

Indigenous Knowledge in Sheep and Goat Farming Systems in Tamil Nadu, India[#]

A. Manivannan^{1*}, P. Mathialagan¹, N. Narmatha² and B. Mohan³

¹Department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), Chennai – 600007, Tamil Nadu, India; mani7priya@rediffmail.com

²Department of Veterinary and AH Extension, VCRI, Namakkal – 637002, Tamil Nadu, India

³Department of Animal Nutrition, VCRI, Orathanadu, Thanjavur – 614625, Tamil Nadu, India

The present study was conducted in 2008 to document the indigenous knowledge prevalent in sheep and goat farming systems in Tamil Nadu, India. Fifty sheep farmers in Tirunelveli district and fifty goat farmers in Erode district were selected by proportionate random sampling method and the data were collected through an interview schedule and analysed and ranked for getting inferences. The results revealed that in sheep farming system, the traditional practices such as lamb hut (100%), washing the sheep in ponds for tick removal (100%), selecting good breeding rams (96%), sheep penning (94%), and twinning (76%) were known to sheep farmers. In goat farming system, rearing bucks for religious purpose (100%), kid house (100%), tethering (96%), and locally made shelter (84%) were known to goat farmers. A close look at the indigenous practices in sheep and goat farming systems indicates the area-specific nature of these practices/beliefs.

Keywords: Goat, Penning, Religious Purpose, Sheep, Tethering

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1. Introduction

The domestication of animals started during Neolithic period along with the cultivation of cereals. First goats and sheep, second cattle and pigs, and finally draft animals such as horses and asses were domesticated¹. Thus goats and sheep were the earliest domesticated animals

and rearing of these animals has been centered around food, religion, culture and economy from the ancient times. India's ruminant biodiversity is enriched with 42 breeds of sheep and 26 breeds of goats (ICAR-NBAGR-2016)². Out of this, Tamil Nadu has ten sheep breeds viz., *Coimbatore Sheep*, *Kilakarsal*, *Madras Red*,

*Author for correspondence

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Mecheri, Nilgiri, Ramnad White, Trichy Black, Vembur, KatchaiKatty-Black, and Chevaadu and two goat breeds viz., *Kanni Adu* and *Kodi Adu*. India also ranks second in goat and third in sheep population³. With such impressive genetic resources availability, sheep rearing continues to be a backward profession, primarily in the hands of poor, landless or smallholder and marginal farmers who own either an uneconomical holding or no land at all. Only limited efforts have been made for improving goats¹.

There were no major technological interventions which had an impact in sheep and goat rearing, similar to crossbreeding and artificial insemination in dairy cattle. Sheep rearing is nomadic in nature, whereas goat rearing is specific to certain areas that shows that sheep and goat farming are still traditionally oriented and the traditional management systems still hold the key in small ruminant production. Burman and Singh⁴ observed that a large body of Indigenous Technical Knowledge (ITK) still exists in the farming communities, which help them in practicing successful farming. Even though considerable literature pertaining to treatment of animals using indigenous medicines/herbals are available, references on indigenous husbandry practices in sheep and goat farming are lacking. Under this

background, the present study was conducted to document the indigenous knowledge prevalent in sheep and goat farming systems.

2. Methodology

The study was conducted in 2008 based on the 17th Livestock Census of Tamil Nadu State, India⁵, top three districts were identified for sheep and goat populations. One district was selected for each species based on population and predominant livestock-based farming system followed in the area. Accordingly, Tirunelveli and Erode districts were selected and one block identified in each district for sheep and goat species viz., Alangulam in Tirunelveli district and Gobichettipalayam in Erode district. Three villages in each identified blocks were selected (Table 1).

Thus a sample of 50 sheep farmers and 50 goat farmers from selected villages each in Tirunelveli and Erode districts were selected through proportionate random sampling method. A questionnaire was developed for the study based on the available literature and discussion with subject matter specialists. The data were collected through an interview schedule and tabulated for getting inferences.

