

APPRAISAL OF SHEEP AND GOAT REARING PRACTICES FOLLOWED BY FARMERS IN HARYANA

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SUMMARY

The present study was carried out to assess the socio-economic status of sheep and goat farmers and to assess the level of scientific sheep and goat rearing practices followed by them. The data were collected from 50 farmers of seven villages of Hisar district in Haryana state through an interview schedule. Results revealed that about two-third of the farmers attended their animal at the time of kidding/lambing. Most of the respondents (85%) didn't follow practice of cleaning of new born immediately after birth. Majority of respondents (91%) didn't follow the practice of cutting and disinfection of navel cord after birth. The respondents were quite aware about the practice of vaccination. About half of the respondents performed regular deworming of their animals while 44% were practicing it occasionally. Majority of respondents (78%) followed practices to control ecto-parasites. Disposal of carcass and placenta was not done properly. About two-third of respondents had *Kuchcha* housing system for animals and earthen floor was the most commonly used floor in animal shed. Majority of respondents weren't aware about flushing and hence didn't follow the practice. It was observed that sheep and goat farming is mainly done in traditional way and more efforts are required to make the farmers aware about scientific rearing practices.

Keywords: Deworming, Feeding, Housing, Socio-economic, Vaccination

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Small ruminants (Sheep and goat) play an important role in rural prosperity of India. They require low investment, act as storage of high liquidity wealth and a source of consistent income that can be used to support the nutritional security of the household (Kumawat *et al.*, 2017). These small ruminants can survive successfully in adverse climatic conditions using sparse vegetation. They are generally maintained on grazing and farmers generally rear them in extensive management system using traditional management practices. Proper nutrition and health management are the key aspects in sheep and goat rearing and require good care with skillful management. If proper management practices such as feeding, breeding and other management are followed, it not only helps to achieve the desired level of production but also increase income of farmers (Dudi and Meena, 2013). Growth, reproduction, and production performance of any livestock primarily depends upon implementation of proper management practices. There are several reasons why these practices vary from one location to another. Understanding the specific advantages and disadvantages of the rearing systems requires research on the livestock management practices that are prevalent in a certain area (Gupta *et al.*, 2008) and hence in formulating relevant policies. Gunaseelan and Singh (2018) reported that insufficient knowledge about scientific goat production and management and lack of training on scientific goat

farming were among major constraints faced by the farmers. Kumar *et al.* (2021) and Acharya *et al.* (2022) also emphasized on the need of training for farmers for successful calf rearing in Hisar and nearby areas and dairy farmers in Odisha, respectively. Health care managements like preventive measures, vaccination, deworming and timely treatments ensures proper health and growth of animals. All aspects of management practices either independently or in combination affect the overall performance of the animals. Keeping in view, the present study was carried out to assess the level of existing sheep and goat rearing practices adopted by farmers in Hisar district of Haryana.

Seven villages (Bagla, Ghursal, Adampur, Dhani Mohabbatpur, Modakhera, Khairampur and Talwandi Rana) from Hisar district of Haryana state were selected randomly and farmers engaged in sheep and goat farming were interviewed for studying the sheep and goat rearing practices followed by them. A total of 50 respondents from these villages were interviewed with the help of well-structured interview schedule. The data were collected by personal interview technique and by direct observation in the farmer's flocks. The information of existing management practices on various aspects pertaining to sheep and goat rearing were collected and the data were analyzed using suitable statistical technique.

