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HEALTH MANAGEMENT PRACTICES OF GOATS FOLLOWED BY TRIBAL FARMERS IN RAJASTHAN

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ABSTRACT
The aim of present study was to assess the health management practice of goats followed by tribal farmers in Rajasthan. A total of 120 tribal goat farmers were selected from 12 villages from 6 blocks in 3 tribal dominated districts *viz*., Banswara, Dungarpur and Udaipur. Ten farmers from each village were selected purposively based on the number of goats. The selected goat farmers were grouped into three categories based on flock size as small (<25 goats, N= 60), medium (26-50 goats, N = 36) and large (>50 goats, N = 24). The floor space and other housing practices at the farmer's flocks were recorded on-farm. The average flock size as small, medium and large categories of farmer was 22.63 ±0.210, 33.72 ±1.05 and 58.54 ±1.28 respectively. The overall proportion of milking goats, dry goats, goat lings, kids and bucks were 12.52 ±0.31 (32.63%), 8.62 ±0.30 (22.50%), 6.64 ±0.27 (17.33%), 9.52 ±0.29 (24.85%) and 0.79 ±0.06 respectively. The major diseases reported by large number of respondents were various infestations (45 %), followed by FMD (25.83 %), digestive disorder (20 %) and viral disease like pneumonia (9.17 %). This could be due to the fact that the majority of farmers might have not followed good hygiene practices. Majority of farmers (59.67%) practiced disinfection of goat shed by application of lime on the walls or by plastering a mixture of mud and cow dung twice in a year. The remaining 40.83% farmers did not do any disinfection. It was found that none of the tribal respondents were burying the dead animals while 22.50% farmers disposed off in open area away from village and 77.50 % respondent give the dead body to the carcass collector. It was concluded that health management practices were mostly traditional without much regard to scientific recommendations. However, these management practices in general were better in case of small farmers as compared to medium and large farmers.

KEY WORDS: Tribal, Goat farming, health management, and management practices.

INTRODUCTION

Goats are the world's oldest and among the first ruminants to be domesticated by human beings in South-Western Asia (Iran and Iraq) between 10000 and 6000 years BC. Around 80% of global goat population is in the developing countries. Among them, India ranks second in the world population of goat. With the present population of 135.2 million, goats account for more than 25 % of the total livestock in the country and contribute Rs 106335 million annually to the national economy (19th Livestock Census, 2012). They provide food and nutritional security to the millions of marginal and small farmers and agricultural labourers by providing animal protein through meat and milk. There are about 34 well defined and recognized breeds of goats in India (NBAGR, 2018). Goats are among the main meat-producing animals in India, whose meat (chevon) one of the choicest meat is having huge domestic demand. Besides meat, goats, a multi functional/purpose animal which provide other products like milk, skin, fibre and manure. Goat contributed 5.05 million tonnes of milk (3.67% of total milk production of 137.685 million tons) and 0.97 million tonnes of meat (15.56% of total production) during the year 2013-2014 (BAHS, 2015). In India, Rajasthan is ranked first in goat population with a population of 21.66 millions, (37.53%) of total livestock population in the state. Sirohi goat is the most preferred goat breed over other breeds in Rajasthan (Marwari and Jhakhrana). Goats are the backbone of rural economy particularly, in the arid, semi-arid and mountainous regions of Rajasthan. Goat farming is a suitable option for revenue generation for the small scale farmers and tribal people as it require a very low investment and can efficiently survive and sustain sparse vegetation and extreme climatic conditions. Best known as the "poor man's cow" or "mini cow" these magnificent animals are the best alternative source of additional income and milk contributing immensely to the poor man's economy. In pastoral and agricultural subsistence societies in India, goats are kept as a source of an insurance against disaster. Goats are generally managed under extensive production system and semi intensive system, where only at night shelter is provided. A major part of their fodder requirement is met out through grazing at waste and other common community lands.

India is a conventional home for about 645 tribal communities (population census, 2011). They are dispersed in almost all the states and union territories. The areas populated by tribals are mostly underdeveloped. They mostly reside in secluded villages or hamlets. The population of tribal in the country is 104 millions, which is 8.2 per cent of the total population of the country whereas; the Scheduled Tribe (ST) population of Rajasthan State is **7,097,706** constituting 8.4 percent of the total ST population of India (Census, 2011). The Scheduled Tribes of the State constitute 12.6 percent of the total population (68548437) of the state. According to the 19th Livestock census, 2012 goats population in the districts of Banswara, Dungarpur and Udaipur which have been categorized as tribal districts in Rajasthan state (study area) is 38.52% of the total livestock population in Rajasthan.

RESULTS AND DISCUSSION

Existing health management practices of goats followed by tribal farmers

The data on health management practices recorded from the 3 categories of farmers is presented in table-1.

(1) Common diseases of goats: The major diseases reported by large number of respondents were various infestations (45 %), followed by FMD (25.83 %), digestive disorder (20 %) and viral disease like pneumonia (9.17 %). This could be due to the fact that the majority of farmers might have not followed good hygiene practices.

