

Note-Prior to starting Goat farming consult with expert veterinarian

COMMERCIAL GOAT FARMING



1. Why do goat rearing?

Goat is a multi functional animal and plays a significant role in the economy and nutrition of landless, small and marginal farmers in the country. Goat rearing is an enterprise which has been practiced by a large section of population in rural areas. Goats can efficiently survive on available shrubs and trees in adverse harsh environment in low fertility lands where no other crop can be grown. In pastoral and agricultural subsistence societies in India, goats are kept as a source of additional income and as an insurance against disaster. Goats are also used in ceremonial feasting and for the payment of social dues. In addition to this, goat has religious and ritualistic importance in many societies. The advantages of goat rearing are :

- i) The initial investment needed for Goat farming is low.
- ii) Due to small body size and docile nature, housing requirements and managerial problems with goats are less.
- iii) Goats are friendly animals and enjoy being with the people.
- iv) Goats are prolific breeders and achieve sexual maturity at the age of 10-12 months gestation period in goats is short and at the age of 16-17 months it starts giving milk. Twinning is very common and triplets and quadruplets are rare.
- v) In drought prone areas risk of goat farming is very much less as compared to other livestock species.
- vi) Unlike large animals in commercial farm conditions both male and female goats have equal value.

Note-Prior to starting Goat farming consult with expert veterinarian

- vii) Goats are ideal for mixed species grazing. The animal can thrive well on wide variety of thorny bushes, weeds, crop residues, agricultural by-products unsuitable for human consumption.
- viii) Under proper management, goats can improve and maintain grazing land and reduce bush encroachment (biological control) without causing harm to the environment.
- ix) No religious taboo against goat slaughter and meat consumption prevalent in the country.
- x) Slaughter and dressing operation and meat disposal can be carried without much environmental problems.
- xi) The goat meat is more lean (low cholesterol) and relatively good for people who prefer low energy diet especially in summer and sometimes goat meat (chevon) is preferred over mutton because of its "chewability"
- xii) Goat milk is easy to digest than cow milk because of small fat globules and is naturally homogenised. Goat milk is said to play a role in improving appetite and digestive efficiency. Goat milk is non allergic as compared to cow milk and it has anti-fungal and anti bacterial properties and can be used for treating urogenital diseases of fungal origin.
- xiii) Goats are 2.5 times more economical than sheep on free range grazing under semi arid conditions.
- xiv) Goat creates employment to the rural poor besides effectively utilising unpaid family labour. There is ample scope for establishing cottage industries based on goat meat and milk products and value addition to skin and fibre.
- xv) Goat is termed as walking refrigerator for the storage of milk and can be milked number of times in a day.

2 Scope for goat rearing and its national importance

The country has 115.278 million goat as per 1992 livestock census has increased to 120.8 million in 1997 and ranks first in the world. The state wise goat population is given in Annexure-I. Goat meat production stands at the level of 0.47 million tonnes. The slaughter rate of goat is at the level of 39.7 % as compared to 31.8% for sheep and 11% for buffaloes respectively. Goat also produce 2.55 million tonnes of milk and 0.1288 million tonnes of skin as per FAO 189 records 2002 report (Annexure-II).The trend in consumption of mutton and goat meat shows increase from 467000MT in 1981 to 696000 MT in 2002 indicating annual compound growth rate of 1.28 % during 92-02. Sheep and goat meat production has reached 700400MT during 2002 in India. Ovine meat export has touched 29670 thousand \$ during 2000 which was then reduced to 5635 thousand \$ during 2001.

Dr. D.P.Bhoite
M.V.Sc.(Animal Reproduction)

Note-Prior to starting Goat farming consult with expert veterinarian

2.2 Goat make a valuable contribution to the livelihood of economically weaker sections of the society. Amongst the livestock owners goat rearers are the poorest of the lot.

