



OSMANABADI GOAT FARMING AND FINANCIAL INDEPENDENCE OF FARMERS: AN OVERVIEW

Sushil Jawale^{1*} and Sunita Borde²

¹Department of Zoology

Sant Dnyaneshwar Mahavidyalaya, Soegaon (MS), India

²Department of Zoology

Dr. B. A. M. University, Aurangabad (MS), India

*Corresponding author: sukalp.sush@gmail.com

Article Info:

Review article

Received

05.04.2021

Reviewed

01.05.2021

Accepted

20.05.2021

Abstract: Osmanabadi goats are highly renowned for the finest quality of meat, milk and quality skin and disease resistance across India. Characteristic environment of Osmanabadi goat is Marathwada area of Maharashtra, India yet found all over the state, in spite of various agro climatic states of Marathwada and Vidarbha regions. They have come to be known as lifesavers of farmers in the suicide zone of the Marathwada and Vidarbha regions of Maharashtra. Farming of Osmanabadi goat is considered as an important factor in financial freedom of the farmer's economy that in turn plays a significant role in building the nation. In the present article, authors tried to narrate the different aspects of Osmanabadi goat with special emphasis on its farming and economy.

Keywords: Asia, Economy, Farmer, Marathwada, Osmanabadi goat.

INTRODUCTION

The livestock refers to domestic animals, which are kept for use or profit (Ashok, 2017). This sector contributes significantly in the economy of a state; about 70% of populace flourishes on agriculture. Animal husbandry deals with the study of breeding, raising, care and utilization of domestic animals, which is an indivisible segment of agribusiness area (Birthal and Joshi, 2006). Animal husbandry is significant to provincial livelihoods in a huge part of the globe. In India, this sector provides food, fiber, energy and medication that are basic fundamental needs for human living.

Goat also called poor man's cow, belongs to class Mammalia of phylum Chordata (Verma and Prakash, 2020). Goat's farming is a traditional profession of financially helpless or poor segments of society, especially in rain shadow

zones. Almost 40% of our populace has a place within financially poor category. Similarly modest body size and their versatility to a wide scope of agro climatic conditions have delivered them appropriate for more fragile segments. Goats are primarily raised under broad reach, the board framework on local area rangeland, crop residues and forest lands utilizing self or family labor. The executives of little ruminants don't need uncommon abilities.

The market demand for goats and their items is accessible consistently and there is irrelevant variety in costs acquired. The National Commission of Nutrition expressed that the decent human diet ought to contain 11 kg of meat/annum (Kumar, 2007a). Notwithstanding, the current accessibility in Maharashtra state is just 2.26 kg/annum (from all species). Because of expanding human populace, the normal meat

accessibility isn't probably going to surpass. Consequently fast expansion in meat production is important to satisfy the ever expanding need.

The Osmanabadi goat is an Indian goat breed which is local to the Osmanabad, Tuljapur, Lohara, Bhum, paranda and other Tahasils of Osmanabad area of Maharashtra. The name of this variety gets from its place of origin Osmanabad. Osmanabadi goats are mostly abundant in Ahmednagar, Latur, Parbhani, Osmanabad, Solanpur and some other areas of Maharashtra state (Kumar, 2007b). Today, these are likewise found in Andhra Pradesh, Karnataka, Telangana and some other states in modest quantity.

Osmanabadi goat is reasonable for both meat and milk production. In any case, these are raised principally for meat production, in view of their best quality meat (Kumar, 2007a). Among the enlisted goat breeds in India, the Osmanabadi goat has incredible interest in the market for their meat. Other than great quality meat, this variety additionally delivers predominant quality skin which has tremendous demand in the market. Osmanabadi goat is called as farmer's true breed since it makes more benefits in less time without using a lot for taking care (Kumar and Deoghare, 2002). The breed is acquiring prominence across the India by the commercial meat goat producers.

GOAT BREEDS OF THE STATE

Osmanabadi, Surti, Sangamneri breeds as well as nondescript goats are raised in the State.

