



AGRI MAGAZINE

(International E-Magazine for Agricultural Articles)

Volume: 03, Issue: 10 (October, 2026)

Available online at <http://www.agrimagazine.in>

©Agri Magazine, ISSN: 3048-8656

Nutritional Management of Goats at Different Stages

*Mote Sujit

Livestock Production and Management Section, Indian Veterinary Research Institute,
Izatnagar, Uttar Pradesh, India

*Corresponding Author's email: sujitmote0@gmail.com

Goat farming plays a significant role in rural livelihoods by providing meat, milk, manure, and supplementary income, particularly for small and marginal farmers. Efficient nutritional management is essential for improving goat growth, reproductive performance, health, and overall productivity. This article discusses feeding and nutritional management practices for goat kids and adult goats at different physiological stages. Early colostrum feeding, adequate maternal milk, and the gradual introduction of green fodder and concentrate mixtures are important for proper kid development. Adult goats require balanced diets containing carbohydrates, proteins, fats, minerals, and vitamins according to their body weight and production status. Different feeding and grazing systems, including tethering, extensive grazing, zero grazing, and semi-intensive management, are described along with their advantages and limitations. The importance of clean drinking water, mineral supplementation, appropriate grazing practices, and preventive health management is also highlighted. Adoption of scientific feeding strategies can improve productivity, reduce nutritional deficiencies, and enhance the economic sustainability of goat farming.

Keywords: Goat nutrition, Feeding management, Kids, Grazing systems, Mineral supplementation, Goat productivity.

Introduction

Goat farming has been an integral part of animal husbandry since ancient times. It is particularly popular among landless agricultural labourers, small and marginal farmers, and economically disadvantaged sections of society. The multipurpose utility of goats and their relatively simple management are the major reasons for the increasing interest in goat rearing among livestock farmers. Goat farming is expanding rapidly in India. Along with crop cultivation, it provides an excellent source of supplementary income for farmers. There is a consistent market demand for goat meat, which reduces the likelihood of losses in this enterprise. However, goat farmers may occasionally incur losses due to disease outbreaks. Although goat farming is generally profitable, its profitability can be increased further through proper feeding and management practices. To generate better returns from goat farming, special attention must be given to nutrition, health, and reproduction. Adoption of scientific management practices can substantially improve the profitability of goat farming.

Nutritional Management of Kids

Kids should receive colostrum within the first half-hour after birth. Colostrum should be provided during the first five days according to the body weight of the kids. Appropriate precautions should be taken while feeding milk to young animals. Maternal milk is the ideal feed for newborn kids up to three months of age because it meets their nutritional requirements and supports growth. Proper nutritional management during the growing stage is essential for normal development and helps reduce morbidity and mortality. Goat farmers should therefore remain particularly attentive to the care and management of kids during this period. At approximately two weeks of age, kids begin to consume green or dry fodder. At

this stage, they should be managed carefully, with adequate fodder available around them. Concentrate feed should also be provided in a suitable manner. The concentrate mixture for growing kids up to one year of age is presented in Table 1.

Table 1. Composition of concentrate mixture for kids up to one year of age

Feed ingredient	Proportion (%)
Maize grain	47
Groundnut cake	30
Wheat bran	20
Mineral mixture	2
Common salt	1
Total	100