2.3 Realising the importance of goat in the agrarian economy of the country, various developmental activities have been taken up by Govt.of India. The Central Government had established Central Institute for Research on Goats at Makhdoom, Farah, Mathura District,UttarPradesh. During VIII Plan Period Seven Intensive goat breeding farms were proposed with the objectives:

- i) To produce 1000 stud bucks per year for the distribution among goat rearers
- ii) To improve yield of milk and chevon through selective breeding of regular breeds like Jamnapari, Beetal, Barbari, Jakhrana, Jhalawadi.
- iii) Cross breeding of non Pashmina goats with Angora goats to produce Mohair in Jammu and Kashmir, Himachal Pradesh and Uttar Pradesh.
- iv) To conserve germ plasm of regular breeds like Jamnapari, Beetal, Barbari, Black Bengal, Malbari, Sirohi etc.

3. Financial assistance available from banks/NABARD for Goat rearing

3.1 NABARD is an apex institution for all matters relating to policy, planning and operation in the field of agricultural credit. It serves as refinancing agency for the institutions providing investment and production credit for agriculture and rural development. It promotes development through a well organised Technical Services Department at the head office and Technical Cells at each of the Regional Offices.

3.2 Loan from banks with refinance facility from NABARD is available for starting Goat farming. For obtaining bank loan, the farmers should apply to the nearest branch of a Commercial or Co-operative or Regional Rural Bank in their area in the prescribed application form which is available in the branches of financing bank. The Technical Officer attached to or the Manager of the bank can also help/give guidance to the farmers in preparing the project report to obtain bank loan.

3.3 For goat rearing schemes with very large outlays, detailed reports will have to be prepared. The items of finance would include costs of assets like Development of land, construction of sheds, purchase of equipments, purchase of breeding stock, rearing cost of animals till it generates income etc. The cost of land is not considered for loan. However, if land is purchased for setting up a goat farm its cost can be treated as party's margin as per the norms.

4. Scheme formulation

4.1 A scheme can be prepared by a beneficiary after consulting local technical persons of State animal husbandry department, Commercial farmers etc. If possible the beneficiaries

Dr. D.P.Bhoite
M.V.Sc.(Animal Reproduction)

Note-Prior to starting Goat farming consult with expert veterinarian

should also visit progressive goat rearers and government/ military/ agricultural university farms in the vicinity and discuss the profitability of goat rearing. A good practical training and experience in goat rearing will be highly desirable. Nearness of the Goat farm to a veterinary aid centre and breeding centre should be ensured.

4.2 The scheme should include information about land, livestock markets, availability of water, feed, fodders, veterinary aid, breeding facilities, marketing aspects, training facilities, experience of the farmer and the type of assistance available from State Government.

4.3 The scheme should also include information on number and types of animals to be purchased, their breeds, production performance, cost and other relevant input and output costs with their description. Based on this, the total cost of the project, margin money to be provided by the beneficiary, requirement of the bank loan, estimated annual expenditure, income, profit and loss statement, repayment period etc, can be worked out and included in the scheme.

5. Requirements of a Good Project

A format developed for formulation of Goat rearing schemes is appended as Annexure-III. The scheme so formulated should be submitted to the nearest branch of bank. The bank's officers can assist in preparation of the scheme or filling in the prescribed

6. Sanction of Bank Loan and its Disbursement

After ensuring technical feasibility and financial viability, the scheme is sanctioned by the Bank. The loan is disbursed in stages against creation of specific assets, purchase of equipments and animals. The end use of the loan is verified and constant follow-up is done by the bank.

I. Housing management:

- 1) Construct shed on dry and properly raised ground.
- 2) Avoid water-logging, marshy areas.
- 3) In low lying and heavy rainfall areas the floors should be preferably elevated.
- 4) In temperate Himalayan region the floor may be made of wood.
- 5) The shed should be 10 ft. high and should have good ventilation.
- 6) Bucks should be housed in individual pens.
- 7) Does can be housed in group's up to 60 per pen.

