

Broiler Goat Farming: A Profitable Enterprise for Empowering Farm Women

Biswanath Sahoo*, Arun Kumar Panda, Lipi Das, Tanuja S., Mridula Devi, Gautama Parida and Sanjay Kumar Behera

ICAR - Central Institute for Women in Agriculture, Bhubaneswar-751003, India

Corresponding Author

Biswanath Sahoo

Email: Biswanath.Sahoo@icar.gov.in



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ABSTRACT

Goat farming in India is a female dominated enterprise. Goats are usually maintained in extensive and semi intensive system and the productivity of goats is very low as the animals mainly subsist on crop residues, tree leaves and natural grasses with little or no concentrate mixture. Goats in stall feeding show faster growth rate by feeding high protein concentrate with quality green fodder. Broiler goat production system is being popular and considered as an alternate feeding approach in which animals were provided energy, protein and critical nutrients in the specified quantity in concentrate mixture. The feed escalation in this intensive feeding system can be reduced by providing quality fodder with proper ratio and standardised method of feeding to achieve optimum growth performance following proper housing, health and management. This system ensures early attainable market age and better economic return to the farm women engaged in goat rearing in entrepreneurship mode.

INTRODUCTION

Goat is the most popular and essential small ruminant species, widely distributed throughout the world. In tropical and subtropical regions, it forms an integral component of the farming system to

fulfil animal protein demand through meat production. Goat farming in India is a female dominated enterprise. The productivity of goats is very low as goats are maintained usually in extensive and semi intensive system

in which farm women rarely practice feeding of concentrate mixture. Feeding of goats mainly depends on the agricultural crop residues, tree leaves and natural grasses having low nutritive value resulting poor productive performance of animals. Moreover, seasonal variations play a potential role in the nutrient composition of common grasses, as higher dry matter content in grasses is reported during the dry season than rainy season. However, these available feed sources are characterized by high roughage content with low protein, energy, mineral, and vitamin contents, which may not meet the maintenance requirements of goats adequately. Lower digestibility with a lack of feed intake finally results in poor performances. Similarly, faster growth rates were found in stall feeding goats than feedlot goats, as it allows finishing at specific target weights. It is necessary to determine an alternative feeding approach to rear goats under intensive or stall-fed conditions to enhance profitable goat production in India. Goats in stall feeding show faster growth rate as it allows finishing at specific target weights. Nutritional manoeuvring by feeding high protein concentrate with green fodder may improve the productivity. Broiler goat production system is an alternate feeding approach in intensive system of rearing goats to provide energy, protein and critical nutrients in the specified quantity by feeding semi solid concentrate diet (Ghosh *et al.*, 2020). The rearing method is meant only for chevon production and goats are usually not allowed to graze on pasture providing them in hygienic disease free environment especially in urban or peri urban areas. However, the feed cost in this intensive feeding system can be reduced by providing quality fodder. Broiler goat meat is highly nutritious and unique in taste. As demand for quality meat continues to rise globally, venturing into broiler goat rearing offers great marketing opportunities. Unlike traditional goat farming, where goats are primarily raised for milk or fiber, broiler goat

rearing specifically aims to raise goats for their delicious and tender meat.

Methodology

Major Broiler Goat Breeds: Boer, Kalahari Red, Spanish Goats, Kiko, Angora, Savanna, Australian Rangeland, Anglo-Nubian, Black Bengal, Saanen, Beetal, Barbari, Sirohi

Selection of Kid: The goat kids about 15 days to 1 month old preferably before starting to eat green leaves and are having higher birth weight and not used for further breeding can be selected for broiler goat rearing. The selected kids should not be allowed to feed on green fodder/grazing green grasses in open spaces.

Rearing method : The selected kids are reared intensively by providing concentrate feed (goat feed) @

5 g mixed with equal quantity of rice gruel (broken boiled rice) initially i.e. at start (15-



30 days). Then gradually the quantity of concentrate is being increased day by day as per feed intake (e.g. 7g, 10 g, 15 g like that). Apart from these coconut cake, rice bran or ground cake with minimum level (1-2g/day/kid to maximum of 150-200/day) can be added. Pure water also should be available at all times (24hours). Liver tonic (Tefroli/Livol etc.) and Fish oil should be given twice in a week @ 2.5 ml/animal per day initially and increase up to 5-10ml/kid/day. The young kids should be allowed for mother's milk twice or thrice in a day. Then feeding of Concentrate: Fodder :: 60:40 with periodical deworming@6 m is preferred. Feed @ 4-5% of the body weight (on DM basis) with assessing body weight at fortnight intervals can be provided for optimum production.

