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## Studies on goat rearing practices followed by goat owners in Hatkanangale tehsil of Kolhapur district

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### Abstract

The present study entitled “Studies on goat rearing practices followed by Goat owners in Hatkanangale tehsil of Kolhapur district” was carried out by randomly selecting 200 goat owners from ten villages and were classified in four different flock size groups i.e., very small (1-10 goats), small (11-25 goats), medium (26-50 goats) and large (above 50 goats). The findings indicated that, maximum number of the goat owners were having middle age group 52.00%. In feeding practices 87.50% were followed only grazing, feeding of concentrates followed by 26.50%, while, neither goat owners adopted stall feeding nor use of mineral mixture or mineral bricks. 100% goat owners adopted natural breeding while, none of the goat owners had adopted artificial insemination. In management practices related to cleaning and housing majority of goat owners have maintained shed in clean condition 100%, provides clean drinking water by 49.00%. The management practices related to health care majority of goat owners have adopted deworming by 92.00% followed by vaccination 79.50% and washing of goats practiced by 16.00% goat owners.

**Keywords:** Feeding and management, goat owners, grazing, mineral mixture

### Introduction

India is predominantly an Agricultural country and about its 70% of population depends upon agriculture only. One of the major problems faced by India is to feed its increasing population with balanced diet. This fact has been termed by the researchers as the downward structural change in agriculture. These necessities the importance of subsidiary occupation like goat rearing to increase the income and employment to the rural poor there by improves their standard of living. India ranks first contributing over 20.3% of the total world goat population. The goat population of the world is 921.431 million and that of India is one fifth of the world that is 148.88 million goats annually produces about 586500, 4300000 and 136000 tonnes of meat, milk and skin, respectively. Population of goats in Maharashtra was 109.81 lakhs (economic survey of Maharashtra 2019-20). There are approximately 351 breeds of Goat found in world, majority of which are found in arid and semi-arid regions. About 26 breeds of goats were observed in India. Jamunapari, Beetal, Sangamneri, Osmanabadi, Barbary, Black Bengal, Malabar, and Kashmiri are considered to be the important milch and meat purpose breeds of goats in India. Due to explosive population growth, the shrinkage in land holding in the country has a striking effect on the economy of the people. The increase in population has led to a very high pressure on cultivable land especially in rural areas. In between various classes of the livestock, goat constitute a major source of supplementary income to those who cannot afford to maintain dairy cattle or other species of livestock for milk and meat etc. Total goat population in the country is 148.88 million farming 25.45% of the livestock population and 109.81 lakh goats are reared in the state. The total livestock population in the Pune division is near about 575905 and out of this 130053 goats' population exist in Kolhapur district.

### Materials and Methods

The present entitled “Studies on goat rearing practices followed by Goat owners in Hatkanangale tehsil of Kolhapur district” was undertaken during the year 2021-2022.

The data was collected from different goat owners in Hatkanangale tehsil by randomly selecting 200 goat owners from 10 village on the basis of highest goat population under which 20 goat owners from one respective village were selected for the study.

### Selection of goat owners

A list of farmers who possess goat from each selected village was prepared with the help of Gramsevak, Agril. Assistant, Sarpanch of concerned villages. From each selected village 20

goat owners were selected randomly among which very small (1-10 goats), small (11-25 goats), medium (26-50 goats) and large (above 50 goats). Thus, the number of samples of goat owners were selected randomly to makeup total number of 200 goat owners. The data from 200 goat owners were collected by contacting them personally with the help of structured interview schedule. The details of village's wise number of goat owners from selected villages are given in below.

### Village wise number of goat owner selected for study

Sr. No.	Name of village	Number of goat owners selected
1.	Ambap	20
2.	Ambapwadi	20
3.	Atigre	20
4.	Top	20
5.	Vathar	20
6.	Kini	20
7.	Vadgaon	20
8.	Talsande	20
9.	Chavare	20
10.	Ghunaki	20
Total		200

### Collection of data

The data were collected in a face-to-face situation by contacting personally the selected goat owners. The goat owners were contacted on the grazing lands or at their homes as per their convenience. Before actual seeking information, goat owners were introduced with the objectives of the study. The pre-tested interview schedule used for data collection. Thus, the data were collected from 200 goat owners from the selected villages.

### Variables selected for the study with their empirical measurements

#### Independent variable

The Independent variables selected for the present study and their operational definition, scoring and categorization have been discussed below.

#### Age

Age in the present study has been considered as a chronological age of the respondents at the time of interview expressed in terms of completed years Shown as below.

Sr. No.	Age of goat owners	Years
1.	Young	Up to 30 years
2.	Middle	31 to 50 years
3.	Old	50 and above

#### Education

Education in the present study has been considered the level of formal education of an individual goat owner. Accordingly, they were classified into 5 categories as per the Maharashtra Government norms.