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Socio-economic and personal profile of farmers/respondents

The socioeconomic profile of the respondents has been presented in Table 1. Majority of the respondents (72%) belonged to middle age group (31-60 years), while 16% respondents belonged to age group of 18-30 years, remaining respondents were more than 60 years old. Similar pattern was observed by Sorathiya *et al.* (2016) in their study. More than half (56%) of the respondents under study belonged to scheduled caste category while 28% and 16% farmers belonged to backward caste and general category, respectively. Reverse trend was observed by Lawar *et al.* (2009) in case of goat farmers of Maharashtra in the home tract of Sangamneri goat. In present study, 54% respondents were having joint family while remaining 46% belonged to nuclear family. About two-third of the respondents (66%) had medium family size (5-8 members). Among respondents, labor was their main occupation and 44% of them were laborers, followed by farming (26%). Majority of respondents were illiterate and only 8% were having 10th or higher education. Kumar *et al.* (2018b) also observed prevalence of illiteracy among goat farmers. Only a few respondents were keeping only sheep while others were keeping either sheep or goat both or only goat. Average number of animals per respondent was 47. Sorathiya *et al.* (2016) also reported average flock size of 47 heads in their study. One farmer was keeping only male animals.

General management and health care practices

General management practices followed by sheep and goat farmers were studied and the results are presented in Table 2. About two-third of farmers attended their animal at the time of parturition. However, most of the respondents (85%) didn't follow scientific practice of cleaning of newborn immediately after birth. Majority of respondents (91%) didn't cut and disinfect the navel cord after birth which was in agreement with the findings of Lavania *et al.* (2014) who also reported that none of the respondents were following this practice. Singh *et al.* (2020) also observed that around 45% of goat farmers were unaware about cutting and disinfection of navel cord.

All the respondents replied in affirmative for colostrum feeding to kid/lamb within 1-2 hour of birth and there was no issue of release of placenta for feeding colostrum. All respondents got their animals vaccinated against FMD, sheep pox and Enterotoxaemia. This might be due to better awareness among farmers about vaccination of animals. Lavania *et al.* (2014) also reported that around 80% farmers got their animal vaccinated. In contrast, Kumar *et al.* (2018a) reported that 90% of goat farmers were not getting their animals vaccinated in

Table 1. Socio-Economic and Personal Profile of sheep and goat farmers

Socio-Economic and Personal Profile	
(1) Age	No. of farmers
(1) 18-30 years	08
(2) 31-60 years	36
(3) Above 60 years	06
(2) Sex	
(1) Male	46
(2) Female	04
(3) Caste	
(1) SC	28
(2) BC	14
(3) General	08
(4) Family Type	
(1) Nuclear	23
(2) Joint	27
(5) Family Size	
(1) Small (upto 4 members)	11
(2) Medium (5-8 members)	33
(3) Large (above 8 members)	06
(6) Marital Status	
(1) Unmarried	05
(2) Married	45
(3) Widow/Widower	
(4) Divorced	
(7) Occupation of the Respondent	
(1) No wage earner	13
(2) Labourer	22
(3) Farming	13
(4) Artist/Craftsman	-
(5) Service/Retired	02
(6) Business	-
(8) Average annual income of the family	
(1) Upto 50,000	21
(2) 51,000 to 1,00,000	18
(3) Above 1,00,000	11
(9) Education of the Respondent	
(1) Illiterate/ can read and write	36
(2) Primary School	03
(3) Middle School	07
(4) High School	01
(5) 12th/Post-matric diploma	02
(6) Graduate and above	01
(10) Landholding	
(1) No land	38
(2) up to 2.5 acres	05
(3) More than 2.5 acres	07

Table 2. General management and health care practices followed by farmers in Hisar district

General management and health care practices	
Particulars	% of farmers following practice
(1) Attended the animal at the time of kidding/lambing	
(1) Yes	61.22
(2) No	38.78
(2) Cleaning of kid/lamb immediately after birth	
(1) Yes	14.29
(2) No	85.71
(3) Cutting and disinfection of navel cord after birth	
(1) Yes	8.16
(2) No	91.84
(4) Time of colostrum feeding	
(1) Within 1-2 hour after birth	100
(2) After release of placenta	-
(5) Weaning age	
(1) 2 months	34.69
(2) 3 months	57.14
(3) Other	08.16
(6) Methods of identification used	
(1) Tagging	10
(2) Tattooing	00
(3) None of above	90
(7) Vaccination against FMD, Sheep pox and Enterotoxaemia	
(1) Yes	100
(2) No	00
(8) Deworming of animals	
(1) Regular	48
(2) Occasional	44
(3) Not practiced	08
(9) Frequency of Deworming	
(1) 3 months or less	42
(2) 4 months	16
(3) 4 months or more	34
(10) Deworming of kids/lambs first done at age of	
(1) 15 days	26
(2) 1 month	42
(3) 2 months or more	22
(4) Not done	08
(11) Practices to control ecto- parasites	
(1) Yes	78
(2) No	22
(12) If yes, then	
(1) Insecticidal powder	
(2) Dipping tank	
(3) Using Insecticidal soap/spray	56.41
(4) Others (injection)	43.59