1. Osmanabadi Breed

Osmanabadi is a basic goat breed of the State. These goats are basically black in colour (73%) while others are patches with black white, tan or patches with tan-white. Twining percentage is approximately 35% to 40%, triplets are 3-5%, quadruplet's 1-3%, and remaining are singles. Osmanabadi is a medium size and dual type of breed. These goats are hardy and three kidding in two years are observed (Kakade *et al.*, 2009). Average birth weight is approximately 2.5 to 3.0 kg and is sold at an age of 8 to 9 months, with 18 to 20 kg of body weight. Average meat yield is 40 to 45% and milk production is 180 liters in 210 days of lactation period.

2. Surti

Surti goats are found in Nasik, Dhule, Jalgaon districts of the Khandesh area, which are neighbouring to the Surat district of Gujarat State. Surti goats are famous for milk. It is a medium size breed with white in colour having medium size ear, small horns and very well developed udder. It is very useful for stall-fed rearing system. The average milk yield is 150 liters per lactation of 165 days.

3. Sangamneri

Sangamneri goats occur in Sangamner, its neighbouring talukas of Ahmednagar district and Junnar taluka of Pune district. Sangamneri goats are famous for meat purpose. It is also a medium size breed, mainly white in colour, but black or brown spots may also found. Ears are medium and drooping, udder is small. In this breed, twinning is approximately 54%, single 42%, triplets 3% and quadruplets are 1%. The average milk yield is 70 to 80 liters in 90 days of lactation.

4. Kanyal

Kanyal goats are found in Kudal, Sawantwadi, Dodamarg, Malvan and Vengurle talukas of Sindhudurg district of Konkon. These goats are black having white marking on collar, and lower jaw, ventral surface is white, and muzzle is white, half-moon type. Average birth weight is 1.99 kg. These goats are regular breeder and breeds round the year. Twinning percentage is about 66%.

CHARACTERISTICS OF OSMANABADI GOAT

Osmanabadi goats are medium to enormous in size. Their coat colour varies. Yet, as a rule the coat colour of Osmanabadi goat is dark. Although brown, white or spotted colours are additionally found. They have long legs with excellent appearance. They have medium to long ear. The vast majority of the bucks are horned (around 90%), but some may be pulled. They have little udder with little nipples. On a normal, grown-up, Osmanabadi bucks weight around 36 kg and do around 30 kg (Kumar, 2007c). The Osmanabadi goat is primarily raised for meat and secondly for milk. The breed is well known among the business meat goat farmers.

Osmanabadi goat breed is considered as having high resistant power against diseases when vaccinated and also for their procreative capacity. The breed is easily adapted to any state's climatic

conditions in India and is having high capacity limit. They are all around adjusted to cold, outrageous hot or moist. Under great conditions, they breed routinely double a year and twinning is normal and triples are quite uncommon. Like most other goat breeds, Osmanabadi goat has an incubation time of 5 months. The variety is likewise useful for milk creation with a normal day by day milk yield of 0.5 to 1.5 kg for a lactation time of around 4 months. Osmanabadi goat is an

affordable variety and can be benefitted from a homestead feed, grass, and vegetables. They don't need any exceptional grub and taking care of cost is really low. All things considered, each Osmanabadi goat devour around 2-3 kg green and about 0.5 kg dry feeds. They require less water when contrasted with different varieties. The variety is entirely reasonable for slow down took care of framework. Detail profile of Osmanabadi goat is given in table 1.

Table 1: Osmanabadi Goat/Breed Profile.

Breed Name		Osmanabadi goat
Breed Purpose		Mainly for meat production, also suitable for milk production
Size		Medium to large
Weight	Buck	About 36 kg
	Doe	About 30 kg
Horn		Yes (most of the bucks are horned)
Climate tolerance		All climates
Coat colour		Most common colour is black and rest are brown, white or spotted
Good for stall fed		Yes
Place of origin		India (Osmanabad District of Maharashtra)

1. Housing

Appropriate goat housing or shelter house is necessary for goat farming business. They additionally need house like other home-grown creatures for security and staying at night. A few groups used to keep their goats with other home-grown creatures like cow, sheep and so on (Singh and Kumar, 2007). Indeed, even in certain regions, individuals used to hold their goats under trees. In order to set up a productive business, goat farming needs to build an appropriate house. Important features are as under:

- Selection of a dry and higher place for making the goat house in order to make them safe from floods.
- Proper ventilation and ample supply of light inside the house with provision to control the temperature and moisture.
- Damping should be avoided because it may bring certain diseases.

