

Practical tips for scientific goat feeding and management

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Feeding alone accounts for about 70% cost of goat rearing like any other livestock enterprise and this becomes critical, if goats are reared under a stall feeding system. For successful establishment of commercial goat farms in long run, the feeding should aim to meet the nutrient requirement for different physiological stages judiciously while maintaining the feed wastage to the bare minimum at farm by following scientific feeding practices with the help of feeding devices, locally available feed resources etc. Goats respond readily to good management and proper feeding, and to ensure best results, their care should be taken like other valuable animals.

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FEEDING of goat kids requires immense care and management. All newborn kids should be fed colostrum (first milk) within half an hour after birth and should ingest colostrum @10% of their body weight during the first 24 hours after birth. Colostrum should be ingested or bottle-fed (in case of weak kids) as soon as kids have a suckling reflex. Colostrum should not be thrown as few farmers believe that it is toxic. Colostrum is rich in immunoglobulins which can improve immunity and offer protection against infections.

Kids start nibbling green grass or tree leaves from 10–15 days of age. Good quality green fodder leaves such as Berseem, Cowpea, Maize or Lucerne; tree fodder leaves like Ber (Ziziphus), Neem, Sesbania, Gliricidia etc. can be offered to kids. Creep feed, which is a concentrated mixture containing high energy and easily digestible protein, is also introduced at 10–15 days. Creep feed should be offered to kids after 1 hour of milk suckling or feeding. In prolific breeds like Barbari and Black Bengal, either the milk replacer or the surplus milk from other goats can be used to supplement the kids for sustaining the growth. Kids are

Table 1. Feeding schedule for kids from birth to weaning

Age (Days)	Type	Milk/Colostrum*		Concentrate Mixture (g)	Green/Tree leaves
		Quantity	Frequency		
1–3	Colostrum	300ml	3 feedings	Nil	Nil
4–14	Milk	350ml	3 feedings	Nil	Nil
15–30	Milk	350ml	3 feedings	50–100	Free choice
31–60	Milk	400ml	2 feedings	100–150	Free choice
61–90	Milk	200ml	2 feedings	200–250	Free choice

Note: Milk replacer can be offered to weak kids as per the above schedule.

weaned at 3 months of age and they are fed similar feed as that of adult goats (Table 1). (For information regarding kid starter and milk replacer please contact the institute.)

Feeding of growing kids (3–12 months)

There will be a transition period from pre-ruminant to ruminant stage around 3–4 months of age. Goats can digest coarse roughages in a better way compared to the early part of life. Goats can be allowed for grazing for 7–8 hours with supplementation of 100–200 g concentrate mixture having 1–2% minerals. Initially, kids shall be allowed for grazing for 2–3 hours and thereafter, the grazing time shall be increased gradually. For better growth and welfare of kids, small agro-forestry having tree fodders and grasses adjacent to the

shed shall be developed and used for grazing. Concentrate mixture can be prepared by mixing cereal grains (maize/ ragi/ jowar/ pearl millet: 55–60%), oil cakes (groundnut/ coconut/ soybean/ gingelly: 15–20%), coarse bran (rice/wheat/dal chunnis: 20%), minerals (2%) and common salt (1%). If grazing lands are constraint in peri-urban areas, a concentrated mixture along with leguminous straw (groundnut haulms, lucerne hay, tree leaves, cow pea hay etc) and hydroponic green fodder is a good option as a contingency green supplement. In the growing stage of 3–12 months of age, kids consume dry matter around 4% of their body weight. The ratio should provide 14–16% of crude protein and 55–60% total digestible nutrients. Good quality

water should be made available or at least 3–4 times depending up on the season.