Sr. No.	Standard passed	Education
1.	1. No schooling	Illiterate
2.	1 <sup>st</sup> to 7 <sup>th</sup> std.	Primary education
3.	8 <sup>th</sup> to 10 <sup>th</sup> std.	Secondary education
4.	11 <sup>th</sup> to 12 <sup>th</sup> std.	Higher secondary education
5.	Graduation and above	College

### Family size

It was operationalized as the total number of members living together in a family of goat owner under a common roof having blood relations and sharing common food. Adopted members residing permanently with family were also included.

Accordingly, to the present concept of the family size, the respondents were grouped into three groups as following.

Sr. No.	Category	Family size
1.	2. Small	Up to 3 members
2.	Medium	4 to 6 members
3.	Large	More than 6 members

### 1.4 Land holding

It refers to the number of hectares of land possessed by an individual for cultivation of crop. In the present investigation the size of land holding was measured in hectares of land possessed by respondents. Goat owners according to land holding were categories as follow on the basis of the Maharashtra Government norms.

Sr. No.	Category	Land holding
1.	3. Landless	Having no land
2.	Marginal	Up to 1.0 ha
3.	Small	1.1 ha to 2. ha
4.	Large	More than 10 ha

### Flock size

It refers to total number of goats possessed by goat owner. On the basis of number of goats reared by goat owners having minimum 3 and above goats, were grouped in four categories as below.

Sr. No.	Category	No. of goat
1.	4. Very small	1-10 goats
2.	Small	11-25 goats
3.	Medium	26-50 goats
4.	Large	Above 50 goats

## Results and Discussion

**Table 1:** Feeding and management practices adopted by goat owners

Sr. No.	Feeding practices	Very small (N=22)	Small (N=125)	Medium (N= 35)	Large (N=18)	Total 200
1.	<b>Systems of feeding</b>					
i)	Grazing	19 (86.36)	109 (87.20)	31 (88.57)	16 (88.88)	175 (87.50)
ii)	Stall feeding	0 (00)	0 (00)	0 (00)	0 (00)	0 (00)
iii)	Grazing+stall feeding	3 (13.63)	16 (12.80)	4 (11.42)	2 (11.11)	25 (12.50)
2.	Feeding of green fodder	9 (40.90)	46 (36.80)	12 (34.28)	6 (33.33)	73 (36.50)
3.	Feeding of dry fodder	7 (31.81)	42 (33.60)	11 (31.42)	5 (27.70)	65 (32.50)
4.	Additional ration for pregnant animal	12 (54.54)	47 (37.60)	13 (37.14)	10 (55.55)	82 (41.00)
5.	Feeding of common salt	14 (63.63)	46 (36.80)	12 (34.28)	9 (50.00)	81 (40.50)
6.	Feeding of concentrates	9 (40.90)	30 (24.00)	6 (17.14)	8 (44.44)	53 (26.50)
7.	Processing of concentrates before feeding (Crushing soaking etc.)	9 (40.90)	39 (31.20)	10 (28.57)	8 (44.44)	66 (33.00)
8.	Use of mineral mixture or mineral bricks.	0 (00)	0 (00)	0 (00)	0 (00)	0 (00)
9.	<b>Feeding of concentrates</b>					
i)	Separate	8 (36.36)	33 (26.40)	9 (25.71)	6 (33.33)	56 (28.00)
ii)	With roughages	14 (63.63)	92 (73.60)	26 (74.28)	12 (66.66)	144 (72.00)
10.	Total	22	125	35	18	200

### System of feeding

It was observed from table 1. that, out of 200 goat owners from each type of flock size were adopted grazing systems of feeding were 86.36%, 87.20%, 88.57% and 88.88% by very small, small, medium and large category of goat owners respectively. The overall adoption only grazing was 87.50% among 200 selected goat owners. Similarly grazing plus stall feeding were adopted by 13.63, 12.80, 11.42 and 11.11% goat owners from each type of flock size of very small, small, medium and large category of goat owners, respectively. The overall adoption was 12.50% among 200 selected goat owners and none of the goat owners followed stall feeding 0.00%. Very few goat owners adopted only grazing and stall feeding due to unavailability of sufficient fodder for stall feeding and grazing land is hardly available. The results of present study was similarly matched with Sandhu *et al.* (2017) [8] reported that, Large chunk of goat owners depends only on grazing 77.78% for feeding their animals followed by grazing-cum-stall feeding 14.44% and stall feeding (zero grazing) alone 7.78%.