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Table 1. Details of sampling for sheep and goat rearing in Tamil Nadu, India

Category	District	Block	Villages Selected	No. of farmers selected
Sheep farming	Tirunelveli	Alangulam	Kidarakulam	18
			Mayamankurichi	22
			Veeranam	10
			Total	50
Goat farming	Erode	Gobichettipalaym	Pulavakkalipalayam	24
			Kullampalayam	16
			P. Vellalalayam	10
			Total	50

3. Results and Discussion

3.1 Knowledge Level of Respondents on Traditional Sheep Farming Practices

The indigenous knowledge level of farmers in sheep farming system were ranked as presented in Table 2.

Lamb Hut (Rank-I): All the respondents (100%) had knowledge on managing a lamb hut (known as *Kuttikoodu* in vernacular language). A lamb hut is specially made (using locally available material viz., dried leaves/stems of trees/plants) to give shelter to newborn ones, until they are ready to go outside along with their mother for grazing. The interesting feature of the huts is that there are provisions in the inner side of the hut in which the tender fodder leaves are hanged for the young ones to feed.

Washing the animals in ponds (Rank-I): Similar to the preceding one, all the respondents

(100%) were aware about washing the sheep in ponds. This is meant for getting rid of external parasites like, lice, ticks etc., from the body of sheep instead of applying any medication. The shepherds rub and wash the external coat in the pond manually, so that external parasites on the skin gets dropped from the body. Even though the sheep farmers practice such methods, the effectiveness of these methods needs to be clinically examined.

Selection of breeding rams (Rank-II): About 96% respondents were aware about how to select the adult rams for breeding purposes which they had learnt from their elders. Within their flock, the rams which are found to be healthy, strong and without any abnormalities are selected for breeding purpose and the weaker ones are sold for meat purpose. The selected rams are retained till their death in their flock itself. Kumaravelu *et al.*⁶ also reported about the indigenous way of selecting breeding rams in Tamil Nadu.

Table 2. Knowledge level of respondents on traditional sheep farming practices/ beliefs (n=50*)

Traditional Practices/Beliefs	Sheep farming system		
	No. of farmers	Percentage	Rank
Lamb Hut	50	100	I
Washing the animals in pond once a month to remove ticks	50	100	I
Selection of breeding rams	48	96	II
Sheep penning-using traditional ways	47	94	III
Belief on twinning	38	76	IV
Belief on forecasting rain through observing the behaviour	36	72	V
Management of mis-mothering	26	52	VI
Rearing rams for religious purpose	22	44	VII
Using traditional knowledge to treat wounds/fever/minor ailments	20	40	VIII
Off-season feeding management	16	32	IX

*Multiple responses

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It is a very old practice of sheep farming wherein the sheep are sheltered during night in agricultural fields for improving the soil fertility and for weed control in the field, which is called as “kidai” in vernacular language. It is of mutual benefit practice for the sheep farmer as well the owner of the land

in vernacular language. It is of mutual benefit practice for the sheep farmer as well the owner of the land. The land owner gets the benefit of enriching the soil fertility and the sheep farmer gets revenue for the purpose. “*Sheep manure is usable immediately whereas cattle manure is usable only after a year for agricultural purpose*” is an old saying in Tamil Nadu which justifies the farmers practice. Rao *et al.*⁷ and Immanuel *et al.*⁸ also reported in their studies about the practice of sheep penning in agricultural lands in Tamil Nadu and Andhra Pradesh.

Beliefs on Twinning (Rank-IV): Three-fourths of the respondents (76%) had prior knowledge about twinning in sheep. Normally ewes give birth to single offspring most of the time, but on rare occasions, ewes deliver twins also. As per the local saying, “*Sheep delivering twins do not bring prosperity to the flock*”, hence such sheep are to be disposed of. However, the animal production scientists are of the opinion that it is advantageous to keep such sheep in the flock since it adds economic benefit to the farmer.

Beliefs on Forecasting rains (Rank-V): The respondent sheep farmers (72%) believed that when clouds are spotted in the sky, most of the time the sheep used to move away from the grazing area, by which the shepherd will understand that rains may come shortly and gather sheep at a safe area.

Management of mis-mothering (Rank-VI): Sometimes the ewes which delivered a lamb abandons it. Under this situation, the sheep farmers try to keep the young ones near the

mother and try to make the ewe to suckle the newborn.