Note-Prior to starting Goat farming consult with expert veterinarian

- 8) Provide proper shade and cool drinking water in summer.
- 9) Dispose of dung and urine properly.
- 10) Give adequate space for the animals. The housing space required for
- 11) Goats of various age groups is given in Annexure VIII.
- 12) Avoid over stocking or crowding

II. Selection of breeding stock and its management:

1. Immediately after release of the loan purchase the stock from a reliable breeders or from nearest livestock market.
2. Animals in good health and having good physical features must be purchased in consultation with Veterinarian/ Bank's technical officer.
3. Purchase animals which are ready to breed and in prime stage of production.
4. Identify the newly purchased animals by suitable identification mark.
5. Vaccinate the newly purchased animals against the diseases
6. Keep the newly purchased animals under observation for about 15 days and then mix with the general flock.
7. Unproductive animals should be culled promptly and should be replaced by the newly purchased animals or farm born one
8. Animals are to be bred at the interval of 8-9 months for maximum productivity.
9. Cull the old animals at the age of 6 years and above.
10. Avoid the kidding during peak periods of summer and winter.

III. Feeding management:

1. Ensure Bushes/shrubs for browsing of animals
2. As an alternative to above, supply of cultivated fodder from own farm or from surrounding farms may be ensured.
3. Offer roughages adlib.

Note-Prior to starting Goat farming consult with expert veterinarian

4. As a thumb rule 2/3rds of the energy requirements should be met through roughages. Half of the roughages should be leguminous green fodders and rest half should be grasses/tender tree leaves.
5. In the absence of good quality green fodders, concentrates must be considered to replace them.
6. Kids should be fed colostrums up to 5 days of age. Later on they can be put on Kid starter rations.
7. Green leguminous fodders should be offered adlib. to kids from 15 days onwards.
8. Provide salt and water to kids at all times
9. Additional concentrates should be given to bucks and does during breeding season.
10. Care should be taken to meet the nutrient requirements as recommended (Annexure-

Protection against diseases:

1. Be on the alert for signs of illness such as reduced feed intake, fever, abnormal discharge or unusual behavior.
2. Consult the nearest veterinary aid centre for help if illness is suspected.
3. Protect the animals against common diseases.
4. In case of outbreak of contagious diseases, immediately segregate the sick animals from healthy one and take necessary disease control measures.
5. Deworm the animals regularly.
6. Examine the feces of adult animals to detect eggs of internal parasites and treat the animals with suitable drugs.
7. Provide clean and uncontaminated feed and water for minimizing the health disorders.
8. Strictly follow the recommended vaccine schedule as given in Fig. 2.

V. Breeding care:

1. It should be planned to obtain 3 kiddings in 2 years period by adopting optimal management conditions.
2. For every 25 does one buck should be provided in one breeding season.

Dr. D.P.Bhoite
M.V.Sc.(Animal Reproduction)

Note-Prior to starting Goat farming consult with expert veterinarian

3. Breed the animals 12 hours after the onset of the first symptoms of heat for maximum conception.

4. Unbreed able animals must be examined thoroughly as directed by veterinary doctor for prompt elimination of causes for anoestrus or cull them if necessary.

VI. Care during pregnancy:

In advanced stage of pregnancy the does must be transferred to either kidding pens or separately earmarked space for kidding with in the main shed after thoroughly disinfecting it. After kidding, the does should be provided with warm bran mash for two days.

VII. Care of kids:

1. Take care of new born kids by providing guard rails.
2. Treat / disinfect the naval cord with tincture of iodine as soon as it is cut with a sharp knife.
3. Protect the kids from extreme weather conditions, particularly during the first two months.
4. Dehorn the kids during first two weeks of age
5. Male kids should be castrated for better quality meat production.
6. Vaccinate the kids as per the recommended schedule
7. Wean the kids at the age of 8 weeks
8. Proper selection of kids on the basis of initial body weight and weaning weight should be initiated by maintaining appropriate records for replacing the culled adult stock as breeders.
9. Additional feed requirements of lactating does must be ensured for proper nursing of all the piglets born.

