kg/month. 3-4 % adding if fat in diet can increase energy level of diet to meet the requirements in early lactation, high level of protein is also required. The ideal temperature for milk production is 50C -250 C. (table)

To decrease the stress on the dairy goats following points are keep in mind.

- Give less amount of feed more frequently
- Quality forages should be given
- To maintain pH add buffer in feed
- For increase fiber digestion give yeast
- Fed fat to increase energy level
- Cool water is provide in summer