(13) Treatment of sick animal by	
(1) Veterinary doctor/VLDA	86
(2) Use of local empirical knowledge	14
(14) Isolation of sick animals from healthy animals	
(1) Yes	24
(2) No	76
(15) Disposal of carcass	
(1) Deep burial	76
(2) Thrown away from premises	24
(16) Disposal of placenta	
(1) Deep burial	26.53
(2) Thrown away from premises	73.47
(17) Regular hoof trimming	
(1) Yes	10
(2) No	90
(18) Method of shearing by sheep farmers	
(1) Hand shearing	100
(2) Machine shearing	-
(3) Chemical shearing	-
(19) Frequency of shearing	
(1) Six months interval	100
(2) Once a year	-
(20) Grooming of animals	
(1) Yes	14
(2) No	86
(21) Market Age	
(1) Less than 6 months	76
(2) More than 6 months	24
(22) Marketing place	
(1) Home	92
(2) Local market	04
(3) Outside	04

Khajuwala and Pugal tehsils of Bikaner district in Rajasthan. Whereas, Mandavkar *et al.* (2015) reported that only half of the respondents followed vaccination regularly.

Around half of the respondents performed regular deworming of their animals while 44% were practicing it occasionally. Lavania *et al.* (2014) also reported similar findings. Method of identification such as tagging or tattooing was not followed by majority (90%) of respondents. More than three-fourth of respondents (78%) followed ecto-parasites control practices, furthermore spray/insecticidal soaps were mainly used by farmers as control measure followed by other methods such as injectable medications. However, Kumar *et al.* (2018a) reported comparatively higher number of respondents who didn't use any of the ecto-parasite control methods.

Disposal of carcass and placenta was not done properly. Majority of respondents threw placenta away

Table 3. Feeding, housing and breeding management practices followed by farmers in Hisar district

Feeding, housing and breeding management practices	
Particulars	(%)
(1) Creep feed or Green fodder feeding to young one from	
(1) 10-15 days	18.37
(2) 1 month	77.55
(3) Other	04.08
(2) Feeding of mineral mixture	
(1) Regularly	-
(2) Occasionally	28
(3) Not feeding	72
(3) Grazing System	
(1) Extensive	60
(2) Semi intensive	40
(4) Grazing duration	
(1) 0-4 hours	36
(2) 4-8 hours	64
(5) Conc. Feeding to kid/lamb	
(1) Yes	32.65
(2) No	67.35
(6) Type of concentrate	
(1) Homemade	72.72
(2) Purchased	27.28
(7) Flushing (supplementary concentrate feeding before breeding)	
(1) Yes	22
(2) No	78
(8) Type of housing	
(1) Kuchcha	68
(2) Pucca	14
(3) Mix	18
(9) Location of shed	
(1) Attached to human dwelling	72
(2) Nearby their dwelling	28
(10) Type of floor	
(1) Pucca (cement concrete)	02
(2) Earthen floor	88
(3) Brick paved	10
(11) Type of roof	
(1) Asbestos sheets/Galvanized iron sheets roof	06
(2) Thatched roof	46
(3) Others	48
(12) Floor bedding if used	
(1) Feed waste/wheat or rice straw	36
(2) Mats	02
(3) None	62
(13) Protection against harsh weather conditions	
(1) Yes	82
(2) No	18

