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Goat Farming Systems in Eravur and Vantharumoolai Veternery Ranges in Batticaloa District: Feeding and Management Strategies

Fonseka WSR, Mahusoon MM, Narmhikaa K, Inthujaa S*
Department of Animal Science, Faculty of Agriculture, Eastern University, Sri Lanka

Original Research Article

***Corresponding author**
Inthujaa S

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Abstract: A survey was conducted to investigate the features of goat farming in Eravur and Vantharumoolai veterinary ranges in Batticaloa district, Sri Lanka. A pre-tested structured questionnaire was designed and 200 goat farmers were randomly interviewed. The data were coded, entered in Microsoft Excel and transferred into SPSS for analysis. Farmers exhibited limited knowledge on goat farming and improved management. They reared goats mainly for commercial purpose. Heard size was generally 11-20 and majority of the farmers kept indigenous and cross breeds of goats. Farmers reared goats mostly for meat purpose in both veterinary ranges and 5% of the farmers from Vanthrumoolai range reared goats for milk purpose. All the framers in both range used proper housing systems foe goats. Semi-intensive system of goat rearing was practiced by 70% of the farmers in Eravur range and 42.5% of the framers in Vantharumoolai range. Natural breeding was the prominent method of breeding in both ranges (100%). In Eravur and Vantharumoolai ranges goats were allowed to graze for more than 8 hours sper day and fodder tree, fodder grass, concentrate and crop residues were used as feed sources in both ranges. In Eravur and Vantharumoolai ranges 92.5% and 97.5% of the meat was sold to middle man respectively. Veterinary service was good and adequate for both ranges and there are some constrains in both ranges.

Keywords: Constraints, Eravur, feeding sources, herd size, housing, marketing, system of rearing, Vantharumoolai.

INTRODUCTION

Small ruminents are very productive and efficient source of income to the rural people. Dry zones of many Asian countries contain large proportion of small ruminants where these small ruminants are reared for meat, milk, manure and skin [1]. Goats are well adapted to different environmental conditions and variety of feed sources so that they can be found all over the world. High adaptability, high productivity, small size and non-competitiveness with human food make them advantageous to man. Goat is a “poor man’s cow” [2] and which plays a vital role in the food security of the rural people. Goats provide income through milk and meat. The input for the goat farming is very low with minimum management practices. Climate condition of Sri Lanka best fits to goat farming and it has a huge potential to grow country’s economy. In Sri Lanka 75% of goats is reared in dry and intermediate zones of the country [3]. Dry zone of Sri Lanka provides an optimum climatic condition for goat farming. However, due to lack of interest in goat framing has led to drop in the goat population. Batticaloa district includes 8.5% of the total goat population of Sri Lanka in 2014 [4]. Batticaloa district has the entire potential to raise goat to get maximum benefits form goat farming. Therefore a study was conducted to explore the features of goat farming in Eravur and Vantharumoolai veterinary range which is located in Batticaloa district, Eastern Province of Sri Lanka.

MATERIALS AND METHODS

A survey of small scale goat farmers was conducted in Eravur and Vantharumoolai veterinary ranges which are located in the Batticaloa district. In the survey 100 goat farmers were randomly selected in each veterinary range (Eravur and Vantharumoolai). The final samples were comprised with two veterinary ranges and 200 respondents. Structured questionnaire was designed for the study which contained breeding information, housing management and feeding practices. The details about the goat farmers were collected from veterinary offices at each veterinary range. Before the commencement of the data collection, the questionnaire was pre-tested to assess the suitability of questionnaire. Primary data were collected from goat farmers by face to face interview with structured questionnaires. Secondary data were collected from Department of Animal production and health, Divisional Secretariat of each area and Department of

census and statistics. All the data were gathered from filled questionnaires, checked, coded, entered in Microsoft excel spread sheet and transferred to SPSS (Static Package for Social Science) for analysis.

RESULTS AND DISCUSSIONS

Herd size

Table-1: Herd size of Goats

Veterinary range	Herd size (%)			
	<10	11-20	21-30	>30
Eravur	15	47.5	32.5	5
Vantharumoolai	20	52.5	25	2.5

The results revealed majority of the farmers had the herd size in the range of 11-20. Similar results were observed in Eastern region by [5]. Primarily farmers raise goats for meat purpose in both veterinary ranges. Furthermore, the availability of extensive browsing lands, fallow paddy lands and the suitability of the climate favour the keeping of herd size within the range of 11 – 20 with low level of risk. These resources may be inadequate to maintain a large number of herd sizes with high productivity. Therefore, most of the goat farmers maintained medium size herd. This is also supported by [6]. The survey revealed that herd size higher than 30 was low in both veterinary ranges due to the availability of limited feed resources, less space available for sheltering the goats and difficulties of managing goats with limited labour availability.

Distribution of Goat Breeds

It was found that majority in Vantharumoolai veterinary range and significant number of farmers in Eravur veterinary range reared indigenous goat breeds.

