Study the Breeding Practices using by Goat Keepers in the Pratapgarh District of Rajasthan

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ABSTRACT: India is predominantly an agricultural country and about 70 per cent of its population depends upon agriculture. This necessities the importance of subsidiary occupation like Goat rearing so as to increase the income and employment of the rural poor thereby improving their standard of living. The Goat population in Rajasthan state was 20.84 million while in the study area (Pratapgarh District) the population was 2.59 lakh. Majority of the households in rural areas are below poverty line and most of them belong to landless agricultural labors, marginal, small farmers and rural crafts person. The most common symptoms of heat detection was mounting (26.66%) and bleating (25.83%). The majority of goat keepers (50.83%) confirm their goat pregnancy by enlargement of abdomen followed by non return of goat in heat (28.33%) and remaining goat keepers confirm through diagnosis (20.83%) while, maximum goat keepers (63.33%) in the study area practiced to house their pregnant does with their other goats i.e. group housing and 36.66 per cent goat keepers were aware to house pregnant does in a separate house. Present study provides basic knowledge about the breeding practices used by goat keepers.

Keywords: Goat, Socio-economic, Rural people, Breeding, Husbandry, Ruminants, Farmers, Pratapgarh.

INTRODUCTION

India is predominantly an agricultural country and about 70 per cent of its population depends upon agriculture. One of the major problems faced by India is to feed its increasing population with balanced diet. The demographic pressure on land and sub division of land holding has jointly increased the number of uneconomic holdings in the villages. This fact has been termed by the researchers as the downward structural change in agriculture. This necessities the importance of subsidiary occupation like Goat rearing so as to increase the income and employment of the rural poor thereby improving their standard of living. In the prevailing socio-economic conditions in the country where per capita land holding is hardly 0.2 Ha, goat rearing becomes an inseparable component of mixed farming system. Goat farming has been recommended as the best choice for the rural people in developing countries because of the low investment, wide adaptability, high fertility and fecundity, low feed and management needs, high feed conversion efficiency, quick pay-off and low risk involved. Goats play an important role in income generation, capital storage, employment generation and improving household nutrition. The goat rearing is the backbone of the economy of small and landless farmers in India. It is an insurance against crop failure and provides alternate source of livelihood to the farmers all year round.

Goat husbandry in India is essentially an endeavor of millions of small and marginal families, who rear animals on "Crop Residues" and Common Property Resources". The Goat population in Rajasthan state was 20.84 million while in the study area (Pratapgarh District) the population was 2.59 lakh (Livestock census, 2019). Goat rearing is the most dominant activity in the goat-based farming systems in terms of both contribution to household's total income and employment generation (Kumar and Upadhyay 2009). Small ruminants like sheep and goats farming playing an important role in the development of rural mass and contributing to the livelihood of millions of poor by offering immense opportunities and potential for improvement of income and employment generation. It also acts as cash buffer, reduces the risk of crop failure in mixed farming and tremendous potential for improving the food, employment and livelihood security of rural people (Ramesh *et al.*, 2012; Singh *et al.*, 2013). Goat rearing is immerging as an important source of livelihood particularly for landless laborers and marginal farmers across the country (Mohan *et al.*, 2012). Education, Family educational status and exposure to the communication sources are vital in goat keeping (Chandra *et al.*, 2005).

Majority of the households in rural areas are below poverty line and most of them belong to landless agricultural labors, marginal, small farmers and rural craftsperson. The incidence of poverty and unemployment is relatively more acute in rain fed farming areas. In such areas goat rearing enterprise could be adopted and expanded by the rural poor with low land base. The capital investment is relatively low, land requirement is small, reproductive rates are higher due to shorter breeding interval and high prolificacy. Goat Rearing can be managed by spare family labour and do not require any serious housing facilities and management skills. Goat farming suits the small, marginal and large farmers equally well since it provides continuous income throughout the year even in the face of natural vagaries of drought. Goat is a multi-functional animal and plays a significant role in the economy and nutrition of landless, small and marginal farmers in the country. Goat rearing is an enterprise which has been practiced by a large section of population in rural areas. Goats can efficiently survive on available shrubs and trees in adverse harsh environment in low fertility lands where no other crop can be grown.

In the context of the foregoing, it is essential to take into consideration local traditions, the production environment, the production goals, trait preferences, and goat breeding practices in order to effectively and sustainably utilize the genetic resources for goats that are currently available. Consequently, the purpose of this study was to collect all relevant data and, in the end, to suggest a including all members of the community in the breeding programme for the regional goat breeds. Based on the neighborhood's breeding ambitions.