- Wall of the house should be constructed with concrete or by using bamboo poles.
- The house must have an enough space, strong and comfortable built.
- Arrangement of regular cleaning and hygiene should be there.

Each goat requires ample space for proper growth and development. In order to increase the body size and weight of goats, more space is required. A house of 1.8 meter x 1.8 meter x 2.5 meter (5.5 x 5.5 x 8.5 ft) is suitable enough for housing 10 small goats. Each adult goat requires about 0.75 meter x 4.5 meter x 4.8 meter housing space. It is always good to keep the nursing and pregnant goats separately. The size of goat house can be increased or decreased as per the number of goat in the farm. Required space for goats according to their age and nature is given in table 2.

Table 2: Required space for Goats.

Goat	Required Space (Sq M)
Baby Goat	0.3
Adult Goat	1.5
Pregnant Goat	1.9
Billy Goat	2.8

Goat house can be made by using various designs. Specific goat housing design is appropriate for specific production purposes. There are following types of houses most common for raising the goats:

(a) Goat Housing over Ground

Basically this type of house is designed on the ground (fig. 1). This is the most common house for goats, the floor of which can be made with brick and cement or simply with soil. It will be better to spread some dry straw over the floor in this housing system but house must remain dry and clean always.

(b) Goat Housing over Pole

These houses are designed over poles (fig. 2). The height of floor of such type of house is about 1 to 1.5 meters (3.5 to 5 ft) from the ground. This house keeps the goat free from damping condition, flood, water etc. The poles and floor in this housing system are usually made with bamboo or wood.

**Fig. 1: Goat housing over ground.**

These types of houses are very appropriate for goat farming, because it is very easy to clean and maintain hygiene.

(c) Concrete Houses

Such type of goat houses is completely designed with concrete, hence very expensive. The concrete houses (fig. 3a and 3b) have many benefits. The concrete houses are easy to clean and the goats remain protected from predators and other enemies (Sawaimul *et al.*, 2009). Such type of house can be made over ground or over concrete poles. Diseases are less in this housing system because it is easy to maintain hygiene.

**Fig. 2: Goat housing over poles.**



Fig. 3a: Goat concrete house (outer view).



Fig. 3b: Goat concrete house (inner view).

2. GOAT FEED

Quality feed ensures quality meat or milk (Dalgado *et al.*, 1999). Goats consistently save themselves for looking through food sources. Generally, they can go a long way from their space for looking through food. This sort of food propensity assists them with satisfying up the nourishing needs. Normally goats are exceptionally strong and can endure climate change profoundly. They can get by for long time without water in substantial dry spell. During catastrophic events and food emergency, they can even devour inferior quality food. This kind of endurance with inferior quality food isn't workable for different creatures. Their mouths are exceptionally solid among all the plant eating creatures. With their solid mouth, they can eat any sorts of grasses, various kinds of leaves, parts of trees and so on. Despite the fact that goats eat a wide range of food however, they don't care to eat same food consistently. In this way, they ought to have assortment in their standard taking care of propensity. Goats generally don't eat extras of another goat. They can comprehend the flavor of food and they can eat and burn-through such food which different creatures don't eat (even touch). Continuous care about quality of food can make the goat healthy.

Like the food of other domestic animals, goat feed should contain proper amount of protein, fat, minerals and vitamins. Goats usually drink less water than other livestock animals. Different types of goat feed are as following:

(a) Roughage

Consuming this kinds of food is troublesome. These contain more than 18% fiber and absolute edible supplements below 60%. Roughage for goats is either dry or delicious. Delicious roughage contains 75-95% water, grasses, maize, nipplier, jack, organic product leaf, mango leaf, guava leaves, cabbage, beat and so on. Goats have compound stomach.

(b) Grainy

Grainy feed or feed blender is effectively edible and improved with different sorts of nutritious fixings like protein, carbohydrate and fat. This sort of goat feed contains less water and less than 18% fiber. Complete edible supplement is below 60%. The primary wellsprings of grainy goat feed are beat, wheat, maize, rice, gram, pea, potato and so forth. Moreover, assembled cake, sesame cake, molasses, agrarian products etc. may also be present.



