The Pharma Innovation Journal 2021; SP-10(6): 177-181

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2021; SP-10(6): 177-181

www.thepharmajournal.com
Received: 25-04-2021
Accepted: 26-05-2021

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Management practices of sheep and goat farmers in Karur district of Tamil Nadu

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Abstract
Small ruminants play an important role in the livelihood security of the rural resource poor people with the scope of income generating option and poverty alleviation. The productivity of sheep and goats under the traditional extensive production system is low mainly due to feed scarcity, lack of adoption of improved technologies and scientific management practices. This paper presents the management practices of goat and sheep farmers of Karur district of Tamil Nadu. A total of thirty farmers from three taluks of Karur district were interviewed with the pre-tested interview schedule to ascertain the general management and feeding practices followed. The results revealed that majority of the farmers were allowing their animals for grazing and not following balanced feeding practices. Interestingly, all the farmers surveyed were rearing region specific goat breed (Salem black) and sheep breed (Mecheri). Further, the results revealed that high proportion of farmers surveyed were not practicing prophylactic measures for minimizing morbidity and mortality of the animals due to infectious and contagious diseases. Besides, the farmers perceived that depletion of grazing area, less marketing price for the goat and sheep, morbidity and mortality of sheep and goats by diseases were the major constraints. This paper conclude that there is in need of creating awareness about the recommended feeding and health care management practices among the sheep and goat farmer to reap maximum benefit from the venture.

Keywords: sheep, goat, management, feeding, healthcare, constraints

Introduction
Small ruminants play an important role in the livelihood security of the rural resource poor people with the scope of income generating option for the rural poor and poverty alleviation. Further, sheep and goats are considered as an ideal animal that plays key role in food security and nutritional security to the growing global population. The productivity of sheep and goats under the prevailing traditional extensive production system is low [1] mainly because of feed scarcity and lack of adoption of improved technologies and management practices. Further, sheep and Goat rearing was a traditional activity and a way of life for most of the landless and small farmers, as a subsidiary or main enterprise in ensuring livelihood security. Most farmers practiced sheep and goat rearing for their subsistence and hence seldom adopt the scientific management practices due to lack of awareness and inaccessibility to the veterinary services.

Material and Methods
A field study was conducted to ascertain the managemental practices followed by goat and sheep farmers of Karur district of semi-arid region of Tamil Nadu. Karur region comprises of about seven taluks out of which Aravakurichi, Krishnarayapuram and Kadavur taluks were selected purposively for the study where the population of sheep and goat is high compared to other taluks. Thirty respondents from different socio economic backgrounds were selected and interviewed with pre-tested interview schedule to ascertain the demographic profile, feeding, breeding, healthcare and marketing practices followed by data analysis using simple statistical tools such as mean and percentage to discuss the findings.

Results and Discussion
The demographic characteristics of the goat rearing respondents were presented in Table 1. From the table it is inferred that about two-third of the respondents were middle aged and for three-fourth of the respondents primary occupation was goat rearing. The mean age of the respondent's was 50.47 years and range was 24 to 79 years. The average size of buck, doe and kids possessed by the respondents were 1.11, 6.74 and 4.2 respectively.

The range of flock size possessed by the respondents was 3 to 32. Nearly two-third of the respondents (63.16%) was having less than ten years of experience. Nearly fifty per cent of the respondents were landless (47.37%) followed by one-fourth of the respondents were medium and large farmers (26.32%). Only one goat keeper surveyed sold more than thirty goats as majority of the goat farmers maintain less number in their flocks in the range of 5 to 32. It is observed from the respondents that very high proportion of the respondents (94.74%) sold their goats to the middlemen allowing higher variation in the selling price of goat.

It is evident from the Table 2 that majority of the respondents rearing sheep (10 out of 11) were middle age with the mean age of 43.27 years. The age range of the respondents was 29 to 54 years. Over fifty per cent (54.55%) of the respondent livelihood occupation was agriculture. All the respondents surveyed were rearing Mecheri breed of sheep. The mean flock size of the respondents 43.63 and the range was 21 to 86. The mean ram, ewe and lamb possessed by the sheep farmers surveyed were one, 31 and 11 respectively. Nine out of eleven respondents had more than ten years of experience in sheep rearing. Five out of eleven respondents were medium and large farmers and rest of the respondents was equally distributed to the group of landless, marginal and small farmers. Five out of eleven respondents surveyed sold their sheep more than 30 numbers per year mainly due to the higher flock population with the range of 21 to 86 (mean 44 animals per flock). Nearly two-third of the respondents sold their sheep to the middle men earning more than Rs. 80,000 per year. The results revealed that rearing of sheep is better at income generation in the study area. Further, there is more scope for marketing sheep by forming cooperatives/self-help groups.