### Feeding of green fodder

It was observed from table 1. That very small, small, medium and large with 40.90, 36.80, 34.28 and 33.33%, respectively adopted the feeding of green fodder. The overall adoption of practices feeding of green fodder was 36.5% as this is minimizing the goat production. This results similarly observed by Sandhu *et al.* (2017) [8] reported that majority of the goat owners fed their animals on common property resources 85.56% followed very few goat owners fed cultivated green fodder 13.33% and purchased fodder 1.11%.

### Feeding of dry fodder

It was observed from table 1. that, very small, small, medium and large were as 31.81%, 33.60%, 31.42% and 27.70%, respectively adopted the feeding of dry fodder. The overall adoption of practice of feeding dry fodder was 32.50%. Similar results were reported by Sasane *et al.* (2012) [11] resulted all of the respondents completely adopted the management practices like purpose of goat breeds, grazing plus stall feeding goat rearing methods, maize, jowar straw, bajra straw as forage crop.

### Additional ration for pregnant animal

Considering the various categories of the goat owners, the

higher adoption of this practice was found in very small size goat owners 54.54%, small size goat owners 37.60%, medium size goat owners 37.14% and 55.55% found in large size category of the goat owners. The present trend of the results are in agreement with the results reported by Tirupati and Gautam (2003) [13], majority of the respondents fed common salt 53.33%, and extra concentrates to lactating and pregnant goats 80.67%.

### Feeding of common salt

It was observed that, majority of goat owners were 63.63%, 36.80%, 34.28%, and 50.00% respectively of very small, small, medium, and large size of goat owners respectively. Overall adoption of this practice was only 40.50%. The present trend of the results is in agreement with the results reported by Tripathi and Gautam (2003) [13], majority of the respondents fed common salt 53.33%.

### Feeding of concentrate

It was observed that, the adoption of this practice was highest in large 44.44% followed by very small 40.90%, small 24.00% and medium 17.14% category of goat owners. The overall adoption rate feeding concentrate according to milk production was 26.50%. The goat owners were utilizing groundnut seed cake, cotton seed cake, brans, pulses chunni for preparation of home-made concentrate mixture and sugras in the form of compounded concentrate feeds. Singh *et al.* (2009) [10] indicated that, 65.50% of the respondents were feeding concentrate mixture only to the milch animals.

### Processing of concentrate before feeding (crushing, soaking etc.):

It was observed that, out of 200 goat owners from each type of flock size, this practice was adopted by very small, large, small, and medium category of goat owners with 40.90, 44.44, 31.20% and 28.57% respectively. The overall practice followed by goat owners were 33.00% among 200 selected goat owners. The present results are in conformity with the observation reported by Narmatha *et al.* (2013) [5] that, low adoption was in providing processing of concentrates before feeding (crushing soaking etc.), 3.57% feeding crushed prosopsis, tamarind seeds, neem leaves respectively.

### Use of mineral mixture or mineral bricks

It was observed that, none of goat owners had used mineral

mixture or mineral bricks. The constraints in non-adoption of this valuable recommendations reported by goat owners were lack of scientific knowledge and lack of technical guidance in adopting the practice of use of mineral mixture or mineral bricks. The present results are in conformity with the observation reported by Narmatha *et al.* (2013) <sup>[5]</sup> that, low adoption was in providing mineral blocks 3.57%.

### Feeding of concentrate mixture

It was observed that, out of 200 goat owners from each type of flock size were adopted separate concentrates feeding were 36.36%, 26.40%, 25.71%, and 33.33% by very small, small,

medium and large category of goat owners respectively. The overall adoption was 28.00% among 200 selected goat owners. Similarly, feeding of concentrates with roughages were adopted by 63.63, 73.60, 74.28 and 66.66% goat owners from each type of flock size of very small, small, medium and large category of goat owners, respectively. The overall adoption was 72.00% among 200 selected goat owners. The present results are in conformity with the observation reported by Sandhu *et al.* (2017) <sup>[8]</sup> that small fraction of goat farmers 33.33% offer separate grain concentrates and majority 74.07% of them residual grain occasionally.

**Table 2:** Housing management practices adopted by goat owners

Sr. No.	Housing practices	Very small (N= 22)	Small (N=125)	Medium (N=35)	Large (N=18)	Total (N=200)
1.	Maintain shed in clean condition	22 (100)	125 (100)	35 (100)	18 (100)	200 (100)
2.	Adequate light and ventilation	16 (72.72)	83 (66.40)	14 (40.00)	8 (44.44)	121 (60.50)
3.	Separate arrangement for kid and buck	10 (45.45)	71 (56.80)	22 (62.85)	12 (66.66)	115 (57.50)
4.	Providing clean drinking water	17 (77.27)	66 (52.80)	9 (25.71)	6 (33.33)	98 (49.00)

### Maintain shed in clean condition

It was observed that, all of the goat owners 100.00% adopted regular cleaning of shed 200 goat owners. The present results are in conformity with the observation reported by Jana *et al.* (2014) <sup>[3]</sup> observed that Most of the goat owners 90.00% reared their animal following semi-intensive system in Kaccha-houses 69.33% which constructed separately with locally available low-cost material and clean regularly.