METHOD AND MATERIALS

The study was conducted in Pratapgarh district of Rajasthan, India during 2019. The altitude of the investigation area ranges 24.03 N 74.78°E with an average elevation of 580 m and 1610 feet above mean sea level. The survey was conducted from 12 villages from 4 tehsils of Pratapgarh district of Rajasthan. A total of 120 goat keepers were sampled at random and interviewed using pre-panned questionnaires. A group discussion and personal interview was also held with community representatives, elders and women to obtained overview to breeding objectives, performance traits, and goat production practices.

RESULT AND DISCUSSION

Data presented in Table 1 showed that the most common symptoms of heat detection was mounting (26.66%) and bleating (25.83%). The tehsil wise results indicate that maximum (43.33%) of goat keepers used mounting as heat detection symptoms in Pipalkhunt tehsil. The chi-square value was more than tabulated value at 5 per cent level of significance. Hence the difference is significant agreement between the tehsil with regards to symptoms of heat detection. Findings are in agreement with Sabapara *et al.* (2014) who revealed that all of the goat keepers identify the estrus

on the basis of symptoms, viz., mounting on each other (76.8%), bleating (72.8%), tail vibration (62.8%), mucous discharge (63.6%) and frequent urination (57.2%). However, mounting on each other and bleating were the most reliable symptom for detection of estrus in the goats adopted by respondents. Furthermore, data given in table 2 revealed that natural service was practiced for breeding in goat by all (100%) of goat rearers and artificial insemination was not practiced in the study area due to lack of trained person and non availability of buck semen. The present investigation shows that Artificial Insemination as a tool for goat improvement was not adopted by the respondents due to lack of trained person, lack of technologies and non availability of buck semen in the area. The results are in agreement with Jimmy *et al.* (2010) who reported that uncontrolled natural mating was the predominant mating system (100%) among goat keepers. These findings are also in close agreement with the results of Sorthiya *et al.* (2016); Zergaw *et al.* (2016); Vijaya *et al.* (2017).

Data given in table 4 indicated that majority of goat keepers (50.83%) confirm their goat pregnancy by enlargement of abdomen followed by non return of goat in heat (28.33%) and remaining goat keepers confirm through diagnosis (20.83%). The study indicated that minimum goat rearers used scientific method for pregnancy confirmation. The chi-square value was more than tabulated value at 5 per cent level of significance. Hence the difference in significant agreement among the tehsil with regards to pregnancy diagnosis. Findings are in agreement with Sakthivel *et al.* (2012) who reported that pregnancy diagnosis was mainly done based on abdominal appearance. Moreover, data presented in table 5 shows that majority of 59.16 per cent of goat rearers used community breeding buck and 40.33% per cent goat keepers used own breeding buck for mating. The chi-square value was less than tabulated value at 5 per cent level of significance. Hence the difference was non-significant among the tehsil with regards to source of breeding buck. Findings are in agreement with Jimmy *et al.*, (2010) who concluded that in each village, less than 20% kept their own bucks. Sharma *et al.* (2007) reported that the 44.0 per cent have their own breeding buck. While, table 6 indicated that maximum at 47.5 per cent goat keepers observed their goat in heat during rainy or onset of monsoon and 33.33 per cent goat keepers observed their goats in summer season and remaining 19.60 per cent observed in winter season. The chi-square value was less than tabulated value at 5 per cent level of significance. Hence the difference was non-significant among the tehsils with regards to breeding season. Findings are in not agreement with Sorathia *et al.* (2016) who reported that February to April were the months when majority of respondents (74.00%) bred their goats.

Data presented table 7 indicated that maximum goat keepers (63.33%) in the study area practiced to house their pregnant does with their other goats i.e. group housing and 36.66 per cent goat keepers were aware to house pregnant does in a separate house. Finding are in

general agreement with Warale *et al.* (2017) who concluded that large number of respondent (61.67%) were taking care during kidding by providing separate space for kidding. While, table 8 shows that maximum at 78.33 per cent goat keepers used a breeding buck for a period of 16-24 month while, at 14.16 per cent goat keepers used a breeding buck for a period of 16 month. The minimum goat keepers (7.50%) used breeding buck at the age of more than 24 months. Findings are in agreement with Rashmi *et al.* (2014) who reported that breeding buck of 10-16 months old were used.

Table 1: Symptoms of heat (oestrus) observed by goat keepers.