Fig. 4: Adult Goat with kids.

(c) Goat feed additives

In order to make nutritious goat feed, various sorts of nutrients and minerals are added. It increases the flavor of food and goat can undoubtedly process it. By burning through roughage feed, goats can endure their life. Yet, for delivering meat, milk, skin or hide from goat

economically, proper care is needed with various kinds of grainy feed alongside roughage/greens.

Essential Nutrition Ingredients in Goat Feed

Goats need different types of nutrients in their feed. A list of essential nutrient ingredients and requirement is given in table 3.

Table 3: Essential nutrition ingredients in Goat feed.

Nutrition ingredients	Requirement
Dry Material	A- For meat production 2-2.5% of their body weight. B- For milk production 4-8%
Energy	A- 7-8 g/kg body weight for survival B- 3 g/kg body weight for body growth C- 300 g for the production of 1 liter of milk
Protein	A- Every 10 kg goat needs 4.5-6.4 g digestible crude protein for survival. B- 70 g crude protein for the production of 1 liter of milk.
Water	Goat with 18-20 kg body weight needs about 0.5-1.0 lit. water daily
Dry food: water	1:4
Minerals	147 mg calcium and 72 mg phosphorus for per kg body weight of goat.

Balanced Goat Feed

The food which contains all nutrient ingredients in proper ratio and quantity to meet up the demand of goat's body is known as 'balanced goat

feed'. Every goat needs quality nutritious food for healthy life and better production (Singh, 2006). Balanced goat feed is given in table 4.

Table 4: Balanced goat feed.

Feed ingredients	Baby Goat (%)	Dairy Goat (%)	Meat Goat (%)	Pregnant Goat (%)
Gram	20	15	20	50
Maize/ broken wheat	22	37	23	20
Sesame/ Nut cake	35	25	30	20
Wheat powder	20	20	24	07
Minerals	2.5	2.5	2.5	2.5
Salt	0.5	0.5	0.5	0.5
Total	100	100	100	100

3. GOAT BREEDING:

In Osmanabadi goats (fig. 4), the major kidding season is winter followed by summer and rainy season. The birth weight of kids was significantly affected by the kidding season and it was higher in rainy season than other two seasons. The birth weight also varied significantly between the male

and female kids and it was higher in male kids (Harikrishna *et al.*, 2013). In Osmanabadi goats at a single breeding period, female gives birth to normally two kids and sometimes three.

4. GOAT DISEASES

Goats for the most part get tainted by viruses,

parasites and hunger sicknesses. Some goat diseases are as following:

(1) Anthrax

This disease is caused by bacterium named '*Bacillus anthracis*' (anthrax bacterium). It enters the body of goat through their feed, water, breath and wound places and starts showing symptoms within 1 to 5 days. Blood may come out from the nose, mouth and anus of goat. Sometimes goat may die without any symptoms (Kumar, 2007b).

The affected goats stop eating suddenly. They do not ruminate. Temperature of their body can be up to 41° Fahrenheit. They suffer much while breathing. The germ of this disease can survive for up to 40 years and can infect humans and other animals.

(2) Pneumonia

Inflammation of lung is known as pneumonia. This disease occurs due to various reasons like bacteria, virus, parasites etc. It is a fatal disease. Germs or parasites of this disease spread through food, water and breath of diseased goat.

Body temperature of affected goat increases up to 45° Fahrenheit. They take breath frequently and suffer from coughing and snivel ooze from the nose. Tongue gets swelled and affected goat always keeps it out. They stop feeding and ruminating.

(3) Foot and Mouth Diseases

This is a fatal contagious goat disease. Animals with hoof like cow, buffalo, sheep, goat, pig, deer etc. get affected by this disease. One kind of tiny virus is responsible for this disease.

The first symptom of this disease is fever. Succulent blister like water can be seen inside their mouth, lips, tongue and middle of the two hooves (Kumar *et al.*, 2003). This blister ruptures while eating food and the wound place turned into red colour. Saliva flows from mouth. Bad smell spread from the wound place.

(4) Enterotoxemia

This disease occurs due to toxin produced by bacterium, *Clostridium* species (genus of Gram-positive bacteria). It infects the goat when goat feeds only grainy food because grainy food helps to produce toxin and grow the bacteria rapidly.