Rearing Rams for religious purpose (Rank-VII): Ram lambs are identified in the early age and are offered to Local Deity for fulfillment of wishes in the shepherd’s socio-economic life. Usually these rams are handled gently and the belief is that rough handling of such rams will invite the wrath of the Local Deity. Such animals must be free from external injuries also. Vignesh⁹ also documented about the rearing of sheep and goats for religious purposes in Karnataka state, India.

Treatment of wounds/fever/minor ailments (Rank-VIII): For any cut wound, the farmers apply turmeric (*Curcuma longa*) powder and neem (*Azadirachta indica*) oil for healing of wounds. On the first instance, they do not seek treatment from a veterinary doctor, but only visit the veterinary dispensary for treatment of animals, after prolonged illness. Reddy *et al.*¹⁰ reported about the traditional knowledge based veterinary practices employing fresh herbal remedies helped to minimize the loss due to bluetongue disease in sheep.

Off-season feeding management (Rank-IX): Earlier most sheep farmers used the traditional practice of preserving dried seeds / pods from some trees for feeding the animals during scarcity.

Maheswaran¹¹ also reported about the indigenous practices of sheep penning and manuring of own lands, lamb pens, and management of mis-mothering by allowing the new-born lamb with its mother for 2 to 3 days.

Table 3. Knowledge level of respondents on traditional goat farming practices in Tamil Nadu, India (n = 50)*

Traditional Practices/Beliefs	Goat farming systems		
	No. of farmers	Percentage	Rank
Rearing bucks for religious purpose	50	100	I
Kid house	50	100	I
Goat tethering-using traditional ways	48	96	II
Using locally made shelter	42	84	III
Forecasting rain through observing the behaviour	42	84	III
Management of mis-mothering	32	64	IV
Using traditional knowledge to treat wounds	32	64	IV
Off season feeding management	31	62	V

* multiple responses

3.2 Knowledge level of respondents on traditional goat farming practices / beliefs

The respondents in goat farming system also had similar knowledge level as in the case of sheep farming system (Table 3).

In sharp contrast to sheep farming system, all the respondents (100%) in the goat farming system interviewed told that they offered one buck to the Local Deity regularly every year as a token of thanks giving.

Rearing bucks for religious purpose (Rank-I): In sharp contrast to sheep farming system, all the respondents (100%) in the goat farming system interviewed told that they offered one buck to the Local Deity regularly every year as a token of thanks giving. Moreover, the black coloured goats are preferred for such offerings. The variation among districts may be due to the availability of more rain-fed area in Tirunelveli district and more cultivable land in Erode district where agricultural production is high; hence the farmers regularly offer goats to their Local Deity.

Kid House (Rank-I): On the similar lines of sheep farming system, small bamboo shelter is used for protecting newborn kids until they grow and can go out for grazing with their mothers.

Goat Tethering (Rank-II): The goats are tied to a bush/stone/pillar with long ropes; so that the goats can graze a large circumference in a particular place and simultaneously the farmers are also look after their farming activities within a visible distance. The place of tying is changed after some time each day. Ikeda¹² also reported that about the practice of tethering in Philippines.

Using locally made shelter (Rank-III): Farmers have their own way of providing shelter to adult goats and kids by using locally available materials viz., thatched roof and also mud house walls, and tree shades for sheltering the animals.

Forecasting rains (Rank-III), Management of mis-mothering (Rank-IV), Treatment of wounds (Rank-IV), Off-season feeding management (Rank-V): Similar to sheep farming system, these are prevalent in goat farming system also with varying degrees. Soundararajan *et al.*¹³ also reported about the use of indigenous herbal methods for treating minor ailments in goats.

A close look at the indigenous practices/beliefs in sheep and goat farming systems indicates the area specific nature of these practices. For example, the rearing of male animal for religious purpose has been ranked first in goat farming system whereas in sheep farming system it secured seventh rank only. Similar variations in ranking have been observed in forecasting rain,

traditional knowledge to treat wounds and off-season feeding management.

4. Conclusion

Indigenous knowledge systems are time immemorial and are passed from generation to generation by word of mouth, and learnings from elderly farmers in the society. Indigenous knowledge systems have the potential of “*the more you explore, the more information you get*”. Hence more exploration by the extension scientists associated with livestock development on indigenous animal husbandry practices and beliefs is certainly warranted, as observed in the study.

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