(14) Approximate Age at first service	
(1) Less than 1 year	100
(2) 1-1.5 year	
(3) More than 1.5 years	
(15) Approximate twinning/kidding percent (Number)	
(1) Sheep -	30%
(2) Goat	65%
(16) Approximate Sex ratio	
(1) Around 1:20	18.37
(2) 1:10 or less	24.49
(3) others	57.14
(17) Breeding season	
(1) Seasonal	100
(2) Throughout year	-

from premises while the proportion of such respondents was comparatively less for disposal of carcass. Singh *et al.* (2020) also reported that only 21.67% of goat farmers were aware about proper disposal of carcass. It was observed that for treatment of sick animals, most of the respondents were taking help from veterinary staff. However, about three-fourth of respondents didn't isolate the sick animals from healthy ones. Kumar *et al.* (2018a) also reported that more than half of the goat rearers were not using veterinary facility and around 53% of respondents also didn't isolate the sick animals.

All sheep rearers under study were using hand shearing method for shearing of animals and they were shearing animals at least twice a year. Market age was stated as less than 6 months by about three-fourth of respondents. Others were usually keeping the animals for longer time. Mehta *et al.* (1995) observed marketing age at around 6 months in sheep flocks. In contrast, Sorathiya *et al.* (2016) and Mordia *et al.* (2019) observed that animals were generally sold during age of 6-9 months. Respondents usually sold their animals at home, only few were taking them to local market or outside for sale. Findings of Tanwar and Rohilla (2012), Sorathiya *et al.* (2016) and Mordia *et al.* (2019) also reported marketing place as home in case of majority of respondents.

Feeding, housing and breeding management practices

Feeding, housing and breeding management practices followed by farmers were studied and presented in Table 3. Sixty percent of the respondents were following extensive grazing system. Our findings were in agreement with the findings of Lavania *et al.* (2014). Around 2/3rd of the respondents were taking their animals for grazing for more than 4 hours. Similar results were also reported by Lavania *et al.* (2014) and Kumar *et al.* (2016) in goat farmers.

Most of the respondents were not using any mineral mixture in feed to animals while 28% fed it occasionally. Kumar *et al.* (2016) also reported that only 2.50 % goat rearers were having awareness about feeding of mineral mixture. In contrast, Lavania *et al.* (2014) reported that most of respondents were feeding mineral mixture to their animals. About 70% of farmers were using homemade concentrate and the results were in agreement to the findings of Mandavkar *et al.* (2015).

In case of more than 70% respondents, animal shed was attached to home dwelling. Present results were in agreement to the findings of Lavania *et al.* (2014) and Regar *et al.* (2019) in tribal goat farmers of Rajasthan. About two-third of respondents had *Kuchcha* housing system for animals and the most common type of floor used in animal shed was earthen floor. Mehta *et al.* (1995) also reported prevalence of *Kuchcha* housing in case of most of the respondents. While in case of roof, 46% respondents had thatched roof in animal shed. Regar *et al.* (2019) also reported higher frequency of thatch roof used by goat farmers.

About 36% of respondents used straw or waste as bedding material, while most didn't use anything as bedding material. Most of the respondents (82%) also took measures to protect animals from inclement weather conditions. Similar observations were reported by Regar *et al.* (2019). Majority of respondents weren't aware about flushing and hence didn't follow the practice. The lack of flushing might be the reason of birth of weak lambs/kids. Twinning percentage was higher in goats than sheep in farmers' flock.

CONCLUSION

According to the results of present study, it can be said that majority of the respondents are rearing sheep and goat in traditional way in nearby areas of Hisar district. Majority of respondents aren't following practice of cleaning of new born immediately after birth, cutting and disinfection of the navel cord after birth. However, the respondents were well aware about vaccination and majority of them also followed practices to control ecto-parasites. Disposal of carcass and placenta was not done properly which is of major concern. Majority of respondents weren't aware about flushing and hence didn't follow the practice. There is need of awareness programmes for farmers regarding these aspects so that sheep and goat rearing is done in more scientific way and increase the returns to farmers.

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