

BUFFALO FEEDING MANAGEMENT PRACTICES ADOPTED IN RURAL AREAS OF WESTERN HARYANA

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(Received : 4 February 2018; Accepted : 15 March 2018)

SUMMARY

The present investigation was conducted in two districts (Bhiwani, Sirsa) of western Haryana. Further two tehsil were selected from each district and two villages from each tehsil were selected randomly. Twenty five buffalo rearers from each of village were selected thus making a sample of 200 buffalo rearers. Results of this study revealed that, most of the farmers stall fed buffaloes and grazed in common pasture land/ fallow fields. All the respondents used to chop dry fodder before feeding while 83.00 per cent of respondent chopped green fodder. A large number of (79.00 per cent) of buffalo keeper fed wheat straw to buffaloes. More than half, 63.00 per cent soaked and boiled concentrate mixture before feeding. A large number of buffalo keeper fed concentrate mixture to buffaloes in advance pregnancy and young calves. About 97.50 percent of respondent fed concentrate to young calf, while only 65.50 per cent fed concentrate mixture to heifers. About 64.00 per cent of the respondents gave 3-5 kg. Concentrate to lactating buffaloes. On the basis of this study it was recommended that buffalo keepers should be motivated through training and demonstration for balanced feeding and preparation of balanced concentrate mixture at home. Subsidies on mineral mixture and urea molasses mineral bricks should be provided to enhance these feed additives.

Key words : Western Haryana, rural, buffalo, feeding, management

Efficient buffalo management is very essential to increase milk production, to improve the existing managerial practices, we need a strong database. As far as western Haryana is concerned very few efforts are known to have been made to study systematically the buffalo management practices. Due to scanty rainfall, soil salinity, meteorological drought, poor fertility and nutrient deficiency milk production is affected because of unavailability of better feed for buffalos. As we all know that feeding management is a key factor for the success of any dairy farming, the role of feeding management is very important. Feeding management plays a very significant role in exploiting the full potential of dairy animals. The feeding constitute about 75-80 percent of total cost incurred on milk production in dairy business (Verma and Sastry, 1994). Insufficient feeding of dairy cows results in poor growth, delayed maturity, late conception and poor production. Present study was conducted to study the existing feeding practices prevalent in the western Haryana because it is necessary to obtain first-hand information on the existing buffalo husbandry practices being followed by the buffalo keepers in western Haryana. So that,

findings of this study can provide feasible and relevant package for buffalo feeding practices.

MATERIALS AND METHODS

In this field study, desired observations on various buffalo husbandry practices in western Haryana were recorded during the period of four months by using interview schedule, interview guide and direct observations method by the researcher himself. The study was conducted in Bhiwani and Sirsa districts of western Haryana. Two tehsils from each selected district were identified, which were Loharu, Dadri, Sirsa and Rania. (Table 1)

A well structured pre-designed and pre-tested questionnaire was used to collect the information on array of different management practices (feeding, housing and health) followed by buffalo owners through personal interview. By keeping in mind the objectives of the study an interview schedule was prepared with the help of College of Veterinary Science, Hisar. The data was collected through personal interview technique from each selected village under the following headings :

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1. Personal particulars of farmers and his family members.
2. Detailed information about the buffalo kept by the respondents.
3. Detail of buffalo feeding management practices followed by buffalo owners.

The statistical tools were used for interpretation of data are : 1) Frequency distribution for the total numbers of respondents in the survey and 2) percentage for simple comparisons were made on the basis of percentage.

RESULTS AND DISCUSSION

Before discussing the main findings of the study, it is obligatory to present the personal attributes of buffalo keepers on which the study was conducted. It is essential to highlight and correlate these traits (Table 2).

Age : The present study revealed that majority (51.00 per cent) were in the middle age group followed by old age (36.00 per cent) (Table 2). These data revealed that majority of the houses were controlled by middle age and older persons. Data indicated that the middle age group had better experience and interest, so they were ready to adopt new innovations without considering the reaction of other ones. The percentage of young age group involved in animal husbandry was smallest. These findings are in conformity with Dhaka *et al.* (2011) and Sharma *et al.* (2012). (Fig. 1).

Education : Education of the respondents is one of the important parameter with respect to adoption of new innovations (Table 2). The present study revealed that 18.00 per cent of respondents were illiterate, 82.00 per cent were literate. This showed that the dairy farmers have realized the importance of education. These findings are in close line with the findings of Akila and Senthivel (2012). (Fig. 2).

Herd size : It belongs to the number of buffalo possessed by the respondents. (Table 2). The analysis of data revealed that 41.00 per cent of the respondents were having medium size herd followed by small herd (36.50 per cent). The data indicated that animal husbandry is the second enterprise after crop production and provide the employment through the year. These findings are in close line with the findings of Paul *et al.* (2015) and Hussain *et al.* (2016). (Fig. 3).