Benefits of Broiler Goat Farming

- Faster growth rate with higher feed efficiency
- Reduce the marketable age of goats with higher income
- Eco friendly solution of waste management and use as organic fertilizer
- Enhance soil fertility and crop productivity.
- Highly lucrative venture with the increasing demand for organic products.
- Climate resilient breeds of animals can be developed
- Successful broiler goat rearing requires careful planning and proper management practices.
- With suitable feeding and other managerial interventions successful broiler goat rearing are possible. It is easy to monitor herd health and control disease incidence effectively. Broiler goats will gain weight at faster rate due to the fact that the feeds are quickly converted into flesh.
- Broiler goat rearing allows collecting the manure effectively and farmers can earn additional income with the sale of manure. This intensive system of goat rearing is preferred when there is scarcity of pastures for ample grazing and the areas have high market demand.
- A farmer can maintain easily about 15-20 kids at a time without any additional labour. It is highly profitable to the farm women who are already involved in goat rearing and if locally low costs feed ingredients are available.

Farm Preparation for Broiler Goats

- ✓ Ensure maintaining cleanliness with suitable housing (raised bed platform) and

well-ventilated shelters, protection from extreme weather conditions, spacious enough with proper fencing to allow freedom of movement for broiler goats as a model house.



- ✓ Regular cleaning of living spaces help prevention from diseases and parasites with adequate ventilation.
- ✓ Provision of adequate feeding (balanced diet of high-quality fodder rich in essential nutrients) and watering facilities is crucial.

What to Feed Broiler Goats?

Feeding broiler goats is a crucial management aspect to ensure optimal growth and meat production. The right diet significantly affects



these animals' overall health and development. Broiler goats have higher nutritional requirements than other goat breeds, bred specifically for meat production. Their diet should consist mainly of high-quality proteinaceous forage. Providing them with fresh and clean water at all times is also essential. Supplementary feeds rich in protein and energy, commercial goat feed blends containing grains (corn or barley) and protein sources like soybean or cottonseed meal are preferred to meet their dietary needs.

Results and Discussion

Broiler Goat Feed

A feeding system based on complete pellet feed is one of the feed processing methods expected to establish a profitable goat production by better utilization of nutrients from

agricultural crop residues. Nevertheless, broiler feed in complete pellet feed form prepared from total mixed



ration ensures the balanced nutrition of goats by maintaining an adequate amount of roughage and concentrate mixture. It also provides uniform feed to reduce unnecessary feed waste by increasing digestibility and palatability. Pelleted feed consisting of raw ingredients are preferable to meet the nutritional specification of broiler goat feed such as amino acids, glucose and fatty acids. Balancing of macronutrients with micronutrients is necessary to accomplish better and faster growth rate. Goat feed are available in the market or can be prepared mixing using following feed ingredients.

| Ingredients | Parts |
|-----------------------------------|--------------------|
| Deoiled ground nut cake | 25 |
| Horse gram | 27 |
| Wheat/maize/jowar (grain) | 30 |
| Rice polish/wheat bran | 15 |
| Mineral mixture | 2.0 |
| Common salt | 1.0 |
| VitAB ₂ D ₃ | 25 gms/100 kg feed |

Nutritional composition of Broiler Diet :

Moisture, 10%, CP, 21%, Fat, 3%, Fiber, 12%, AI Ash, 2%, Ca, 1.2%, P, 0.5%

Broiler goat has been evolved to enhance goat meat production in areas where land availability is scarce. The new innovative of goat rearing abandoning grazing and feeding high tech feed by reducing FCR to 2.5 may be a boon in goat industry.

Feeding Management in Broiler Goat feeding system:

This feeding system may not always be economical, especially where high quality and quantity of adequate forage is available. The creep feeding can also be uneconomical when animals are reared on adequate high quality green pasture. It is necessary to pay close attention to cost of feed, additional weight gains and the market value. The success of broiler goat production solely depends on strategic feeding management. Timely and proper feeding schedule is most important factor that influences the growth rate particularly body weight in broiler goats. Immediately after that kids should be given optimum quantity of colostrums. The young kids should be allowed mother's milk 3-4 times daily. The colostrums have high in nutrients, including energy, vitamin A, B, protein, and minerals. Overfeeding colostrum or other milk can cause scours. Excess colostrum can be frozen and fed at body temperature after thawing. Orphan kids may be left on goat's milk or changed to cow's milk or a commercial milk replacer after the first days on colostrum. Special attention for kids born need to be given as multiples to ensure that they are receiving adequate nutrients from their dams.

Health Management of Broiler Goats

Health management is of immense importance for broiler goats and farmers can ensure the wellbeing and productivity of their goats implementing effective health practices as follows.

