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Constraints faced by goat keepers in Rajsamand district of Rajasthan

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Abstract**—** *The aim of the present study was to find out the constraints faced by goat keepers in the Rajsamand district of Rajasthan. In this study, four tehsils were selected, namely Rajsamand, Nathdwara, Deogarh, and Kumbhalgarh, based on their high goat populations. From each tehsil, five villages were randomly chosen, and 10 respondents with at least ten goats were surveyed from each village, totaling 200 respondents. Data was collected using a pre-tested, well-structured interview schedule. The present study showed that 69.5% of respondents faced severe constraints, with 12% experiencing the most severe and 18.5% experiencing the least severe constraints. The main constraints identified were grazing land shortage (MPS: 94.16), lack of veterinary services (MPS: 91.5), and insufficient credit facilities (MPS: 87). Other significant constraints included a shortage of feed and fodder (MPS: 85.33), non-availability of green fodder (MPS: 80.5), and a lack of knowledge regarding the selection of breeding bucks (MPS: 78.16). Additional issues were a lack of knowledge about scientific goat housing (MPS: 73.33), the high cost of breeding bucks (MPS: 71.5), the high price of concentrate feed (MPS: 69.66), and a lack of knowledge about balanced feeding (MPS: 65.5). Further constraints included a lack of knowledge about mineral mixture feeding (MPS: 62.33), the high price of mineral mixtures (MPS: 61.16), low productivity of goats (MPS: 59.16), parasitic problems (MPS: 54.83), and a lack of knowledge about deworming (MPS: 50.16). Based on the findings, it is recommended to develop appropriate strategies for the advancement of goat farming and support for goat farmers.*

Keywords**—** ***Goat keepers, Constraints, Rajsamand***

I. INTRODUCTION

The goat species holds significant importance in the country's livestock sector due to its short generation intervals, high rates of prolificacy, and the ease of marketing both the goats and their various products. These products include meat, milk, skin, and fiber. In regions such as arid, semi-arid, hilly, heavy rainfall, and tribal areas, goats are of great economic value as they can survive on minimal forage and in extreme climatic conditions where other animal species may struggle. The country is also known for its high-quality leather production from goats, making it a leading exporter of goatskin. Furthermore, there is a possibility of exporting non-traditional goat products like cheese and goat milk powder, which have limited domestic demand (*Dixit et al.*, 2009). As of 2019, India's goat population was 148.88 million, constituting 27.8% of the total livestock. Rajasthan leads in goat population with 20.84 million goats (BAHS, 2019). In 2022-23, the country produced 230.58 million tonnes of milk, with goat milk contributing 3.30% to the total. Additionally, the total meat production was 9.77 million tonnes during the same period, with goat meat accounting for 14.47% (BAHS, 2023). The goat is an important species of livestock that holds special significance in the ecology of southern Rajasthan. This is primarily due to the fact that commercial dairy farming and other cash crops are not economically feasible,

especially in the Southern Region. Goat rearing serves as a major source of economic sustenance for marginal farmers and landless laborers in Rajasthan. Rajasthan is home to six recognized breeds of goats, namely Sirohi, Marwari, Jhakrana, Sojat, Karauli and Gujari, in addition to a large population of non-descriptive goats. Goat farming is a significant agricultural activity in Rajsamand district. It is a common practice in both marble and non-marble areas of the district. Farmers in these regions raise goats for meat and milk production. In marble areas, farmers face challenges such as limited grazing land due to marble quarries. The presence of marble in an area has an impact on goat grazing. Goats find it difficult to graze on areas with a lot of marble due to the hard and rocky surface. This limits the availability of grass and plants for the goats to feed on. Recognizing and addressing the primary constraints of goat farming facilitates easier adoption for goat farmers. Therefore, the present study was conducted to examine the various constraints faced by goat farmers in Rajsamand district.