Land holding : The present study revealed that 17.50, 31.50, 21.50, 14.00 and 15.50 per cent of the respondent were falling under landless, marginal, small, medium and large category respectively (Table 2). These findings are in accordance with findings of Sharma *et al.* (2012) who reported that most of dairy farmers were marginal farmers (33.00) per cent

TABLE 1
Selection plan of respondents

Districts	Tehsil	Village	No of respondents
Bhiwani	Loharu	Patwan	25
		Chahar Kalan	25
		Chappar	25
		Adampur Dadhi	25
Sirsa	Rania	Mammer Khera	25
		Kherawala	25
	Sirsa	Bakriyawali	25
		Jodhkan	25

TABLE 2
Distribution of the respondents according to various personal attributes.

S. No.	Variables	Category	Respondents	
			No.	per cent
1.	Age group	Young	25	12.50
		Middle	102	51.00
		Old	73	36.50
2.	Education	Illiterate	36	18.00
		Matric	65	32.50
		Sr.secondary	73	36.50
		Graduation	26	13.00
3.	Herd Size	Small	73	36.50
		Medium	82	41.00
		Large	45	22.50
4.	Land Holding	Landness	35	17.50
		Marignal	63	31.50
		Small	43	21.50
		Medium	28	14.00
5.	Family size	Large	31	15.50
		Small	63	31.50
		Medium	92	46.00
6.	Economic status	Large	45	22.50
		Fair	85	42.50
		Poor	76	38.00
7.	Training Need	Very Poor	39	19.50
		Yes	188	94.00
		No	12	06.00

followed by small farmers (28) per cent and 18 per cent were large farmers. (Fig. 4).

Family size: Overall results showed that 46.00, 31.50 and 22.50 per cent of respondents had medium, small and large family size, respectively (Table 2).. The high number of medium and small size family might be due to division of joint families These are in close line with Hussain *et al.* (2016). (Fig. 5).

Economic status : Income is an important factor that motivates an individual to participate in managing animal husbandry activities. Effective and efficient management can only be possible when the finance is available on hand. If the liquid fund is available, it is easy to take decision for timely procurement of inputs for the management of dairy farm. It was observed that 42.50, 38.00, 19.50 per cent respondents were from fair, poor and very poor

economic class, respectively (Table 2).. These results are similar with findings of Paul *et al.* (2015), Rout and Sankhla (2014) who reported that average annual income of farmers greater than 1.5 lakh. (Fig. 6).

Training need : Training is must in the process of technological change and adoption of innovations. Proper training helps in acquiring more knowledge, developing skills and thereby promotes speedy adoption of improved livestock production technologies which is component of management efficiency. So it was observed that 94.00 per cent respondents needs scientific training while 6.00 per cent respondents did not feel necessity of training (Table 2). These findings were also similar with findings of Jeelani *et al.* (2014) and reported that most of respondents had not received any training regarding improved animal husbandry practices in recent past. (Fig. 7).

Existing feeding practices: The feeding is one of the most important practices in animal husbandry. It is generally agreed that all the animals fail to prove their full genetic potential for higher production when fed at low levels. Keeping in view the above facts, the present study was undertaken with the major objective of carrying out an in-depth analysis of the feeding and management strategies in the buffalo management. (Table 3)

After studying the existing feeding management practices the results (Table 3) showed that 91.50, 6.00 and 2.50 per cent respondents were

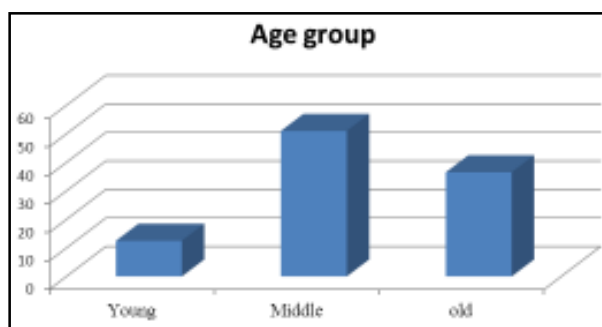


Fig. 1. Distribution of respondents on the basis of their age group.

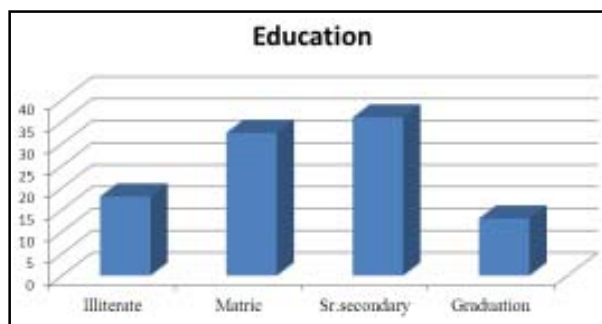


Fig. 2. Distribution of respondents on the basis of their education level.