Table 1: Classification of the respondents (goat farmers) based on demographic profile

Categories	Goat farmers* (n = 19)
Age	
Young (<30)	1 (5.26)
Middle (30-56)	12 (63.16)
Old (>56)	06 (31.58)
Occupation	
Agriculture	05 (26.32)
Labourer	14 (73.68)
Total number of goats	
0-10	07 (36.84)
>10	11 (57.89)
Breeds possessed	
Kanni aadu + Kodi aadu	04 (21.05)
Non-Descriptive	03 (15.79)
Salem goat	12 (63.16)
Experience in goat rearing	
<10	12 (63.16)
>10	07 (36.84)
Land holding	
Landless	09 (47.37)
Marginal (Less than 2.5 acres)	04 (21.05)
Small (2.5- 5.0 acres)	01 (5.26)
Medium and Large (More than 5.0 acres)	05 (26.32)
Family size	
<5	10 (52.63)
5 and above	09 (47.37)
Number marketed	
<15	14 (73.68)
16-30	4 (21.05)
>30	1 (5.26)
Venue of marketing	
Shandy	1 (5.26)
Middle men	18 (94.74)
Income generated through sales of goat	
<40,000	9 (47.38)
40,000-80,000	8 (42.11)
>80,000	2 (10.53)

***** Figures in parenthesis represent values in percentage

Table 2: Classification of the respondents (Sheep farmers) based on demographic profile

Categories	Sheep* (n = 11)
Age	
Young (<30)	1 (9.09)
Middle (30-56)	10 (90.91)
Old (>56)	0 (0)
Occupation	
Agriculture	6 (54.55)

Labourer	5 (45.45)
Total number of goats	
20-40	7 (63.64)
40-60	2 (18.18)
>60	2 (18.18)
Breeds possessed	
Mecheri	11 (100)
Experience in goat rearing	
<10	2 (18.18)
>10	9 (81.82)
Land holding	
Landless	2 (18.18)
Marginal (Less than 2.5 acres)	2 (18.18)
Small (2.5- 5.0 acres)	2 (18.18)
Medium and Large (More than 5.0 acres)	5 (45.45)
Number marketed	
<15	3 (27.27)
16-30	3 (27.27)
>30	5 (45.45)
Venue of marketing	
Shandy	4 (36.36)
Middle men	7 (63.64)
Income generated through sales of goat	
<40,000	0 (0)
40,000-80,000	4 (36.36)
>80,000	7 (63.64)

*****Figures in parenthesis represent values in percentage

Feeding management practices

In the study area, community area and hillocks were the common grazing areas used by the sheep and goat farmers. Crop residues of groundnut and moth bean (local name: naripayiru) were the source of dry fodder to the sheep and goats. It was observed that the sheep and goat were allowed for grazing for the average of 7 hours which is in line to the earlier findings [2, 3]. Around thirty per cent of the goat farmers surveyed were providing green fodder especially tree fodders like agathi, subabul, coconut leaves, neem leaves etc., along with legumes fodder hedge lucerne (Table 3). In addition, a good proportion of the respondents (57.89%) were providing dry fodder and around two-third of the respondents (68.42%) and nearly three-fourth of the respondents (73.68%) was providing concentrate to the buck and doe respectively. But only forty per cent of the respondents were supplementing concentrate to the kids. Concentrate supplements mostly are homemade comprising of locally available grains (80%) such as maize, sorghum, cumbu and broken rice and oilcakes (20%) such as groundnut cake and cottonseed cake. Similar practices were practiced by the tribal goat farmers in Sirohi district of southern Rajasthan [4], Kanni Adu goat farmers of southern Tamil Nadu [5], Surti goat farmers of Gujarat [6] and goat farmers in Attur region of Tamil Nadu [7]. It is observed that kids were fed with grains for three to four months for fattening purpose to get high market price during sales. Only ten per cent (10.53%) of the respondents were supplementing mineral mixture. A good proportion of the respondents (84.21%) were deworming their goats, but a very high proportion of the respondents (89.47%) were not deticking their goats.

Classification of the respondents based on the adoption of recommended feeding and health management practices followed by sheep farmers were presented in Table 3. The data in the table inferred that no surveyed sheep farmers were providing green fodders. The probable reason might be that the respondents perceived that allowing the animals for grazing might compensate the green fodder requirement as sheep are close grazers compared to browsing behavior of goats. A high proportion of the respondents (90.91%) were providing dry fodder and supplementing locally available ingredients to their animals. Only two out of eleven sheep farmers were supplementing mineral mixture. Furthermore, respondents were rearing sheep mostly in extensive and semi intensive system of rearing. Nine respondents had dewormed their sheep and only one respondent had deticking of the sheep. Over fifty percent of the respondents didn't vaccinate their sheep and goats against contagious or infectious diseases. Similar findings were observed in the study in Jaipur district of Rajasthan [8], Navsari district of Gujarat [9] and Bundelkhand region [10].