II. MATERIALS AND METHODS

The present study was conducted in Rajsamand district of Rajasthan. Four tehsils- Rajsamand, Nathdwara, Deogarh, and Kumbhalgarh-were selected from the district. From each tehsil, five villages were chosen randomly, and 10 respondents who owned at least ten goats were selected from each village. Data was collected from 200 goat farmers through personal interviews using a pre-tested, well-structured interview schedule. The collected data was analyzed using simple statistical techniques including frequency, percentage, mean score, and MPS (mean percent score). The identified constraints were assessed on a 3-point scale: most serious constraint (scored as 3), severe constraint (scored as 2), and less severe constraint (scored as 1). Scores for each constraint were aggregated to obtain a total constraints score. Based on these scores, the constraints were ranked accordingly.

Percentage and frequency

This approach involved calculating the percentage and frequency distribution of goat farmers, enabling the categorization of goat farmers accordingly.

Mean score

It was obtained by dividing total score of each statement by total number of respondents.

$$Mean\ Score = \frac{Total\ Score\ of\ each\ Statement}{Total\ number\ of\ respondents}$$

Mean percent score (MPS)

Mean percent scores were obtained by multiplying total obtained score of the respondents by hundred and divided by the maximum obtainable score under each practice. Formula of MPS is given under:

$$MPS = \frac{\text{Total score obtained by the respondent}}{\text{Maximum obtainable scores}}$$

Rank

The ranking was done in descending order based on the mean percentage score received. This process helped identify the severity of constraints in a specific order of priority.

III. RESULTS AND DISCUSSION

Level of constraints

The results of the level of constraints presented in Table 1 indicated that the majority (69.5%) of respondents faced severe constraints. Additionally, 12% faced the most severe level of constraints, while (18.5%) faced the least severe constraints in the study area. The findings are in line with the results obtained by Kavithaa *et al.* (2020), who revealed that the majority (53.34%) of the respondents had a medium level of constraints followed by high (33.33%) and low (13.33%) level constraints in dairy farming activities.

Table 1: Distribution of respondents on the basis of level of constraints (n=200)

S.No	Constraints level	Rajsamand		Nathdwara		Deogarh		Kumbhalgarh		Total	
		F	%	F	%	F	%	F	%	F	%
1.	Least severe (<65.00)	5	10	8	16	10	20	14	28	37	18.5
2.	Severe (65-79)	43	86	38	76	33	66	25	50	139	69.5
3.	Most severe(>79)	2	4	4	8	7	14	11	22	24	12
	Total	50	100	50	100	50	100	50	100	200	100

n= number of respondent, F= frequency, % = per cent

Types of constraints being faced by goat keepers

The results of type of constraints presented in Table 2 indicated that the goat rearers identified shortage of grazing land as the foremost constraint, with an MPS value of 94.16, making it the top-ranked constraint. The findings are in line with the results obtained by Singh *et al.* (2018), who reported that the majority of goat farmers (95.6%) and sheep farmers (92.6%) identified lack of grazing land as the main issue.

The lack of veterinary services in the village is ranked as the second most serious constraint, with an MPS value of 91.5. Similar findings were reported by Halpati *et al.* (2023), who reported that the primary health constraints were the lack of health services in the study area, with a mean score of 68.65 (I).

The lack of credit facilities ranked as the third most pressing constraint, with an MPS value of 87. The results are supported by Sorathiya *et al.* (2016), who reported that top socio-economic constraints included a lack of credit facilities and high wage rates in Valsad and Navsari districts of south Gujarat.

The shortage of feed and fodder was considered the fourth most significant constraint, with an MPS value of 85.33. These findings are in line with the findings of Tudu and Roy (2015), who revealed that both the scarcity of feed and grasses were major constraints faced by goat farmers.

The non-availability of green fodder was recognized as the fifth serious constraint in the study area, with an MPS value of 80.5. The results of the present investigation are in consonance with Gamit *et al.* (2020), who reported that the majority of respondents identified the lack of availability of green fodder (75.83%) as the most important feeding constraint faced by goat keepers in the study area.

