

*Original Research***Feeding and Breeding Management Practices Followed by Livestock Farmers in Banswara District of Rajasthan**Yogita Khandelwal<sup>1\*</sup>, Lokesh Gupta<sup>2</sup> and Jeewan Ram Jat<sup>3</sup><sup>1</sup>Research Scholar, Rajasthan College of Agriculture, Udaipur- 313001, Rajasthan, INDIA<sup>2</sup>Head, Department of Animal Production, RCA, MPUAT, Udaipur- 313001, Rajasthan, INDIA<sup>3</sup>SRF, Department of Animal Production, RCA, MPUAT, Udaipur- 313001, Rajasthan, INDIA**\*Corresponding author:** [yogita.khandelwal01@gmail.com](mailto:yogita.khandelwal01@gmail.com)

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**Abstract**

Livestock sector is an important sub-sector of the agriculture. It plays a significant role in the Indian economy. India is bestowed with the largest livestock population in the world. Production potential of livestock depends on the management practices. The study was conducted in purposively selected Banswara district of Southern Rajasthan including 30 tribal farmers from 6 selected villages of 2 tehsils namely Banswara and Sajjangarh. The study revealed that the all most all (96.66%) farmers fed the green fodder to their animals. The majority of farmers (76.67 %) fed non leguminous and 23.33 % farmers fed leguminous fodder. Major source of drinking water was hand pumps and canal. All the livestock keepers got their animal detected estrous symptoms by bellowing, whereas 56.67 per cent famers detected through mounting on other animals. Nearly half of the total respondents practiced natural services.

**Key words:** Animal, Breeding, Feeding, Livestock, Management**How to cite:** Gupta, L., Khandelwal, Y., & Jat, J. (2020). Feeding and Breeding Management Practices Followed by Livestock Farmers in Banswara District of Rajasthan. International Journal of Livestock Research, 10(3), 176-183. doi: 10.5455/ijlr.20191005090906**Introduction**

Livestock production is an important source of income for the rural poor in India. A sizeable percentage of livestock owners are below the poverty line. Animal husbandry has a large potential for providing gainful employment to rural women in their own households; as 70% of the workforce in dairying complies of women. Government of India, through various schemes has undertaken cattle and buffalo breeding programmes, for genetic up-gradation at the national level.

Reproduction is an important consideration in the economics of cattle production. In the absence of regular breeding and calving at the appropriate time, cattle rearing will not be profitable. This is possible only by increasing the reproductive efficiency of the animals. Successful reproduction encompasses the ability to

mate, the capacity to conceive and to nourish the embryo and deliver the viable young ones at the end of a normal gestation period. Understanding of feeding and breeding management practices followed by farmers is necessary to identify the strengths and weaknesses of the rearing systems and to formulate suitable intervention policies. Feeding and breeding are the most important management practices in animal husbandry. It is generally agreed that the animal fail to prove their full genetic potential for higher production when fed at low levels. Under feeding of young stock of animals leads to poor growth, delay in maturity and lower productivity than optimum after attaining the breedable age. The farmers must have a thorough understanding of the facts that animal production can be increased by adoption of improved animal feeding and breeding practices.

Feeding and breeding of animals play an important role among all the managerial practices followed by the farmers. Scientific assessment on breeding soundness and effective utilisation of the feed and fodder by-products may be propagated among farmers to improve the economy of the farmer in the dairying system. Hence, the present study was taken to assess the feeding and breeding managerial practices followed by the animal rearer in the district.

## Materials and Methods

The study was conducted in purposively selected Banswara district of Southern Rajasthan. A total of 30 tribal farmers were randomly selected from 6 selected villages of two tehsils namely- Banswara and Sajjangarh. While selecting respondents due care was taken to ensure that they were evenly distributed in the village and truly represented animal feeding and breeding management practices followed in the study area. The selected farmers were interviewed individually and the desired information was collected regarding feeding and breeding management practices with the help of pre-tested interview schedule. The statistical tools like frequency and percentages were used for yielding the results and finally inferences were drawn.

## Results and Discussion

### Feeding Practices

The distribution of farmers according to feeding practices followed by them is given in Table 1. The data revealed that 96.66 per cent farmers fed the green fodder to their animals. The majority of farmers (83.33%) did not feed green fodder to their animals round the year because the farmers of Banswara district have small land holding and most of dairy farmers does not have irrigation source in winter and summer season so they are unable to provide green fodder round of the year. Similar results found that Sandeep *et al.* (2000) reported that the 86.0 per cent of green fodder was obtained during Rabi season in Bundelkhand region of Uttar Pradesh.

