Annals of Arid Zone 65(4): 97-101, 2026

Health Care Practices Adoption and Constraints in Sojat Goat Rearing Area of Rajasthan

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Received: February 05, 2026 Accepted: April 29, 2026

Abstract: Present study was conducted with aim to identify the health care practices and constraint in Sojat goat breed rearing in Pali district of Rajasthan. The study was based on survey of primary data which were collected from 120 farmers scattered in 2 blocks of the district by personal interview. It was observed that five major health care practices were adopted near about cent percent in the selected area *viz.* vaccination, deworming, treatment of sick animal, cleaning of milking utensil and shed hygiene. The major constrain felt by goat keeper are lack of veterinary services in villages (MPS: 87.22), costly veterinary treatment (MPS: 83.34), long distance to veterinary hospitals (MPS: 77.5), the lack of knowledge about healthcare (MPS: 72.78) and high mortality of kids (MPS: 72.5), parasitic problems in goats (MPS: 67.78) and wild animal threats (MPS: 58.62). The animal health providers had an awareness and enormous knowledge of infectious, metabolic and parasitic diseases. The farmers were used worm control measures in accordance with their own views and combining modern and traditional treatments. It is concluded that farmers are need to educate about scientific health management practice to reduce the kid mortality to get higher income from goat farming.

Key words: Heath care, adoption, constraint, Sojat goats.

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Citation
Palriya, P., Pandey, R., Neeraj, Meena, V.K., Bhateshwar, V. and Kachhawaha, S. 2026. Health care practices adoption and constraints in Sojat goat rearing area of Rajasthan. Annals of Arid Zone 65(4): 97-101

https://doi.org/10.56093/aaz.v65i4.175819

https://epubs.icar.org.in/index.php/AAZ/article/view/175819

India's livestock sector is a backbone of the nation's agricultural economy, significantly contributing to income generation, employment, equity and foreign exchange earnings. Between 2014-15 and 2022-23, the sector exhibited a robust Compound Annual Growth Rate (CAGR) of 7.38% at constant prices. Notably, the livestock sector's share in the overall Gross Value Added (GVA) of agriculture and allied sectors increased from 24.32% in 2014-15 to 30.23% in 2022-23 (BAHS, 2024). Goat (*Capra hircus*) rearing holds immense importance in the livelihoods of nomadic communities, small and marginal farmers and landless laborers across India. India ranks as

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the second-largest goat-producing country in the world, with a population of 148.88 million goats, showing a 10% increase over the previous livestock census. Rajasthan alone is home to 20.84 million goats, contributing 14.0% to the national goat population (Livestock Census, 2019). Understanding the goat management practices followed by goat keepers in the area is essential to find out strength and weakness of the goat farming which is necessary for finalizing the suitable intervention in the system for the policy maker as well as for technocrats. Sojat goat breed is a prominent meat-type breed and predominantly reared in the Sojat, Marwar Junction and surrounding tehsils of the Pali, Jodhpur district. Breed Known for their fast growth, good body conformation and economic value, Sojat goats are primarily maintained under semi-intensive or extensive systems. However, limited scientific documentation exists on their production potential, health care and management practices at the farmer level. The breed was first time registered in 2022 (Accession no. INDIA_GOAT_1700_SOJAT_06035). The present study was undertaken with heath care practices and constraints in sojat goat rearing in western Rajasthan. This study would contribute to sustainable goat farming, improved health care practices and enhanced economic returns, ultimately benefiting rural livelihoods in Rajasthan and beyond.

Material and Methods

The present study was conducted in the Pali district of Rajasthan, located in the western part of the state. Geographically, Pali lies approximately between 25°15′ to 25°55′ North latitude and 72°56′ to 73°57′ East longitude, covering a total area of about 12,387 square kilometers. To achieve the objectives of the present study, a detailed field survey was conducted during 2024-2025. Data were collected through direct, face-to-face interviews with goat owners. For the purpose of the present study, two tehsils were selected from Pali district based on secondary data obtained from census reports and district statistical records with emphasis on areas having a relatively high goat-rearing population. Accordingly, Marwar Junction and Sojat tehsils were purposively selected for conducting the survey. Four villages were randomly selected from each tehsil based on the highest population of Sojat goats raised by farmers. Ten farmers were randomly selected from each village. Total, 120 farmers were selected for this study. Data were tabulated and statistically analyzed to draw conclusion.

Result and Discussion

The common goat diseases observed in the selected villages were PPR, enterotoxaemia, foot and mouth disease, pneumonia, colibacillosis and foot rot. Incidence of mortality were high in kids (15-30 %) particularly in non-scientific housing and it could be overcrowding and unhygienic management of kids.