Sr. No.	Tehsils	Bleating	Frequent urination	Mounting on other animals	Reduction in milk yield	Vibrate the tail	All of the above
1.	Pratapgarh	10 (33.33%)	3 (10.00%)	6 (20%)	2 (6.66%)	4 (13.33%)	5 (16.66%)
2.	Pipalkhunt	8 (26.66%)	2 (06.66%)	13 (43.33%)	1 (03.33%)	3 (10.00%)	3 (10.00%)
3.	Dhariawad	6 (20.00%)	4 (13.33%)	7 (23.33%)	5 (16.66%)	3 (10.00%)	5 (16.66%)
4.	Chotisadri	7 (23.33%)	4 (13.33%)	6 (20.00%)	7 (23.33%)	2 (6.66%)	4 (13.33%)
	Total	31	13	32	15	12	17
	Av. of tehsil	7.75	3.25	8	3.75	3	4.25
	Per cent of farmers	25.83	10.83	26.66	12.50	10.00	14.16

$\chi^2 = 25.946^*$ (Significant)

Table 2: Methods of mating in goats.

Sr. No.	Tehsil	Method of mating	
		Natural mating	Artificial mating
1.	Pratapgarh	25 (20.83%)	Nil
2.	Pipalkhunt	35 (29.16%)	Nil
3.	Dhariawad	45 (37.5%)	Nil
4.	Chotisadri	15 (12.5)	Nil
	Total	120	Nil
	Av. of tehsil	30	Nil
	Per cent of farmers	100	Nil

Table 3: Pregnancy diagnosis in goats.

Sr. No.	Tehsils	Through enlargement of abdomen	By diagnosis	Non return
1.	Pratapgarh	14 (46.66%)	6 (20%)	10 (33.33%)
2.	Pipalkhunt	13 (43.33%)	9 (30.00%)	8 (26.67%)
3.	Dhariawad	17 (85.00%)	5 (25.00%)	8 (40.00%)
4.	Chotisadri	17 (85.00%)	5 (25.00%)	8 (40.00%)
	Total	61	25	34
	Av. of tehsil	15.25	6.25	8.5
	Per cent of farmers	50.83	20.83	28.33

$\chi^2 = 13.540^*$ (Significant)

Table 4: Source of breeding buck in four tehsils.

Sr. No.	Tehsil	Own	Community
1.	Pratapgarh	10 (33.66%)	20 (66.66%)
2.	Pipalkhunt	13 (43.33%)	17 (56.66%)
3.	Dhariawad	12 (40.00%)	17 (60.00%)
4.	Chotisadri	14 (46.66%)	16 (53.33%)
	Total	49	71
	Av. of tehsil	12.25	17.756
	Per cent of farmers	40.33	59.16

$\chi^2 = 1.026$ (Non significant)

Table 5: Breeding season of goats.

Sr. No.	Tehsil	Summer	Rainy	Winter
1	Pratapgarh	11 (36.66%)	15 (50.00%)	4 (13.33%)
2	Pipalkhunt	12 (40.00%)	13 (43.33%)	5 (16.66%)
3	Dhariawad	9 (30.00%)	14 (46.66%)	7 (23.33%)
4	Chotisadri	8 (26.66%)	15 (50.00%)	7 (23.33%)
	Total	40	57	23
	Av. of tehsil	10	14.25	5.75
	Per cent of farmers	33.33	47.50	19.60

$\chi^2 = 2.367$ (Non significant)

Table 6: Housing of pregnant does.

Sr. No.	Tehsils	Separate	Group
1.	Pratapgarh	10 (33.33%)	20 (66.67%)
2.	Pipalkhunt	12 (40.00%)	18 (60.00%)
3.	Dhariawad	9 (30%)	21 (70.00%)
4.	Chotisadri	13 (43.33%)	17 (56.67%)
	Total	44	76
	Av. of tehsil	11	19
	Per cent of farmers	36.66	63.33

Table 7: Average age of breeding buck.

Sr. No.	Tehsil	16 Month	16-24 Month	>24 Month
1.	Pratapgarh	3 (10.00%)	20 (66.67%)	7 (23.33%)
2.	Pipalkhunt	3 (10%)	27 (90%)	0 (00.00%)
3.	Dhariawad	5 (16.67%)	23 (76.67%)	2 (6.67%)
4.	Chotisadri	6 (20%)	24 (80%)	0 (00.00%)
	Total	17	94	9
	Av. of tehsil	4.25	23.5	2.25
	Per cent of farmers	14.16	78.33	7.50

CONCLUSIONS

The study was undertaken to find goat breeding practices, production system and traits preferences under smallholder goat keepers in Pratapgarh district of Rajasthan. The selection practices for both breeding buck and doe in the society based on traditional selection criteria is also promising for genetic improvement of the goat stock. Thus, in designing breeding program, full participation of the society. The important factors that must be taken seriously in order to create a goat improvement programme that is sound and sustainable include the current environment, production system, breeding practices, producers' trait preferences, adaptation traits, and the multipurpose roles of the goat under consideration.

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