**Table 1:** Distribution of farmers according to existing feeding practices (n=30)

S. No.	Existing feeding Practices	Frequency (f)	%
<b>Feeding green fodder</b>			
1	All categories of animal	29	96.66
2	Selected categories of animal	1	3.34
<b>Feeding green round the year</b>			
1	Yes	5	16.67
2	No	25	83.34
<b>Type of fodder</b>			
1	Leguminous	23	76.67
2	Non leguminous	7	23.33
<b>Name of fodder</b>			
1	Cynadon spp.	13	43.33
2	Lucerne	9	30
3	Berseem	8	26.67
<b>Chopping green fodder</b>			
1	Always	6	20
2	Sometimes	8	26.67
3	Never	16	53.33
<b>Practice of feeding green fodder</b>			
1	Before milking	14	46.67
2	After milking	11	36.67
3	During milking	5	16.66
<b>Preserve excess fodder</b>			
1	Yes	30	100
2	No	0	0
<b>Preserved form</b>			
1	Hay	30	100
2	Silage	0	0
<b>Green fodder prepared or purchased</b>			
1	Market	6	20
2	Home	24	80
<b>Kind of dry fodder</b>			
1	Dry grass	8	26.67
2	Straw ( wheat / maize)	18	60
3	Soybean Stover	4	13.33
<b>Chopping dry fodder</b>			
1	Always	7	23.33
2	Sometimes	13	43.34
3	Never	10	33.33
<b>Mix green fodder with dry fodder</b>			
1	Yes	11	36.67
2	No	19	63.33

<b>Feeding concentrate</b>			
1	Yes	22	73.33
2	No	8	26.67
<b>Concentrate purchased or prepared</b>			
1	Home	18	60
2	Market	12	40
<b>Treatment of concentrated mixture before feeding</b>			
1	Soaking	19	63.33
2	Grinding	8	26.67
3	Boiling	3	10
<b>Provide concentrate mixture</b>			
1	Once in 24 hour	28	93.33
2	Twice in 24 hour	2	6.67
3	Thrice in 24 hour	0	0
<b>Source of drinking water for animal</b>			
1	Hand pump	13	43.33
2	Well	4	13.33
3	Village pond	5	16.67
4	Canal	8	26.67
<b>Frequency of watering</b>			
1	Once in 24 hours	8	26.67
2	Twice in 24 hours	20	66.66
3	More than Twice in 24 hours	2	6.67
<b>Management</b>			
1	Complete stall feeding	6	20
2	Complete grazing	2	6.67
3	Stall feeding and grazing	22	73.33
<b>Grazing</b>			
1	Hills surrounding village	12	40
2	Own land	5	16.67
3	Community land	6	20
4	Outskirt of village	7	23.33

The data shows that 76.67 per cent respondents fed their animals with non-leguminous whereas 23.33 % fed leguminous. Less than half of the subjects (43.33%) offered cynadon spp., 30 % lucerne and 26.67 % provided berseem. The data shows that 20.00 per cent respondents always practice chopping of green fodder, 26.67 per cent sometimes and 53.33 per cent never chopped. These findings are very close to Kumawat (2016) reported that the type of fodder used by the farmers to feed their goat was 27.5 per cent leguminous.

It was found that 46.67% farmers fed green fodder before milking, 36.67% after milking and 16.66 % during milking in the study area. All the farmers (100.00 %) preserved excess green fodder for feeding to their animals in the form of hay. Surprisingly no one was found to practice silage making in the study area. Manohar *et al.* (2014) reported that none of the buffalo keeper has been recorded to prepare hay and silage in Jaipur district of Rajasthan. This table also revealed that only 20.00 per cent of farmers purchase green fodder mainly in winter season from the market and neighbour, while 80.00 per cent farmers were homemade green fodder. Kumawat (2016) found that only 27.5 per cent of farmers purchase green fodder mainly in winter season from the market. The data revealed that wheat/ maize straw was the most commonly fed dry fodder by 60.00 per cent respondents followed by dry grasses at 26.67 per cent, only 13.33 per cent respondents used soybean stover. Jayashree *et al.* (2014) reported that the dry fodder (Paddy/Ragi/Maize/Wheat straw) was fed by only 18.26 per cent of the rearers. This table revealed that the 43.34 per cent respondents sometimes practice chopping the dry fodder, 33.33 per cent never chopped and only 23.33 per cent farmers always chopped the dry fodder. These findings are almost similar to the results as observed by Kumawat (2016) reported that the 14.5 percent respondents always practice chopping of dry fodder, 37.5 percent sometimes and 48 percent never chopped.

It can be further observed that majority of (63.33%) farmers did not mixed the green with dry fodder, while 36.67 per cent of them were mixing the green with dry fodder before offering fodder to their animals. These observations are in conformity with the findings of Ramavatar (2012) who reported that green fodder was mixed with dry fodder by (30.00%) of the dairy cattle owners for feeding it to the cattle. Further majority of animal rearers (73.33%) provided concentrate mixture to their animals. and 26.67 per cent farmers did not provide concentrate mixture to their animals in the surveyed area. Similar results regarding feeding practices were reported by Lavania *et al.* (2014) also reported that majority of goat keepers used home prepared concentrate as compared to purchased feed. These findings are in line with the findings of Mordia (2017) reported that majority 84.17 per cent goat owners fed concentrate to goats while, 15.83 percent did not practiced feeding of concentrate. It can also be seen that soaking in water is most common practice before feeding the concentrate mixture to the animals. The percentage of farmers using pre-treatment of concentrate mixture before feeding like soaking, boiling and grinding was 63.33, 26.67 and 10.00 per cent respectively. Kumawat (2016) reported that the percentage of farmers using pre-treatment of concentrate mixture before feeding like boiling, soaking and grinding was 26.5, 48.0 and 25.5 per cent respectively.