Health Care Practices

The result obtained on different health care practices of goat rearer from 120 respondents are summarized in Table 1. The data revealed that majority of goat keepers completely adopted the practices like vaccination, deworming, cleaning of shed, washing of udder before milking and cleaning the utensil of milking etc. goat keeper were no knowing about the treatment of metabolic disease and not adopted the vaccination schedule of other infectious diseases *viz*. blue tongue, pox and haemorrhagic septicemia.

Vaccination: The overall result indicated 100% vaccination against the infectious diseases *Viz*. FMD, PPR, enterotoxaemia coverage among all surveyed goat farmers in both Marwar Junction and Sojat tehsils. Every respondent reported administering vaccines to their goats, suggesting a high level of awareness and adoption of preventive health care practices across the study area. This is remarkably higher than reports from other regions. Gurjar *et al*. (2008) found that only 49.72% of goat rearer in southern Rajasthan practiced vaccination. Even lower rates were reported by Ekambaram *et al*. (2011) in Andhra Pradesh (18.67%), Yadav *et al*. (2020) in the Vindhyan zone (25.83%), and Singh *et al*. (2020) in Punjab (38.33%), revealing a stark contrast in vaccine awareness and access across India. Goat rearer were aware about the vaccination schedule and common infectious diseases in goat. All the farmers were purchasing the vaccine from private firm.

Deworming: Similar to vaccination, deworming was practiced by all respondents (100%) in both tehsils. This uniform deworming coverage highlights the farmers' understanding of internal parasite control as a crucial part

Table 1. Health Care Practice adopted by Sojat goats keerer in Pali District of Rajasthan.

Health care practice	Types	Marwar Junction Tehsil		Sojat Tehsil		Total	
		F	%	F	%	F	%
Vaccination	Yes	60	100	60	100	120	100
	No	0		0	0	0	0
Deworming	Yes	60	100	60	100	120	100
	No	0		0	0	0	0
Sick animal treated	By quacks	0		0	0	0	0
	By trained person	60	0	60	100	120	100
Cleaning of milking utensils	Good	60	0	59	98.33	177	98.33
	Poor	0	0	0	0	0	0
Udder wash before milking	Yes	60		59	98.33	177	98.33
	No	0	0	0	0	0	0

of flock health management. This is a positive outcome compared to findings from other studies. Gurjar *et al.* (2008) reported only 64.17% adoption in southern Rajasthan, while Ekambaram *et al.* (2011) observed 82.08% in Andhra Pradesh and Kumar (2011) noted 68.34% awareness in north-west Rajasthan. In contrast, lower adoption rates were reported in Gujarat (46.67% not practicing) by Sorathiya *et al.* (2016), and in the Vindhyan zone (31.67%) by Yadav *et al.* (2020). The higher adoption of deworming indicates the farmers were too much aware about the deworming and its impact on health status.

Treatment of sick animals: All sick animals were treated by trained personnel rather than quacks, indicating a complete reliance on professional or trained veterinary service providers. This demonstrates a positive attitude among goat farmers toward professional veterinary care, which is essential for improving animal health and productivity. This is in stark contrast to reports by Singh *et al.* (2018) from eastern Rajasthan. The majority of farmer did not adopt the vaccination against goat pox due to lack of knowledge.

Sanition condition of goat shed: Majority of respondents (98.33%) maintained good hygienic conditions in their goat sheds. Only one respondent was not adopting the hygienic condition in shed from Sojat tehsil. This reflects the high standard of cleanliness maintained in goat housing, which is critical for disease prevention and control of infectious diseases. This reflects a high level of hygienic awareness, unlike in areas reported by Kumar (2011) where 90% of farmers were unaware of shed sanitation and basic hygiene. Sorathiya *et al.* (2016) also highlighted poor hygienic practices in the high rainfall zone of Gujarat.

Cleaning of milking utensils: Most farmers (98.33%) cleaned their milking utensils regularly. All 60 respondents in Marwar Junction practiced this hygiene measure, and only one farmer in Sojat was not adopted the cleaning the milking utensil. This suggests strong adherence to hygienic milk handling practices among the majority of goat rearers.

Udder washing before milking: Udder washing before milking was practiced by 98.33% of respondents overall, with perfect compliance in Marwar Junction and nearly all in Sojat tehsil. This routine practice is essential in maintaining milk quality and preventing mastitis. Far exceeding findings in Punjab (Singh *et al.*, 2020), where only 47.50% of goat farmers had knowledge of mastitis and hygienic milking practices. Proper sanitation and health care practices in the goat reduces the chances of diseases and enhances the profitability of goat farming.