### Adequate light and ventilation

It was observed that, Majority of the very small sized goat owners 72.72% followed by small 66.40%, large 44.44% and medium sized 40.00%, were adopting adequate light and ventilation. The overall adoption was 60.50% among 200 selected goat owners. Salahuddin *et al.* (2017) <sup>[7]</sup> revealed that 77.25% traditional farmer's house were attached with their own house without maintaining proper direction and ventilation system.

**Separate arrangement for buck and kid:** It was observed that,

Majority of the large sized goat owners 66.60% followed by medium 62.85%, small 56.80% and very small sized 45.45% were adopting Separate arrangement for buck and kid. The overall adoption was 57.5% among 200 selected goat owners. The present results were in conformity with the observation reported by Roy *et al.* (2002) <sup>[6]</sup>, Goats were housed in the sheds during night particularly in winter and rainy season. Various categories of goats were housed separately according to age, kid, buck sex and physiological status *viz.*, pregnant, dry and milch goats.

### Providing clean drinking water

It was observed that, the overall adoption was 49.00% among 200 selected goat owners. Majority of the very small sized goat owners 77.27% followed by small 52.80%, large 33.33% and medium 25.71% sized goat owners were adopted providing clean drinking water of goat. The present results are more or less comparable with Tripathi and Gautam (2003) <sup>[13]</sup>. Providing clean drinking water and proper cleaning of utensils were adopted by 80-100% families.

**Table 3:** Health care practices adopted by goat owners

Sr. No.	Health care practices	Very small (N=22)	Small (N=125)	Medium (N=35)	Large (N=18)	Total (N=200)
1.	Washing of goats	3 (13.63)	20 (16.00)	7 (20.00)	2 (11.11)	32 (16.00)
2.	Control of external parasite	13 (59.09)	91 (72.80)	19 (54.28)	7 (38.88)	130 (65.00)
3.	Vaccination	17 (77.27)	101 (80.80)	28 (80.00)	13 (72.22)	159 (79.50)
4.	Deworming	19 (86.36)	118 (94.40)	32 (91.42)	15 (83.33)	184 (92.00)

### Washing of goats

It was revealed that, as regards with washing of goats, majority of 20.00% medium size of goat owners followed by small 16.00%, very small 13.63% and large 11.11% adoption, respectively. The overall adoption was only 16.00% among 200 selected goat owners.

### Control of external parasite

It was revealed that, as regards with the control of external parasites small size group of goat owners 72.80% ranked first in adopting control of external parasite followed by 59.09% very small rank second, 54.28% medium rank third, and large 38.38% rank fourth. At an overall level 65.00% goat owners had controlled external parasite. The overall adoption was 57.50%

among 200 selected goat owners. Tanwar and Chand Khem (2011) <sup>[12]</sup> observed that most of the goat farmers with respect to health care the major constraints were lack of veterinary services in villages, high cost of treatment, ignorance about importance of deworming, lack of knowledge about common diseases and vaccination programme not carried out by any agency.

### Vaccination

It was revealed that, at an overall level 79.50% goat owners adopted vaccination against the diseases while 20.50% goat owners were not adopting the vaccination of the goats. The trend in adopting vaccination was more in small 80.80%, followed by medium 80.00%, very small 77.27% and large 72.22%. The present results are more or less comparable with



Sangameswaran and Sunita Prasad (2016) <sup>[9]</sup>, who reported majority of the farmers were not followed the practices of deworming and vaccination. Majority of the farmers were not availing any health care and preventive services for their goats. Jana *et al.* (2014) <sup>[3]</sup> who observed that most of the 57.33% goat farmers vaccinated goats against major diseases like goat fox, PPR and Foot and mouth diseases.

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### Deworming of goat

It was observed that, the overall adoption was 92.00% among 200 selected goat owners. Majority of the small sized goat owners 94.40% followed by medium 91.42%, very small 86.36%, and large 83.33% sized goat owners were adopted for deworming of goat. These results are less comparable with Mandavkar *et al.* (2015) <sup>[4]</sup> that highest increase in adoption was found in feeding of colostrum to kids 53.30%, deworming of goats 46.70% and use of mineral mixture and concentrate feed 36.70%.

### Conclusions

The present study indicated that, adoption of scientific feeding and management practices were average in Hatkanangale tehsil of Kolhapur district.

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