It was found that faire majority (93.33%) of farmers provided concentrate mixture one time in a day, while only few farmers (6.67%) provided concentrate mixture twice in a day to their animals in the study area. Regarding source of water it was found that the hand pumps was the most common source of water. Similar finding were also reported by Singh *et al.* (2014) and Dar *et al.* (2016) reported that major sources of drinking water were hand pump and bore well followed by canal and village ponds. It was found that

majority (66.66%) of farmers provided drinking water twice in a day whereas only few farmers (6.67%) provided drinking water more than twice in a day to their animals in the study area.

The data show that the majority of respondents (73.33%) adopted stall feeding + grazing system; whereas 20 per cent farmers restored to stall feeding and remaining 6.67 per cent respondents adopted only grazing in the study area. It was further observed that grazing allowed by 40.00 per cent farmers in hills surrounding village, 23.33 per cent farmers at outskirts of village, 20.00 per cent respondents on community land, while remaining 16.67 per cent farmers allowed grazing on their own land.

### Breeding Management Practices

The results regarding breeding practices followed by the dairy farmers are presented in Table 2.

**Table 2:** Distribution of farmers on the basis of their breeding practices (n=30)

S. No.	Heat Symptom	Frequency (f)	%
1	Bellowing	30	100
2	Frequent urination	7	23.33
3	Smelling	4	13.33
4	Mounting on other animals	17	56.67
5	Feeling restless	13	43.33
6	All above	4	13.33
	<b>Breeding through</b>		
1	Natural service	17	56.67
2	Artificial insemination	7	23.33
3	Both	6	20
	<b>Breeding Bull</b>		
1	Own	2	6.67
2	Community	28	93.33
	<b>Type of Breeding Bull</b>		
1	Pure indigenous	15	50
2	Cross breed	8	26.67
3	Exotic	7	23.33
	<b>Insemination</b>		
1	Early heat	5	16.67
2	Mid heat	19	63.33
3	Late heat	6	20
	<b>Detection of Conceiving</b>		
1	Observing sign of heat in the next cycle	19	63.34
2	Observing after 21 days	7	23.33
3	Pregnancy diagnosis	1	3.33
4	Enlargement of abdominal cavity	3	10

A perusal of the data show that the symptoms used by respondents for detected of heat was (100.00%) bellowing, (56.67%) mounting on other animals, (43.33%) feeling restless, (23.33%) frequent urination,

(13.33%) smelling and only few farmers (13.33%) by detection estrous symptoms. These observations are in conformity with the findings of Sharma *et al.* (2007) who reported that the most common symptoms of heat detection were bleating and rapid tail movement. The results revealed that 56.67 per cent of the respondents adopted natural service. This was followed by 23.33 and 20 per cent who adopted A. I. and both (A.I. + natural service), respectively. Similar finding were also reported by Sharma *et al.* (2007) and Sakthivel *et al.* (2012) that the natural service was commonly used for breeding of goats. This finding is in contradiction with that of Mlik *et al.* (2005), Sabapara *et al.* (2010) and Gadhwal (2011) who revealed that majority of the respondents used A.I. breeding practices. Table 2 further shows that among respondents 93.33 per cent were using community breeding bull and 6.67 per cent had their own bull. Regarding quality of breeding bulls, half of the respondents used cross bred bull. As regards to the stage of heat at which animals were allowed for insemination, majority (63.33%) of respondents followed the practice in mid heat, 16.67 and 20.00 per cent of the respondents followed the practice in early heat and late heat detection, respectively. It was noted that all the respondents observed their animals for heat symptoms regularly. The data shows Table 2 the results revealed that the symptoms used by majority of farmers for detection of conceived (63.33%) observing sign of heat in the next cycle, (23.33%) observing after 21 days, (10.00%) enlargement of abdominal cavity and only (3.33%) farmers by detection of pregnancy diagnosis conceived or not their animal. None of the respondents were maintaining the records of breeding.

### Conclusion

The study revealed that all farmers fed the green fodder to their animals. The majority of farmers fed their animals with non leguminous fodder. Major source of drinking water was found to be hand pumps and canal in the study area. The maximum farmers adopted stall feeding + grazing and stall feeding. All respondent's detected of estrous symptoms their animals by bellowing, restless and mounting on other animals. All most all farmers (93.33%) were using community breeding bull. More than fifty per cent respondents adopted natural service for conceiving their animals. Respondents were found that to feed mineral mixture and concentrate of overall scientific feeding and breeding practices of mineral mixture to their animals and pregnant animal were found to be poor that need to improvement. Further, the results indicate need of extension activities for spreading improved management practices and improving the veterinary services to enhance the productivity of animals.

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