(2) Vaccination (FMD, ET, PPR and HS): It was observed that most of the farmers (90%) practiced FMD vaccination followed by HS (79.17%), PPR (70.83) and ET (55.83). The proportion of goat holders who followed vaccination increased with increasing in flock size while reverse trend was observed for those not adopting vaccination practices. Similar findings are in agreement with Gurjar (2006), Tanwar *et al.* (2012), Jana *et al.* (2014) and Sorathiya *et al. (*2016).

(3) Deworming: The overall results indicates that 65.83 per cent farmers were well aware about deworming practices, once or twice in a year, while 34.67 per cent farmers were not aware about deworming practices. The proportion of goat holders who followed deworming twice in a year were found in increasing order with decrease in flock size while, reverse trend was observed for those not adopted deworming practices. In case of small and medium group of farmers, mostly 70 and 66.67 percent farmers of surveyed population practiced deworming twice in a year while minimum 41.66 per cent of large farmers practiced deworming once in a year. Similar findings were observed by Gurjar (2006), Tanwar *et al.* (2012), Jana *et al.* (2014) and Sorathiya *et al. (*2016).

(4) Treatment of goats in case of disease: Perusal of data reveals that majority (51.67 %) of the respondents were taking the help of local paravets for treating their animals followed by 25% farmers who consult a nearby veterinarian. It points to the shortage of qualified Veterinary Doctors in study area. Ten per cent of farmers took help of village. Priest (Bhagat) for treating their animals and 13.33 % farmers treated their animals by themselves. Similar observations were reported by Gurjar (2006) and Tanwar *et al.* (2012).

TABLE-1 Health management practices followed by tribal farmers

S. No.	Variable	Small		Medium		Large		Overall	
1.	**Common disease of goats**	Freq	%	Freq	%	Freq	%	Freq	%
	FMD	15	25.00	10	27.78	6	25.00	31	25.83
	Other infestation	30	50.00	15	41.67	9	37.50	54	45.00
	Digestive disorder	10	16.67	8	22.22	6	25.00	24	20.00
	Other (Pneumonia)	5	8.33	3	8.33	3	12.50	11	9.17
2.	**Vaccination: FMD, ET, PPR, HS**								
	FMD	55	91.66	32	88.88	21	87.50	108	90
	HS	50	83.33	27	75.00	18	75.00	95	79.17
	PPR	45	75.00	25	69.44	15	62.50	85	70.83
	ET	35	58.33	20	55.55	12	50.00	67	55.83
3.	**Deworming**								
	Practiced	42	70	24	66.67	10	41.66	79	65.83
	Not practiced	18	30	12	33.33	14	58.33	41	34.67
4.	**Treatment of goats in case of disease goats**								
	By village priests called as Bhagat	4	6.66	4	11.11	4	11.11	12	10.00
	Generally by farmer himself	6	10.00	5	13.89	5	20.83	16	13.33
	Mostly by local paravet	34	56.67	18	50.00	10	41.66	62	51.67
	By nearby veterinarian	16	26.67	9	25.00	5	20.83	30	25.00
5.	**Isolation of sick animals**								
	Practiced	42	70	22	61.11	14	58.33	78	65.00
	Not practiced	18	30	14	38.89	10	41.67	42	35.00
6.	**Disinfection of goat shed**								
	Practiced	38	63.33	20	55.56	13	54.17	71	59.67
	Not practiced	22	36.67	16	44.44	11	45.33	49	40.83
7.	**Disposal of dead animals**								
	Disposed off in open away from village	13	21.67	8	22.22	6	25.00	27	22.50
	Given to carcass collector	47	78.33	28	77.78	18	75.00	93	77.50

(5)Isolation of sick animals: It was observed that a sizable majority (65%) of the respondents were not isolating their sick animals from the healthy ones. Only 35 per cent of them were following the practice of separation of sick animals from the others. This might be due to lack of enough spaces as well as lack of knowledge regarding transmission of contagious diseases. Similar findings were observed by Gurjar (2006) and Tanwar *et al.* (2012).

(6)Disinfection of goat shed: Overall result indicated that majority of farmers (59.67%) practiced disinfection of goat shed by application of lime on the walls or by plastering a mixture of mud and cow dung twice in a year. The remaining 40.83 per cent farmers did not do any disinfection. In total, 63.33 per cent of small flock farmers, 55.56 percent of medium flock farmers and 54.17 percent of large flock farmers followed disinfection of goat shed practices. Similar findings were observed by Gurjar (2006) and Tanwar *et al.* (2012).

(7)Disposal of dead animals: It was found that none of the tribal respondents were burying the dead animals while 22.50 % farmers disposed off in open area away from village and 77.50 % respondent give the dead body to the carcass collector (table 4.11). It can be concluded from the study that majority of farmers were having awareness for proper disposal of dead animals. Similar findings were observed by Gurjar (2006) and Tanwar *et al.* (2012).

CONCLUSION

It was concluded that health practices were mostly traditional without much regard to scientific recommendations. However, these management practices in general were better in case of small farmers as compared to medium and large farmers.

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