Affected goat gets excited and can die suddenly. Body remains shaking and flagrant always. The affected goats stave off their head with solid objects. Saliva flows from their mouth. Closet becomes waterish. Affected goats die within 24 hours.

(5) Worm Infestation

Worms are very harmful parasites for goats. Baby goats get affected by worms more rapidly in comparison to adults. Adult goats get affected by tapeworm and baby goats by flatworms.

Belly of infected goat becomes very big in size with the loss of appetite. General body growth gets reduced. Desirability gets damaged. Sometimes worms come out with their closet.

CONCLUSION

Due to its good economic prospects, goat rearing for commercial production has been gaining momentum for the past couple of years. High demand for goat and its products with potential of good economic returns are deriving many progressive farmers, businessmen, professionals, ex-servicemen and educated youths to take up the goat enterprise on a commercial scale. The emerging favorable market conditions and easy accessibility to improved goat technologies are also catching the attention of entrepreneurs. Authors identified a total of 157 commercial goat farms in 16 states with the help of published and Internet sources, NGOs, Animal Husbandry Departments, farmers, key informants and other agencies through personal contact and questionnaire. By taking proper care of Osmanabadi goats from various diseases and various climatic conditions, production of goats is increased with good quality of flesh and milk.

REFERENCES

1. **Ashok K. V.** (2017). A Handbook of Zoology. ShriBalaji Publications, Muzaffarnagar. 5th edn. 648p.
2. **Birthal P. S. and Joshi P. K.** (2006). High Value Agriculture for Accelerated and Equitable Growth: Policy Brief. No. 24, National Centre for Agricultural Economics and Policy Research, New Delhi.

3. **Dalgado C., Rosegrant M., Steinfeld H., Ehui S., and Courbois C.** (1999). The Next Food Revolution. Food, Agriculture and Environment Discussion Paper 28, IFPRI, Washington.
4. **Harikrishna C., Raghunandan T. and Gnana Prakash M.** (2013). Effect of season on kidding and birth weight in Osmanabadi goats reared in an organized farm. *International Journal of Livestock Research*. 3(2):84-88.
5. **Kumar S. and Deoghare P. R.** (2002). Goat rearing and rural poor: A case study in south-western semiarid zone of Uttar Pradesh. *Annals of Arid Zone*. 41(1): 79-84.
6. **Kumar S., Vihan V. S. and Deoghare P. R.** (2003). Economic implication of diseases in goats in India with special reference to implementation of a health plan calendar. *Small Ruminant Research*. 47: 159-164.
7. **Kumar S.** (2007a). Commercial Goat Farming in India: An Emerging Agri-Business Opportunity. *Agricultural Economics Research Review*. 20:503-520.
8. **Kumar S.** (2007b). Commercialization of Goat Farming and Marketing of Goats in India. Final Report of ICAR Ad-hoc Research Scheme 2007. Central Institute for Research on Goats, Makhdoom, Mathura.
9. **Kumar S.** (2007c). Multi-disciplinary project on transfer of technology for sustainable goat production, Annual Report 2006-07. Central Institute for Research on Goats, Makhdoom, Mathura.
10. **Kakade P. L., Tekade S. H. and Kulkarni D. S.** (2009). Sheep and Goat Production in Maharashtra. Reading Material, SLTC, Pune.
11. **Singh N. P.** (2006). Technological advances for commercial goat production. In: Commercial Goat and Sheep Farming and Marketing: Farmer-Industry Researcher Interface. Central Institute for Research on Goats, Makhdoom, Mathura.
12. **Singh N. P. and Kumar Shalander** (2007). An alternative approach to research for harnessing production potential of goats. Proceedings of 4th National Extension Congress, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur.
13. **Sawaimul A. D., Sahare M. G., Ali S. Z. and Kolte B. R.** (2009). Survivability of Osmanabadi goat maintained at Farm condition in Vidarbha Climatic Condition. *Veterinary World*. 2(2): 57.
14. **Verma A. K. and Prakash S.** (2020). Status of Animal Phyla in different Kingdom Systems of Biological Classification. *International Journal of Biological Innovations*. 2 (2): 149-154. <https://doi.org/10.46505/IJBI.2020.2211>.