The MPS score for the constraint of lack of knowledge regarding the selection of breeding bucks was calculated to be 78.16, placing it in sixth place, the lack of knowledge about scientific goat housing was identified as the seventh serious constraint, scoring an MPS value of 73.33 and the high cost of breeding bucks ranked as the eighth most critical constraint within the examined region, receiving an MPS value of 71.5. Similar findings were reported by Kakraliya *et al.* (2022), who revealed that the high cost of breeding bucks (MPS=92.13), lack of knowledge regarding the selection of breeding bucks (MPS=86.11), lack of knowledge about scientific goat housing (MPS=62.18) were major constraints faced by goat keepers in the study region.

The high price of concentrate feed was recognized as the ninth critical constraint, registering an MPS score of 69.66. The results are in line with the observation of Sabapara *et al.* (2014), who reported that among different constraints related to feeding, high prices of concentrate (89.60%) appeared at first rank.

The lack of knowledge of balanced feeding ranked as the tenth most critical constraint within the examined region, receiving an MPS value of 65.5. The results of the present investigation are in consonance with Tanwar (2011), who reported that among different constraints related to feeding, 94.17% (ranked 1st) of farmers were ignorant about balanced feeding for their goats.

Table 2: Type of Constraints faced by goat keepers in Rajsamand district of Rajasthan (n=200)

S.No	Constraints	MPS	Rank
1.	Lack of credit facility	87	III
2.	Non-availability of green fodder	80.5	V
3.	Shortage of feed and fodder	85.33	IV
4.	High price of concentrate	69.66	IX
5.	Shortage of grazing land	94.16	I
6.	High price of mineral mixture	61.16	XII
7.	Lack of knowledge about feeding of mineral mixtures	62.33	XI
8.	Lack of knowledge about balance feeding	65.5	X
9.	Lack of knowledge about deworming	50.16	XV
10.	Lack of veterinary services in the village	91.5	II
11	Parasitic problems in goat	54.83	XIV
12.	Lack of knowledge about scientific goat housing	73.33	VII
13.	Lack of knowledge regarding selection of breeding buck	78.16	VI
14.	Low productivity of local goats	59.16	XIII

15.	High cost of breeding bucks	71.5	VIII
MPS= Mean per cent score			

The issue of lack of knowledge about mineral mixture feeding was the eleventh most critical constraint in the examined region, scoring an MPS value of 62.33, the high price of mineral mixtures ranked as the twelve most pressing constraint, with an MPS value of 61.16 and the MPS score for the constraint related to the low productivity of goats was computed as 59.16, indicating its thirteenth position in the ranking. Similar findings were reported by Kakraliya *et al.* (2022), who revealed that the lack of knowledge about mineral mixture (MPS 91.66), the high price of mineral mixture (MPS= 80.00) and low productivity of local breeds was also causing concern to a significant number of respondents (MPS=72.44) in Sirohi tehsil of Sirohi district of Rajasthan.

The issue of parasitic problems in goats was identified as the fourteenth most significant constraint in the examined region, with an MPS value of 54.83. Similar findings were reported by Sabapara *et al.* (2014), who revealed that lack of parasitic problems in goats (73.20%) was the significant constraint faced by goat farmers in the Navsari district of Gujarat.

The lack of knowledge about deworming; it was the fifteenth most pressing constraint with an MPS score of 50.16. The present findings are supported by Gamit *et al.* (2020), who reported that the lack of knowledge on the importance of deworming (43.33%) is a significant constraint faced by goat keepers in Saurashtra, Gujarat.

IV. CONCLUSION

From the present study, it was concluded that most respondents (69.5%) faced severe constraints, with the main issues being a shortage of grazing land (MPS: 94.16), a lack of veterinary services (MPS: 91.5) and insufficient credit facilities (MPS: 87). To address the identified constraints in the study area, technical and institutional intervention is required. This can be achieved through the dissemination of appropriate technologies and extension strategies for better feeding, improved goat breed supply and improved access to feed and fodder as well as their conservation .Ultimately, these measures will enhance goat farming and boost goat farmers income.

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