Nutritional Management of Adult Goats

Goats require various nutrients through their feed to support growth, milk and meat production, reproduction, and other physiological functions. A balanced diet must contain adequate amounts of carbohydrates, proteins, fats, minerals, and vitamins. If any essential nutrient is deficient, it can adversely affect production, reproductive performance, and disease resistance. Farmers should be familiar with common nutritional deficiencies and the diseases associated with them, as well as their prevention. Nutritional deficiencies are particularly common in goats producing large quantities of milk or meat. Nutrient requirements increase during pregnancy and lactation. If a balanced diet is not provided during these stages, the animals' health may deteriorate and, in severe cases, mortality may occur. An adult goat should receive dry matter equivalent to approximately 3–5% of its body weight daily. The source recommends providing approximately 1–3 kg of green fodder, 300–500 g of dry fodder, and 150–400 g of concentrate feed per adult goat per day, depending on its requirements. Concentrate feed should preferably be provided as a dry mixture rather than mixed with water. Whole grains should not be fed without appropriate processing. Goats should receive approximately 400–500 g of concentrate per day beginning one month before the breeding season to support reproductive performance. During the breeding season, bucks should also receive approximately 350–500 g of concentrate daily. Clean drinking water should be available to goats at all times. They should be prevented from drinking stagnant water collected in rivers, ponds, and ditches. Changes in the diet should be introduced gradually, and feed allowances should be adjusted according to age, body weight, and production stage.

Table 2. Types of leguminous and non-leguminous fodder preferred by goats

Fodder category	Leguminous fodder	Non-leguminous fodder
Dry fodder	Straw, gram, pea, pigeon pea, mung bean, urad bean, cowpea, sem, pea and sunn hemp	Wheat, barley, oats and maize residues; pearl millet and sorghum straw; dry grasses
Green fodder	Berseem, lucerne, pea, cowpea, guar, stylo, Napier-associated legumes and other forage legumes	Sorghum, maize, pearl millet, maize fodder, guinea grass, para grass, oats, and monsoon grasses

Goats have distinctive grazing and feeding behaviour compared with other livestock species. Their mouth structure enables them to browse thorny plants effectively. They may prefer to browse shrubs and trees rather than consume soil-contaminated fodder trampled by other animals. Unlike some other livestock species, goats generally prefer diverse vegetation and are selective feeders. Dietary changes should be introduced gradually. Lactating goats, pregnant does, growing kids, and breeding bucks should receive balanced concentrate mixtures and adequate minerals according to their body weight and production requirements.

Table 3. Composition of concentrate mixture for adult goats

Feed ingredient	Proportion (%)
Barley, maize, sorghum or pearl millet grain	30
Oilseed cake (groundnut, mustard or sunflower)	33
Wheat or rice bran	34
Mineral mixture	2
Common salt	1
Total	100

Four Systems of Grazing and Nutritional Management

Tethering system

This system is commonly adopted by small livestock farmers who keep approximately 5–6 goats. The animals are tied with ropes approximately 1–5 metres long in a grazing area or near a fence. Goats can graze within the restricted area.

Advantages

- Restricts the movement of animals and helps protect crops.
- Goats can be tied in pastures or harvested fields where grazing is permitted.
- Disadvantages
- Restricted grazing may lead to undernutrition.
- Goats may receive insufficient drinking water.
- Tethered goats may be vulnerable to predators, particularly when left unattended.
- Movement, running, and escaping from danger may be restricted by the rope.

Extensive grazing or free-ranging system

This is a common traditional system of goat production in India. During the day, goats graze on natural vegetation, shrubs, trees, or crop residues. A shepherd takes the animals to suitable grazing areas, often near the village. At night, the flock is kept in a shelter or enclosed area. In some regions, shepherds travel with their flocks for several months and return to their villages after an extended grazing period.

Advantages

- Goats depend mainly on natural vegetation, reducing the need to purchase fodder.
- Animals can select their preferred grazing areas.
- Keeping goats in flocks can make them easier to protect from theft and predators.

Disadvantages

- Controlled breeding can be difficult.
- Close contact within flocks and shared grazing areas may increase the risk of internal and external parasitic infections.
- If goats are left unattended, theft may occur.
- Identifying and treating sick animals can be difficult.

Zero-grazing system

In this intensive system, goats are kept permanently at a fixed location, and fodder and concentrate are supplied directly to them. Green fodder is cultivated specifically for the animals or collected from suitable public areas. This system is useful for large-scale commercial goat farming and research facilities.