Marketing:

The marketable products of goat farming include the fattened kids, manure, and culled animals. Marketing avenues for the above products are slaughter houses and individual meat consuming customers and agriculture farms. Therefore availability of either slaughtering facilities or traders who will purchase live animals should be ensured to convert the fatteners into wholesome meat and meat products. Further, demand for manure from nearby agriculture farms must also be ensured.

Dr. D.P.Bhoite
M.V.Sc.(Animal Reproduction)

Note-Prior to starting Goat farming consult with expert veterinarian

Goat breeds of India and their description

Region/breed	Utility	Body size	Adult Weight	Confirmation
1	2	3	4	5
1. Temperate				
Gaddi	Fibre	Medium	M 27.45+ - 0.41 F 24.72+ - 0.51	Coat colour is while but black and brown combination is also seen. Ears medium and drooping, nose convex, under small and and round long white hairs
Changthangi	Fibre	Small	M 20.37+- 0.24 F19.75+- 0.15	Predominantly white but grey, brown or black also found. Large horns. Producing pashmina as under coat
Chegu	Fibre	Small	M 21.39+_ 1.12 F 20.45 +_ 0.45	Coat is usually white mixed with greyish red producing pashmina as under coat
Shingari	Meat	Small	M 25.23 + - 0.56 F 20.35 + - 0.41	Coat colour vary from while to grey with black or tan patches
2. North- Western Region				
Jamunapari	Milk	Large	M 44.66 + - 1.89 F 38.03 + - 0.63	Predominantly white with brown patches on neck and face, long and pendulous ears, roman nose, tuff of hairs on buttocks, large and developed udder
Beetal	Milk	Large	M 59.07 +_ 2.82 F 34.97 +_ 0.52	Coat colour is black or brown with white patches. Face convex, long and flat ears, udder large

Note-Prior to starting Goat farming consult with expert veterinarian

				and well set
3.Southern Region				
Osmanabadi	Milk & Meat	Medium	M 33.66 + - 0.55 F 32.36 + - 0.55	Coat colour variable-black, white or spotted, medium long ears, udder is small, round with short teats
Malabari	Milk & Meat	Medium	M 38.96 + - 2.32 F 31.12 + - 0.90	Coat colour vary from complete white to complete black, small twisted horns, medium sized ears, udder small and round
Sangamneri	Meat	Medium	M 38.37 + - 2.44 F 28.97 + - 0.49	Body colour white, black or brown with spots. Ears are medium and drooping, udder small
4. Eastern Region				
Bengal	Meat	Small	M 32.37 + - 2.74 F 18.31 + - 1.67	Colour is black, brown or grey, short horns both sexes have beard, profile, udder very small
Ganjam	Meat	Medium	M 44.05+ - 0.13 F 31.87+ - 0.37	Tall, laggy, coat is black, white or brown or spotted, medium sized ears, straight long horns, udder poorly developed
Assam Hill	Meat	Small	M 25.45+ - 2.12 F 18.31+ - 1.67	Small body with short leg, coat colour vary from black to brown and spotted ears small and flat
Jakharana	Milk	Large	M 57.80 + - 3.50 F 44.48 + - 0.52	Coat is predominantly black with white spots on ears, narrow