Feeding of female goats (Doe)

Goat milk is gaining popularity, especially in metropolitan cities and fetches a good price. Four milch goat breeds available in India are Beetal, Jakhrana, Jamunapari and Surti. Dairy goats should be fed dry matter @4–5% of their body weight. The adult goats are fed concentrate mixture @200 g/day as maintenance ratio. Extra allowances of concentrate mixture @400 g per every kg of milk production, 250 g/goat during breeding season (flushing ratio) and 350 g/goat in last 45 days of pregnancy (steaming-up ratio). Free choice mineral lick has to be kept in goat shed or mineral mixture (2%) and salt (1%) should be added in the concentrate mixture (Table 2). Concentrate mixture can be prepared by mixing grains like maize, ragi, jowar and bajra (55–60%), deoiled cakes like groundnut cake, coconut cake, gingelly cake, etc. (15–20%), wheat bran/dal chunnis (15–20%), mineral mixture

Table 2. Feeding schedule for dry and lactating goats

Age group	Grazing (hrs/ day)	Straw (g)	Green fodder (g)	Concentrate mixture (g)
Dry & Non pregnant doe	5–6 hrs	300–400	750–1000	100–150
Lactating doe	5–6 hrs	300–400	1000–1500	100 + (400 g/ kg milk)

Table 3. Feeding schedule for adult male and breeding bucks (weighing around 40–50 kg)

Age group	Grazing (hrs/ day)	Straw (g)	Green fodder (g)	Concentrate mixture (g)
Adult male	5–6	300–400	750–1000	100–150
Breeding bucks	5–6	300–400	1000–1500	500 g during breeding season only

(2%) and salt (1%). Doe should be managed during dry period in such a way that the body is in good condition (Body Condition Score: 4) at the time of kidding and it should not be allowed to become fat.

Feeding of male goats (Buck)

Bucks can obtain most of their nutrients from good pasture/green fodder. Supplementation with concentrate mixture @0.5–1% of body weight is necessary, when nutritional needs are not met through pastures. Energy supplementation in the form

of maize grain or polyunsaturated fatty acids improves semen quality and fertility. Further, mineral salts having more bio-availability (organic and nano) need to be provided for better semen quality. Mineral mixture should always be given to the breeding bucks for improves semen quality and their reproductive efficiency. Bucks of larger breeds like Beetal, Jakhrana, Jamunapari need additional allowances of feed and fodder accordingly (Table 3).



Growing kids under stall feeding



Grazing goats under farm condition



Adult goat under stall feeding



Adult goat feeding on pruned tree fodders



Cultivated fodder for goats



Pelleted feeds for goats

Economics of scientific feeding

The choice of rearing system depends mainly on the available resources with the goat keepers. The feed cost varies as per feed availability and cost. However, based on the practical experience of authors, one goat requires 200 g concentrate, 1 kg dry fodder and 2 kg green fodder per day for its maintenance requirement. At present, the approximate cost per kg of concentrate is ₹20, dry fodder ₹7, and green fodder ₹3, hence the feed cost comes around ₹17 per day.

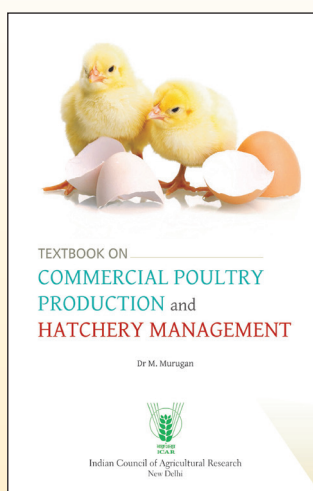
SUMMARY

It is necessary to manage goats with minimum feed cost by arranging locally available feed resources during harvesting season and reducing feed wastage. The recent studies conducted in Karnataka state revealed that though the feeding cost is higher under stall feeding system, the net return per goat is higher under stall feeding as compared to semi-intensive and extensive rearing system. Goats are essential for the development of environmentally friendly and sustainable production

systems. Efforts should be intensified to improve animals productive and reproductive capabilities using simple and cost-effective methods. Desertification, drought, and global warming all point to the need for a serious rethinking and implementation of new feeding strategies aimed at increasing animal production while minimizing environmental impact.

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TECHNICAL SPECIFICATIONS

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