

# Feeding Management Practices Adopted by Dairy Buffalo Respondents in Saharanpur District of Western Uttar Pradesh

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**Abstract** A field survey was conducted in Nanauta block of Saharanpur district to evolution the feeding management practices of dairy buffalo animal owners. The data was collected from randomly selected 10 villages from study area. Each village, randomly 05 dairy animal owners were also selected. In third stage, data was collected from 50 animal owners through personal interview with the help of pre-designed and pre-tested questionnaire. The results showed that 86.00 per cent respondents were produced green fodder at own land, 94.00 per cent fed chaffed fodder in ad libitum (86.00%). 76.00 per cent offered wheat straw, 92.00 per cent adopted stall feeding system in individual (86.00%). Most of the respondents offered commercial concentrate mixture (66.00%) with straw and green fodder in two times and respondents also offered extra dose of concentrates during pregnancy and early lactation. Respondents also offered clean and fresh drinking water by hand pump (72.00%) and submersible (22.00%). From, it can be assumed from the findings of the present study that buffalo owners adopted optimal feed management practices.

**Keywords.** Buffalo, concentrates mixture, green and dry fodders and water.

## 1. INTRODUCTION

Buffalo (*Bubalus bubalis*) also known as black gold from India, due to its significance as a main dairy commodity. India is has largest livestock population as well as buffalo in the world. Milky animal's growth capacity depends on the handling activities of breeding, feeding, accommodation, and health care (Saxena et al., (2018). Understanding livestock feeding practices adopted by owners in a region is necessary in order to recognize the strengths and weaknesses of the production systems and to develop effective techniques Balakumar et al., (2008). Scientific feeding estimation and effective use of feed and fodder by-products can be propagated among farmers to improve the farmer's economy in the dairy system Srivastava et al., (2014). The present study was thus taken to assess the feeding practices practiced by the buffalo milk producers in Saharanpur district of west Uttar Pradesh.

## 2. MATERIALS AND PROCEDURES

A field survey was conducted in Nanauta block of Saharanpur district of Uttar Pradesh. Saharanpur district is located in the western part of Uttar Pradesh and it is also a part of a geographical *doab* region. Saharanpur district joins four states together: Himachal Pradesh, Punjab, Uttarakhand and Haryana. In this study, three stages of random sampling procedure were used. In the first stage, Nanauta block was selected purposefully. In the second stage, 10 villages were selected randomly. In the third stage, 05 dairy buffalo owners were also randomly selected from each selected village. That made up 50 respondents in total. Due feeding management practice was taken while selecting the respondents to ensure that they were distributed evenly in the village and truly represented the prevailing dairy feeding management practices in the study area. The selected dairy buffalo owners were interviewed, and collected feeding management practices for dairy buffalo with the help of pre-designed and pre-tested questionnaire were desired information. The generated data was tabulated and analysed to draw meaningful inference according to standard statistical tools like frequency and percentage.

## 3. RESULTS AND DISCUSSION

It was recorded that all the respondents followed almost the similar feeding practices for their dairy animals under study area. The data provided in Table 1 showed that 86.00 per cent respondents were produced green fodder and only 14.00 per cent respondents were not produced green fodder for their dairy animals. The results of study are comparable with Reddy *et al.* (2017) noted that in commercial milk producers (100 %) and small farmers (97 %) output of green fodder for feeding their buffaloes was higher than in landless milk producers (13 %). The maximum rate of adoption of green fodder production in the study area may be due to the flexible availability of irrigation sources for fodder crops. In study area, majority of respondents (94.00%) always offered chaffing fodder, while only 6.00 per cent respondents were not adopted fodder chaffing practices. It was nearer to the findings in previous studies Dantare (2013). He recorded 85.55 percent animal owners were offered green fodder after chaffing and 14.45 per cent not adopted chaffing practice. The higher percentage of adoption of chaffing of green fodder in study area might be due to proper utilization of fodder and good financial condition for buying chaff cutter Vaid *et al.*, (2014); Chaudhary and Singh (2012); Patel, S. (2012).