Advantages

- Goats are protected from adverse environmental conditions, predators, and theft.
- Labour requirements can be reduced when modern equipment and efficient feeding systems are used.
- Controlled breeding is possible, potentially improving productivity.
- Disadvantages
- Establishing the unit requires substantial initial investment.
- The animals depend entirely on the feed supplied by the farmer.
- Limited access to diverse vegetation may affect opportunities for selective browsing.

- Poor hygiene and overcrowding can increase the risk of disease and parasitic infections.

Semi-intensive system

This system combines the advantages of extensive grazing and intensive housing. The farmer manages grazing and supplementary feeding according to the animals' requirements and available resources. Approximately 40–60% of the nutritional requirements may be met through grazing, with the remainder supplied through stall feeding. This system is particularly suitable for farmers who undertake both crop cultivation and livestock rearing.

Advantages

- Suitable for mixed crop–livestock farming systems.
- Goats can graze on common grazing land and crop residues after harvesting.
- During summer, the flock can be moved to other grazing areas for access to water and fodder.
- Productivity may improve because goats receive a combination of natural forage and supplementary feed.

Use of Salt and Minerals in Goat Nutrition

Mineral deficiencies in soil and fodder vary across geographical regions. Therefore, farmers should provide a suitable mineral mixture formulated according to local requirements and veterinary or animal nutritionist recommendations. A mineral mixture should be supplied with concentrate feed to help meet the animals' mineral requirements. The source recommends approximately 10–15 g of mineral mixture per goat daily, mixed with feed, to prevent deficiencies that could adversely affect productivity. The quantity should be adjusted according to the product's composition, the animal's physiological stage, and its overall diet.

Important Precautions in Goat Feeding and Grazing

The following precautions should be observed to maintain the health and productivity of goats:

1. Do not allow goats to graze for excessive periods in the same pasture, as this may increase the risk of parasitic infections.
2. Goats are sensitive to extreme cold and prolonged exposure to rain. During cold weather, provide suitable shelter and protection. Avoid grazing in wet, muddy areas during rainy conditions.
3. Avoid sending sick goats for grazing.
4. Do not graze goats during the final two weeks of pregnancy or for approximately two weeks after kidding, as recommended in the source. Provide suitable shelter, nutrition, and close supervision during these periods.
5. To maintain controlled breeding, do not graze bucks and does together. Keep breeding males separate except during planned mating.
6. Regular grazing is important. The source recommends approximately 6–7 hours of grazing daily, depending on forage availability and management conditions.
7. Clean the goat shed daily after the animals return from grazing.
8. Before taking goats to a grazing area, ensure that sufficient suitable fodder is available.
9. Avoid grazing goats together with large livestock where competition, injury, or management difficulties may arise.
10. Before releasing goats for grazing, provide approximately half their usual concentrate allowance, and provide the remaining half after they return, where appropriate to the feeding schedule.
11. Goats with poor body weight or inadequate growth should be examined by a veterinarian. Deworming should be performed when indicated, using appropriate veterinary guidance.
12. During rainy weather, provide dry fodder such as gram straw, chickpea haulms, or pigeon pea haulms. The source recommends approximately 400–500 g of such dry fodder per goat, depending on body size and nutritional requirements.

References

1. National Research Council. (2007). Nutrient requirements of small ruminants: Sheep, goats, cervids, and new world camelids. The National Academies Press.
2. Devendra, C., & Burns, M. (1983). Goat production in the tropics (2nd ed.). Commonwealth Agricultural Bureaux.
3. Peacock, C. (1996). Improving goat production in the tropics: A manual for development workers. Oxfam/FARM-Africa.
4. Food and Agriculture Organization of the United Nations. (1981). Sheep and goat production in the tropics. FAO.
5. ICAR–Indian Council of Agricultural Research. (2013). Handbook of animal husbandry (4th ed.). Directorate of Knowledge Management in Agriculture, ICAR.