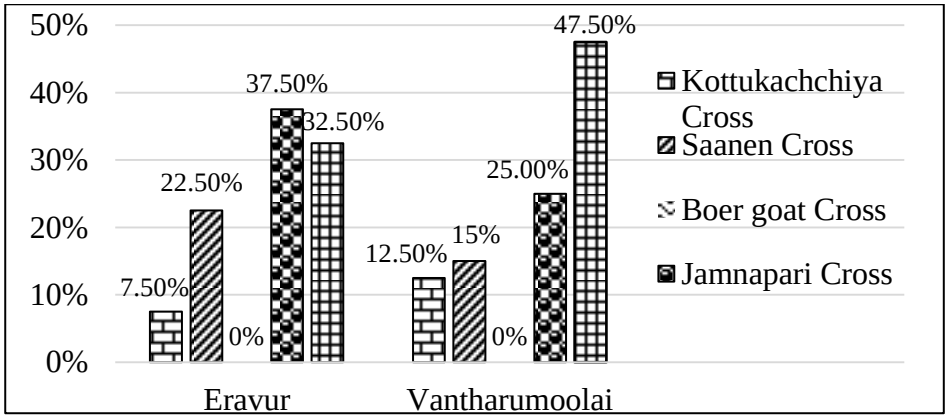

Fig-1: Distribution of goat breeds

In both veterinary ranges both indigenous and cross breeds of improved breeds were reared. It was clearly found that Jamnapari cross breed was prominent in Eravur veterinary range due to higher productivity of the breed. None of the Boer cross breeds were found in entire study area even though the boer breeds have high productivity. Further, crosses of Kottukachchiya, Saanen, Boer goat and Jamnapari were available in Batticaloa district [7]. There were not any pure improved breeds in both veterinary ranges due to unavailability of proper breeding programmes.

Purpose of rearing Housing system and Method of goat breeding

Natural breeding method was prominent in both veterinary ranges (Table 2). Artificial insemination was not popular for goats as cow among small holders of farmers. The reason for using natural breeding was it is a simple method without cost and management. Goats were allowed to browse independently without the control of farmers and the farmers did not know the mating behavior of the goats. This is also supported by [8]. This condition had led to the danger of inbreeding and farmers had lack of awareness about inbreeding.

None of the farmers from Eravur veterinary range reared goats for milk purpose even though the goat milk has a higher nutritive value. Goat meat industry is very popular in Eravur rather than goat milk as the demand is high for goat meat. On the other hand, in Vantharumoolai veterinary range also meat production was popular than milk production.

Table-2: Purpose of rearing, Housing system and Method of goat breeding

Veterinary range	Breeding method	
	Natural	Artificial insemination
Eravur	100%	0%
Vantharumoolai	100%	0%
	Purpose of rearing	
	Meat	Milk	Manure
Eravur	100%	0%	0%
Vantharumoolai	95%	5%	0%
	Housing system	
	Slatted house	Floor house
Eravur	57.5%	42.5%
Vantharumoolai	45%	55%

However, only 5% of farmers reared goats for milk and they sold the milk to surrounding houses. There were no farmers who reared goat for manure purpose. It may be due to low value of manure compare to cattle manure. Small ruminants are reared due to certain reasons like low capital, low cost for management and good source of revenue [9].

It was found that housing pattern of goat consisted slatted and floor houses depending on the size of the herd and economic status of farmers .The Houses were half walled or full walled or generally mud flooring was provided. The Table 2 shows the percentage of goat farmers using different types of housing in Eravur and Vantharumoolai veterinary ranges. It is clear the farmers from both veterinary ranges understood the importance of housing in goat farming to protect the animals and facilitate management practices.