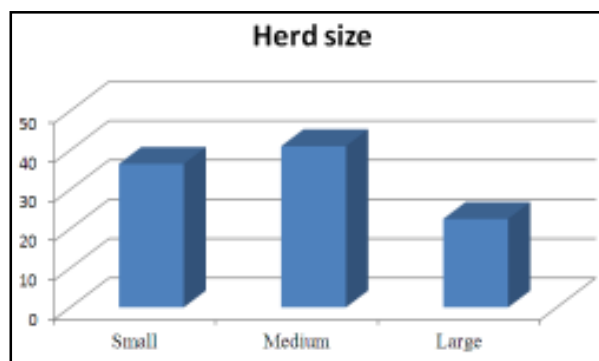


Fig. 3. Distribution of respondents on the basis of their herd size.

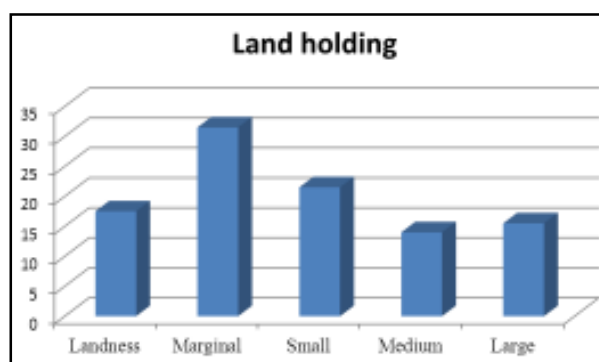


Fig. 4. Distribution of respondents on the basis of their land holding.

using stall feed, both (stall feed + grazing) and only grazing as feeding their buffaloes. These findings are almost similar to that recorded by Sreedhar *et al.* (2011), Manohar *et al.* (2014), Mahla *et al.* (2015), Malsawmdawngliana *et al.* (2016). The data of grazing site revealed that 34.50 per cent of respondents grazed their animals on fallow field and 31.00 per cent of respondents on harvested field and own pasture land, while 34.50 respondents reported to graze the buffalo over common pasture land.

Wheat straw were the main dry fodder followed with Pearl millet straw (*bajrakarbi*) and both (wheat straw + jowar karbi). The dry fodder was chopped by all the respondents in the study. Majority (83.00) per cent of the respondents chopped green fodder. Similar findings were observed by Garg *et al.* (2005) and Gupta *et al.* (2008). About 17 per cent of respondents gave green fodder as such; this might be due to a shortage of labour or ignorance about advantages of giving chopped fodder. Cultivation of green fodder was done by the farmers who had irrigation facilities that are 71.00 per cent in the present study. Majority of the respondents fed green fodder only 2-3 months in monsoon season (July to September) Almost similar findings have also been observed by Garg *et al.* (2005) and Sinha *et al.* (2009).

The results indicated that about half (48.50 per cent) of the respondents fed readymade concentrate

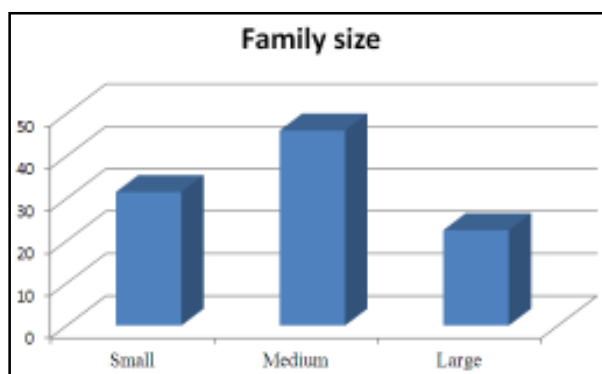


Fig. 5. Distribution of respondents on the basis of their family size.

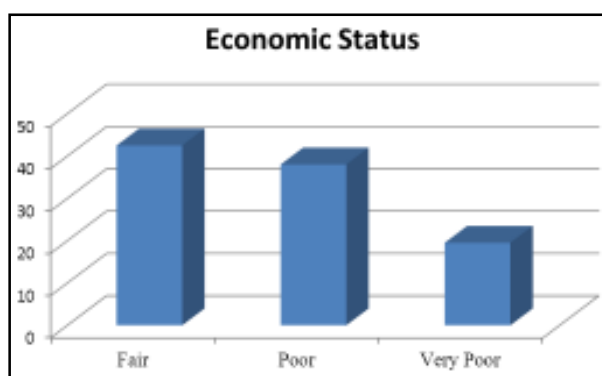


Fig. 6. Distribution of respondents on the basis of their economic status.