- Regular vaccination plays a vital role in preventing diseases. Vaccination against PPR, Enterotoxaemia, Goat pox, Haemorrhagic septicemia, Tetanus, and Pneumonia.
- Regular deworming at periodical interval (3 month) is essential to control internal parasites.
- Proper nutrition is important to maintaining good health in broiler goats. A balanced diet with adequate proteins, minerals, vitamins, and roughage should be provided. Feeding practices should be monitored closely to prevent overfeeding or underfeeding.
- Maintaining clean and hygienic living conditions is important for disease prevention. Goats should always have access to clean water, and their housing area must be kept clean and free from excessive moisture or waste build-up.
- Regular exercise is beneficial for overall health maintenance in broiler goats. Encouraging natural movement through spacious grazing areas or providing scope for exercise within the housing setup promotes physical well-being.

Farm Preparation for Broiler Goat Rearing

The suitable housing for broiler goats facilitated with clean and well-ventilated shelters that protect them from extreme weather conditions should be provided. The housing should be properly fenced and spacious enough to allow freedom of movement for the goats. Strong and secure fencing will prevent escape and keep predators at bay. Additionally, providing adequate feeding and watering facilities is crucial. Goats require a balanced diet of high-quality hay or pasture and supplementary feeds rich in essential nutrients. Maintaining cleanliness in farm premises is paramount when rearing

broiler goats. Regular cleaning of their living spaces will help prevent diseases and parasites from spreading among the animals.

Goat shed

- Floor space for adult: 12-15 ft² covered space and 20-24 ft² open space
- Fill the floor with coarse soil about 1 ½ feet height.
- Deep litter material: 7kg/goat for 4-6 months, for 10 goat (yield 2 ½ ton manure)
- Shed should be length 80-100 ft, breath-15-20 ft, side wall of 1 ½ feet height from the floor and the remaining can be made of wire mesh with east-west face.
- Floor should be made in slopes.
- Shed one side should be covered area and the other side should be open.
- One feeder and one waterer for every 10 goat.
- Keep the feeder at 3 places at 1 ½ feet height and one water duff.
- Slatted floor should be 2' to 2 ½' height from the floor.

Quality Green Fodder for Broiler Goat farming

Green fodder plays major role in supplementary protein, fiber content, vitamin and minerals and also control the animal's body temp to a great extent.

Grass fodder: Co3, Co4

Cereal fodder: Maize, Sorghum

Legume fodder: Hedge Lucerne, Stylo, Berseem, Lobia, Azolla

Tree fodder: Bamboo, Ber, Pipal, Neem, Moringa

Body weight gain and marketing of Broiler Goats:

Goat meat is always preferred across the globe. As population is increasing, meat lovers are increasing so the demand for goat meat (chevon) is never ending. Marketing of broiler goat is very easy in farm gate itself. The middle agent should be avoided and directly selling for more profits should be preferred. In case of broiler goat rearing, the average live weight produced was significantly higher ($P < 0.01$) (15.26 Vs 7.21kg) in 12 weeks of age (Prasad and Abraham 2017)



Business Plan/Economics of Broiler Goat Farming (Unit Size:20+1)

| Particulars | Total (Rs.) |
|--|-------------|
| Expenditure | |
| Female doe (7-8 m+) @ Rs.3000/x 20 | 60000 |
| Buck (1yr+)@Rs. 5000/x 1 | 5000 |
| Rearing cost of goats with followers (Feed, medicine, feeders & miscellaneous) | 100000 |
| Medicine/vaccine/Labour | 10000 |
| Total | 175000 |
| Income | |
| Sale of parental stock(20 nos) (Rs 5000x 20) | 100000 |
| Sale of goats (8 month-1 yr old) (60 nos x Rs.5000) | 300000 |
| Sale of goat (6 m old) (40 nos. x Rs. 3500) | 140000 |
| Sale of goat litter (10 Qt x Rs 300 /Qt) | 30000 |
| Total | 570000 |

| | |
|---|--------|
| Profit (Income – Expenditure) (18 months) | 395000 |
| Income/month (Rs.) | 21950 |

CONCLUSION:

The broiler goat rearing system is an effective technology in which concentrate mixture with higher protein (24% Vs 14% CP) fed to kids improve the nutrient utilization, growth rate and feed efficiency with higher cost efficacy which led to higher return of farm women involved in semi intensive goat rearing system. Broiler goat rearing is profitable as there is always a high demand for goat meat. Farmers can achieve optimum growth rates and produce healthy meaty goats with proper feeding and management practices. Moreover, goats require less space and are relatively easier to handle than other livestock animals like cattle or pigs. This innovative technology empowers farm women in small scale farming operations or backyard setups in goat farming.

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