Note-Prior to starting Goat farming consult with expert veterinarian

				forehead, udder is large with conical teats.
5. Western Region				
Sirohi	Milk & Meat	Large	M 50.37+ - 2.52 F 22.54+ - 0.17	Compact body, coat colour predominantly brown with light or dark patches, flat ears, udder medium sized and round
Barbari	Milk & Meat	Medium	M 30.8+ - 1.96 F 22.56+ - 0.17	Body compact, coat colour is white with brown patches, short erect ears, shining eyes, udder well set with small teats
Kutchi	Milk and Meat	Medium	M 43.50+- 1.16 F 39.29+ - 0.38	Coat is predominantly black, few with brown or white spots, long hairs, long and drooping ears, udder well developed.
Marwari	Milk and Meat	Medium	M 33.18+ - 1.77 F 25.85+ - 0.29	Predominantly black coat with long hairs, few animals with white or brown patches, udder is round and small
Mehasana	Milk and Meat	Medium	M 37.14+ - 1.51 F 32.29+ - 0.38	The coat is black with white spots at the base of the ears. Leaf like & drooping ears, twisted horns, developed udder.
Zalawadi	Milk and Meat	Medium	M 38.84+ - 1.46 F 32.99+ - 0.32	Coat is black with long hairs, long and drooping ears, long twisted horns, large udder with conical teats.

Note-Prior to starting Goat farming consult with expert veterinarian

Surti	Milk	Medium	M 29.50+ - 0.50 F	White in colour, medium sized ears, small horns, very well developed udder
-------	------	--------	----------------------	--

Source : CIRG, Makhdoom

M - Male F-Female

SPACE REQUIREMENT OF GOATS

Sl. No.	Type of goats	Space requirement Sq.mt.per head	Maximum No. of animals per pen				
				1	Adult doe	1.00	60
2	Milch doe	1.68	Individual pens				
3	Buck	3.4	Individual pens				
4	Kids	0.4	75				

Nutrient requirements of goats in percentage or AMOUNT PER KG OF DRY FEED

Sr. No.	Type of animals	Body wt.(kg)	DCP (%)	TDN (%)	ME (%)	Ca (%)	P(%)
1	Growing - finishing kids						
	a) small breeds	5	12.8	70	2.52	0.23	0.21
		10	10	65	2.34	0.23	0.21
		15	7	65	2.34	0.21	0.2
		20	6	60	2.16	0.2	0.19
		25	5.5	60	2.16	0.2	0.19
	b) Large breeds	10	12	70	2.52	0.23	0.21
		15	10	65	2.34	0.21	0.2
		20	7	65	2.34	0.2	0.19
		25	6	60	2.16	0.2	0.19
		30	5.5	60	2.16	0.19	0.18
		35	5	55	1.98	0.19	0.18
2	Non lactating pregnant does						
	a) first 15 weeks of gestation	25	4.5	50	1.8	0.3	0.23

Dr. D.P.Bhoite
M.V.Sc.(Animal Reproduction)

Note-Prior to starting Goat farming consult with expert veterinarian

		30	4	50	1.8	0.27	0.21
		40	4	50	1.8	0.27	0.21
		50	4	50	1.8	0.24	0.19
		60	4	50	1.8	0.22	0.17
	a) last 6 weeks of gestation	25	5	55	1.98	0.27	0.21
		30	5	55	1.98	0.24	0.2
		40	5	55	1.98	0.23	0.17
		50	4.5	53	1.91	0.22	0.16
3 Lactating does							
	a) First half of lactation	25	6	65	2.34	0.3	0.22
		30	6	62	2.23	0.29	0.21
		40	5	60	2.16	0.28	0.2
		50	5	60	2.16	0.27	0.2
		60	4.5	60	2.16	0.27	0.2
	a) Second half of lactation	25	5.5	60	2.16	0.3	0.22
		30	5.5	60	2.16	0.28	0.2
		40	5	55	1.98	0.27	0.19
		50	4.5	55	1.98	0.25	0.18
		60	4.5	55	1.98	0.24	0.17
4 Bucks - breeding, adult and yearlings							
		25	6.5	65	2.34	0.21	0.19
		30	6	65	2.34	0.2	0.18
		40	5	64	2.3	0.2	0.18
		50	5	60	2.16	0.18	0.16
		60	4.5	55	1.98	0.17	0.15
		70	4	50	1.8	0.16	0.13
		80	4	50	1.8	0.15	0.14