Fig. 7. Distribution of respondents on the basis of their training need.

mixture to their animals. Home prepared concentrate mixture constituted crushed grain of bajra, wheat, barley and *guar* mixed with cotton seed cake. Similar findings were observed by Garg *et al.* (2005) and these findings are in contrary to Singh *et al.* (2004).

Regarding pre treatment of concentrate mixture 37.00 per cent of the respondents soaked concentrate mixture before feeding and 63.00 per cent soaked and boiled concentrate mixture before feeding. This finding is in contrary with Rathore *et al.* (2010).

Majority of the buffalo owners (86.50 per cent) were not feeding salt regularly to their animals. Feeding of mineral mixture to buffalo was also not adopted by 61.00 per cent respondents, as they felt it was not

TABLE 3
Existing buffalo feeding management practice adopted in western Haryana

S. No & Existing practices	Frequency	Percentage
1. Feeding of animal		
a. Stall feeding	183	91.50
b. Only grazing	5	2.50
c. Both (stall + grazing)	12	6.00
2. Grazing site		
a. Common pasture land	69	34.50
b. Harvested fields	62	31.00
c. Fallow fields	69	34.50
3. Type of dry fodder		
a. Wheat	158	79.00
b. Bajrakarbi + paddy straw	28	14.00
c. Wheat straw + jawar karbi	14	07.00
4. Chopping of dry fodder		
a. Yes	200	100.0
b. No	00	00.00
5. Chopping of green fodder		
a. Yes	166	83.00
b. No	34	17.00
6. Cultivation of green fodder		
a. Yes	142	71.00
b. No	58	29.00
7. Type of concentrate mixture		
a. Home prepared	49	24.50
b. Readymade	97	48.50
c. Mixture of home prepared and readymade	54	27.00
8. Pretreatment of concentrate mixture		
a. Soaking	74	37.00
b. Soaking and boiling	126	63.00
9. Feeding of common salt		
a. Yes	27	13.50
b. No	173	86.50
10. Feeding of mineral mixture		
a. yes	78	39.00
b. No	122	61.00
11. Preparation of hay and silage		
a. yes	6	3.00
b. No	194	97.00
12. Mode of concentrate feeding to lactating buffalo		
a. At milking time	134	67.00
b. Both at milking time and mixed with fodder	66	33.00
13. Concentrate feeding of advance pregnant buffalo		
a. yes	200	100
b. No	00	00
14. Concentrate feeding of young calf		
a. yes	195	97.50
b. No	5	2.50
15. Concentrate feeding to heifer		
a. Yes	131	65.50
b. No	69	34.50
16. Quantity of concentrate fed to the lactating buffalo per day		
a. 1-2 kg concentrate	5	2.50
b. 2-3 kg concentrate	47	23.50
c. 3-5 kg kg concentrate	128	64.00
d. 1 kg per 2 liters	20	10.00

profitable Only 13.50 per cent respondents fed common salt and only 39.00 per cent of the respondents fed mineral mixture in the ration of buffalo. Very few of the respondents (3.00%) were found to prepare hay and silage in study. These findings of common salt, mineral mixture and preparation of hay and silage are in almost accordance with the results of Sinha *et al.* (2009), Dixit *et al.* (2010), Rathore *et al.* (2010), Manohar *et al.*

(2014), Singh *et al.*(2014), Mahla *et al.*(2015), Patel *et al.*(2016).

Majority (67.00 per cent) of the respondents were feeding concentrate to lactating buffaloes at the time of milking. Only 33.00 per cent of the respondents fed concentrate mixture at both milking time as well as mixed with fodder. The data of concentrate feeding to advance pregnant buffalo was encouraging. All the respondents were feeding concentrate mixture as a special ration to advance pregnant buffaloes. These findings recorded in present study, are in agreement with the reports of Manohar *et al.*(2014), Mahala *et al.*(2015), Malsawmdawngliana (2016).

Majority (97.50 per cent) of the buffalo keepers were feeding concentrate to young calves but only 65.50 per cent of the buffalo keepers were feeding concentrate to heifers. They were not feeding more concentrates to these heifers and these were mostly dependent on grazing and poor quality roughage.

Regarding quantity of concentrate feeding, 23.50 per cent of the respondents fed 2-3 kg/day to lactating buffaloes followed by 64.00 per cent of respondents fed 3-5 kg/day and 10.00 per cent respondents fed 1 kg/2 liters of milk per day. According to Malsawmdawngliana and Rahman (2016) all the respondents practiced stall fed feeding system. About 3 to 5 kg of concentrate per day was fed by 53.00 per cent of the respondents to their lactating cow.

CONCLUSION

By studying the results of this investigation it can be concluded that in order to improve the productivity of buffalo in the study area it is recommended that buffalo keepers should be motivated through training and demonstration for balanced feeding and preparation of balanced concentrate mixture at home. Subsidies on mineral mixture and urea molasses mineral bricks should be provided to enhance these feed additives.

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