Adopted Management System

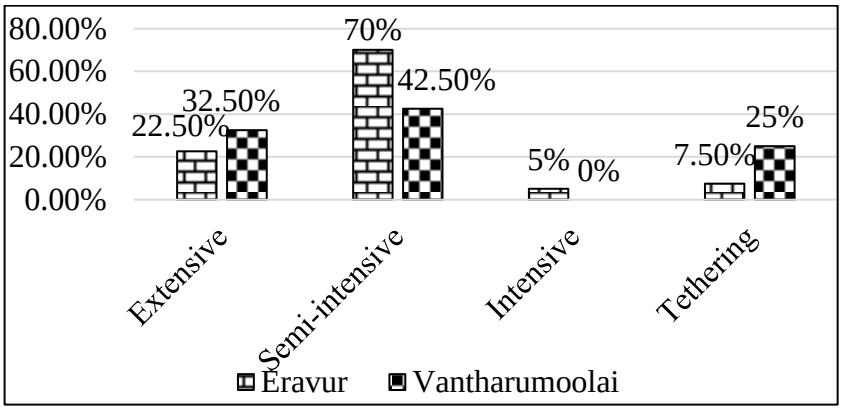

Fig-2: Adopted management system in goat farming

Semi intensive system management is prominent in both veterinary ranges. Semi intensive management system was prominent in Batticaloa district [7]. Farmers allowed goats to browse for certain period of time in a day and they also provided concentrates and roughages at the shed. In Eravur and Vantharumoolai veterinary range 22.5% and 32.5% of farmers practiced extensive management system respectively. Vantharumoolai has adequate browsing land compared to Eravur. However none of the farmers from Vantharumoolai practiced intensive farming and 5% of framers in Eravur practiced intensive farming due to the insufficient unavailability of browsing lands for goats. Eravur is densely-populated are with lots of constructions and if animals allows for free grazing could create unpleasantness in living surroundings. Further the survey revealed that, 7.5% farmers practiced tethering in Eravur while 25% in Vantharumoolai. These farmers tethered the goats to prevent the damages caused by the goats to the crops. Tethering is done to protect the crops from goats throughout the cropping season and avoid the conflict between farmers [10].

Feeding Practice and Feed Sources

Table-3: Browsing duration and feed sources

Veterinary range	Browsing duration (Hours)			
	2-4	4-6	6-8	>8
Eravur	0%	0%	20%	80%
Vantharumoolai	0%	2.5%	35%	62.5%
Veterinary range	Feed source			
	Fodder tree	Fodder grass	Concentrate	Crop residues
Eravur	100%	35%	22.5%	57.5%
Vantharumoolai	100%	62.5%	17.5%	17.5%

Majority of the farmers from both ranges allowed their goats for browsing for more than 8 hours per day (Table: 3).The proportions of respondent households who supplemented their goats with crop residue were 57.5% and 17.5% for Eravur and Vantharumoolai veternery ranges respectively. The proportions of sampled households using fodder grasses were 35% and 62.5% in Eravur and Vantharumoola respectively. Fodder grasses were harvested from road sides, irrigation areas, river bank and other public land for supplementing feed as part of the strategy to cope with feed shortages. All the goat farmers in study area used fodder tree as a feed source. It may due to enough availability of fodder trees. Availability and cheapness of the grasses made the farmers to use them as a major feed source for goats [11]. Tropical natural grasses are usually low quality and subjected to a quick drop in nutritional quality with maturity although they are adequately available [12]. Farmers identified the fodder trees found in communal areas, forest and marginal land which are natural feed resource for goat. It was found that higher amount of concentrates (rice bran and husks) used by Eravur goat farmers due to higher number of rice mills in Eravur area.

Marketing

Table-4: Marketing of goat meat

Veterinary range	Marketing of Goat		
	Slaughter house	Middle man	Home consumption
Eravur	7.5%	92.5%	0%
Vantharumoolai	2.5%	97.5%	0%

Sale of goats in Eravur and Vantharumoolai veterinary ranges were shown in Table 4. Most of the farmers sold goats for middle man. It may be due to long distance for market, inadequate transport and communication facilities. Few farmers directly sold the goats to the slaughter house. Goat farmers in the study area did not consume goat meat at home. It may due to lack of interest among farmers to consuming their own goat's meet. Farmers get good income during the festival seasons and during that time sales were high compare to normal seasons. Similar results also obtained by Kusina JF [10].

Veterinary Service

Veterinary service in Eravur and Vantharumoolai ranges were shown in Table 5. Eravur and Vantharumoolai vetirinery ranges received good veterinary service.

Table-5: Veterinary service

Veterinary range	Percentage of veterinary service receiving		
	Good	Moderate	Poor
Eravur	80%	20%	0%
Vantharumoolai	72.5%	27.5%	0%

Constraints

Constraints of goat farming in Eravur and Vantharumoolai veterinary ranges were shown in Table 6. Lack of feed was one of the main problems because of the destruction of natural grazing lands due to the construction of buildings. Occurrences of diseases to the goats were another major problem among farmers. Poor and inadequate knowledge and lack of awareness among farmers was a reason which leads to several problems in goat farming. This is supported by [13]. In Eravur veterinary range lack of land availability was a problem because most of the bare lands and grazing areas were converted into building to meet the requirements of the growing population.

Table-6: Constraints in goat farming

Constraints	Veterinary range	
	Eravur	Vantharumoolai
Diseases	22.5%	30.0%
Lack of feed	37.5%	17.5%
Lack of land	35.0%	12.5%
Lack of labour	2.5%	5.0%
Poor fertility	15.0%	15%
Predators	0.0%	7.5%
Damage to crops	2.5%	32.5%
Poor infrastructure	0.0%	12.5%

CONCLUSION

Goat farming is a major livelihood activity to the farmers in Eravur and Vantharumoolai veterinary ranges. Most of the farmers used semi-intensive system of rearing with proper housing facilities. Most of the farmers used the local feed sources and some farmers used commercial feeds as a supplementary feed. Farmers in these veterinary ranges only practiced natural service and there were no any breeding programmes to the goats. Marketing was done successfully to the middle men and to the slaughter house. Veterinary services were sufficient and good in these veterinary ranges and some constrains were recorded due to some disease incidence, lack of land and feed sources and inadequate knowledge and awareness.

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