Table 3: Classification of the respondents based on the adoption of recommended feeding and health management practices followed by goat and sheep farmers

Practices	Goat farmers (n = 19) *			Sheep farmers (n = 11) *		
	Buck	Doe	Kids	Ram	Ewe	Lamb
Provision of green fodder	6 (31.58)	6 (31.58)	6 (31.58)	0	0	0
Provision of dry fodder	11 (57.89)	11 (57.89)	11 (57.89)	10 (90.91)	10 (90.91)	10 (90.91)
Supplementation of locally available concentrate	13 (68.42)	14 (73.68)	08 (42.11)	10 (90.91)	10 (90.91)	6 (54.55)
Supplementation of mineral mixture	2 (10.53)	2 (10.53)	2 (10.53)	2 (18.18)	2 (18.18)	3 (27.27)
Deworming	16 (84.21)	16 (84.21)	16 (84.21)	9 (81.82)	9 (81.82)	9 (81.82)
Deticking	2 (10.53)	2 (10.53)	2 (10.53)	1 (9.09)	1 (9.09)	1 (9.09)

*****Figures in parenthesis represent values in percentage

A high proportion of the respondents (94.74%) were practicing culling/changing their buck for every 2-3 years (Table 4). All the sheep (n = 11) and goat (n = 19) respondents surveyed were breeding their sheep and goats by natural service by uncontrolled mating in their flock. It is also observed that goat farmers with small flock size were not maintaining buck for breeding purpose whereas all sheep farmers were rearing ram in their flocks for breeding purpose. It was observed that selection of the breeding buck and ram was based on high growth rate, physical well built with good vigor. A good proportion of the respondents (89.47%) were rearing the goats in semi-intensive rearing of goats in semi-pucca house. They used bamboo slatted house as enclosures during summer and rainy seasons. Similar practices were adopted by farmers for goats in Tripura [11], Gujarat [9] and Karnataka [12]. All the respondents were allowing their goats for grazing. The most common roofing materials were thatched or aluminum sheets. Sheep farmers were mostly rearing by extensive system in kutcha house to stay in the agricultural field itself by arranging small enclosure called "Patti" [13] during night time and changing the enclosures throughout the fields to provide manure to the agriculture fields on cost basis.

Table 4: Classification of the respondents based on the breeding and housing management practices followed by goat and sheep farmers

General management practices	Goat farmers* (n = 19)	Sheep farmers* (n = 11)
Culling practiced	18 (94.74)	9 (81.82)
Breeding method by		
a) Natural Service	19 (100)	11 (100)
b) Artificial Inseminati	0 (0)	0 (0)
Type of rearing		
a) Extensive	2 (10.52)	6 (54.55)
b) Semi-intensive	17 (89.47)	5 (45.45)
Cleaning of shed		
a) Yes	17 (89.47)	4 (36.36)
b) No	2 (10.52)	7 (63.64)
Housing		
a) Semi-pucca	17 (89.47)	4 (36.36)
b) Kutcha	02 (10.52)	7 (63.64)
Provision of drinking water	19 (100)	11 (100)

*****Figures in parenthesis represent values in percentage

The distribution of the respondents based on mortality of sheep and goats was presented in Table 5. It is evident from the table that nearly two-third of the respondents didn't lose any goats. But, one respondent lost more than five kids mainly due to problems of low birth weight and kidding during rainy season. The probable reason might be that doe and ewe were with limited body reserves at birth due to non-supplementation of balanced feed and mineral supplementation. It is evident from the table that four out of eleven respondents has lost their lamb due to enteritis and mortality of the adult was due to blue tongue. The reason might be that the surveyed farmers were unaware about feeding and health care and management practices and inaccessibility to veterinary services.

Table 5: Distribution of the respondents based on mortality of sheep and goat

Number died	Goat*			Sheep*		
	Buck	Doe	Kid	Ram	Ewe	Lambs
0	12 (63.16)	14 (73.68)	13 (68.42)	11(100)	6 (54.55)	7 (63.64)
1-5	1 (5.26)	5 (26.32)	5 (26.32)	0 (0)	5 (45.45)	4 (36.36)
>5	0 (0)	0 (0)	1 (5.26)	0	0	0

*****Figures in parenthesis represent values in percentage

Constraints

The most serious constraints perceived by the respondents were depletion of grazing area (n = 17), marketing and sale of goat and sheep (n = 17), morbidity and mortality of animals by diseases (n = 13) and predator attack mainly by dogs (n = 9).

Conclusions

The analysis of the study concluded that sheep and goat farmers in Karur division of Tamil Nadu were following traditional feeding and housing practices. Rearing of region specific breeds of goat and sheep by the farmers were the specialties. Prophylactic measures in kid management, disinfection of the housing area and non-adoption of vaccination were neglected health management practices by the sheep and farmers. Depletion of grazing area, less marketing price for the goat and sheep, morbidity and mortality of sheep and goats by diseases were the major constraints faced by sheep and goat farmers of the study area. This study suggest that training by the stakeholders of the study area should be based on the thrust areas such as kid management, prophylactic measures in control and prevention of disease and marketing the produce by forming cooperatives or self-help groups.

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