Constraint in adoption of best health care practices

Major Constrain faced by the goat keeper in the Pali district in adopting various recommended management practices. In this context, constraints refer to the barriers that hinder the effective implementation of these health care practices. The preliminary list was then discussed with experts for validation and refinement. The lack of veterinary services in villages was ranked as the most serious constraint (MPS: 87.22, Rank I), followed by

Table 2. Constraints in Health Care Practices face by goat keepers

Statement	Marwar Junction Tehsil		Sojat Tehsil		Total	
	MPS	Rank	MPS	Rank	MPS	Rank
Lack of knowledge about health care	64.44	VII	81.11	IV	72.78	IV
Disease outbreak	57.78	X	80.56	V	69.17	VI
Parasitic problem in goat	70	IV	65.56	VIII	67.78	VII
High mortality rate of kids	66.11	VI	78.89	VI	72.5	V
Lack of knowledge about deworming	73.33	II	58.33	IX	65.83	IX
Wild animal problem	61.67	IX	55.56	X	58.62	X
Lack of knowledge	63.89	VIII	69.44	VII	66.67	VIII
Lack of veterinary services in the village	81.11	I	93.33	II	87.22	I
Costly veterinary treatment	71.11	III	95.56	I	83.34	II
Long distance about veterinary hospital	68.89	V	86.11	III	77.5	III

MPS=mean per cent score

costly veterinary treatment (MPS: 83.34, Rank II) and long distance to veterinary hospitals (MPS: 77.5, Rank III). Additionally, the lack of knowledge about healthcare (MPS: 72.78, Rank IV) and high mortality of kids (MPS: 72.5, Rank V) were major concerns. Issues like parasitic problems in goats (MPS: 67.78, Rank VII) and wild animal threats (MPS: 58.62, Rank X) were relatively lower in rank. The findings are consistent with those of Chaturvedani *et al.* (2017) and Kumar *et al.* (2017), who reported similar issues in remote rural areas.

Conclusion

Goat play a vital role in rural economics of Rajasthan state and major economic activities. The study concluded that majority (Cent perc ent) of goat owner adopted the vaccination and deworming health care practices. Other health care practices are hygienic condition adopted 98.33% in Cleaning of milking utensil and udder washing before milking. All the goat keepers are consulted with veterinarian and livestock assistant for the health care. Major constraint face by the goat keeper are veterinary facility, distance of hospital, lack of knowledge of diseases and high mortality in kids. Despite of least attention from planners, sojat goat breed population has increased at the fastest rate in India. However, instead of increasing the breed, emphasis should be laid on productivity per animal, marketing, and prevention of Peste des Petitis ruminants (PPR), Haemorragic septicaemia (HS) which has led to higher mortality and abortion in goats.

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Dr. Subhash Kachhawaha, is a Senior Scientist (Veterinary Medicine) with research interests in rumen microbiology, with a focus on understanding rumen microbial functions and their role in improving nutrient utilization and livestock productivity. His areas of interest also include enhancing production efficiency in ruminants through diagnosis and management of production and nutritional deficiency diseases. Development of sustainable package of practice (POP) for livestock production. He is particularly focused on the development, adoption and transfer of climate-resilient livestock technologies for arid and semi-arid regions. His work aims to improve animal health and productivity while strengthening the resilience and livelihoods of livestock farmers under changing climatic conditions.

Paramveer Palriya is pursuing Ph.D. (Animal Science) from Kerala Agricultural University, Mannuthy, Thrissur, Kerala. His research interests focus on small ruminant production and management, with particular emphasis on enhancing goat productivity under diverse production systems. His work explores improved housing and management practices aimed at optimizing animal health, growth and productive performance. His research area is developing sustainable and cost-effective housing systems adopted to different climatic and production conditions. His research also addresses sustainable livestock production through efficient resource utilization and improved management strategies.

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Vikas Kumar Meena is a researcher in Livestock Production Management, currently pursuing his PhD at the ICAR–National Dairy Research Institute (NDRI), Karnal. During his Master's, he conducted specialized research on the traditional management practices adopted by goat farmers, addressing one of the key aspects of sustainable small ruminant husbandry in India. His work aims to bridge traditional knowledge with scientific research, promoting sustainable and farmer-friendly livestock practices at the grassroots level.

Dr. Vinod Bhateshwar, Assistant Professor at SKNAU, Jobner. He works on developing efficient and profitable production systems for commercial goat farming with emphasis on sustainable and farmer-friendly technologies. His research also promotes precision and climate-resilient livestock production through improved housing, feeding, breeding, and management practices suited to Rajasthan.

Printed in December 2026