It was noticed 86.00 per cent of animal owners followed *ad libitum* feeding system and only 14.00 per cent animal owners followed restricted feeding system their animals. The results are near to Dantare (2013). Who recorded maximum percentage (68.70 %) of farmers follow *ad libitum* for roughages and rest of respondents (31.30%) followed restricted feeding system. This kind of animal feeding depended on animal owner's socio-economic and available quantity. Majority (76.00%) of animal respondents were used wheat straw as dry fodder for animal followed by paddy straw (10.00 %), other resources (6.00%), maize stover (4.00%), sorghum stover and leguminous (2.00 %). The higher rate of wheat straw in the study area provided to dairy animals may be attributed to increased wheat cultivation and crop production. The study is opposite to Reddy *et al.* (2017) found that paddy straw was the major source of dry fodder for feeding of buffaloes because paddy is the main food crop in the study area Nagpal *et al.*, (2012); Sharma *et al.*, (2012); Singh *et al.*, (2017); Ansari *et al.*, (2016).

It was found that 86.00 percent of respondents followed the individual feeding method for green and dry fodder and only 14.00 per cent respondent adopted common or groups feeding system. The findings, however, run counter to the findings reported by

Reddy *et al.* (2017). Who reported that 94.00 per cent of animal owners adopted individual feeding system and 6.00 per cent animal owners followed grouped feeding system for their animals.

Silage processing and urea roughage treatment were not performed in the study field. That correlated with previous studies (Sinha *et al.*, 2009 and Rathore *et al.*, 2009 and Reddy *et al.*, 2017). Silage making and urea treatment of roughages practices might not be follow due to bulky quantity of green and dry fodder availability in study area.

In response of grazing practices, 2.00 and 6.00 percent farmers were found to be sending their animals out for grazing regular and occasional and 92.00 per cent animal owners were not allowed to their animals for grazing. The results of present study are comparable with Munishkuma *et al.* (2005) recorded that only 15 per cent of Nili-Ravi buffaloes owners were adopted grazing practice and while 85.00 per cent buffalo owners were not allowed grazing their animal outside.

It was recorded that majority (66.00 %) of the respondents fed commercial concentrates mixture and 34.00 per cent animal respondents fed homemade concentrates mixture for their animals. The results of present study are agreement with Deoras *et al.* (2004) and Reddy *et al.* (2017). They noted maximum animal respondents purchased commercial concentrate mixture for animal feeding purpose. It may be due to animals owners not have proper information of feed formulations.

Straw and green plus concentrate was found to be the common concentrate feeding mode followed by a majority (38.00 per cent) of farmers. Straw plus concentrate, water plus concentrate, and dry concentrate were 34.00, 12.00, 10.00, and 6.00 per cent of sample households, respectively. The study findings are in line with Dantare (2013). They found that the majority of farmers (77.04%) followed straw plus concentrate feeding techniques. This technique and practices called *Sanai* in local language Jnawali (2016); Mishra (2018); Pudake (2013); Singh (2015); Gupta *et al.*, (2014)..

It was found that the highest number of households (50.00 per cent) gave two times roughage feeding per day. There were, 46.00 per cent of farmers who adopted the custom of feeding three times a day and quite the opposite, *i.e.* one-time feeding was also reported in 4.00 per cent households and no one households gave more than three-fold roughages in the study area. The results of present study are agreement with Dantare (2013) noted 62.29 per cent animal offered two times of roughage and 31.44 per cent fed three times .

Proper roughage feeding and feeding timing are very important consideration when controlling feeding activity. The popular roughage feeding routine was adopted at 18.00, 10.00, 6.00, 34.00, 14.00 and 18.00 per cent early in the morning, late in the afternoon, late in the evening, early in the morning plus early in the morning plus late in the evening. Similar, results recorded by Dantre (2013) recorded 45.76 per cent respondents fed their animal early morning plus late light. The data revealed that 78.00 per cent animal respondents offered green fodder seasonally and only 22 per cent throughout the year. The results are line in Dhiman (1988) and Dantare (2013). They recorded maximum percentages of animal owners were offered green according to season availability.

At only 18.00 in the study area, supplementation of the mineral mixture in the feed was practiced which is comparable to the finding of Kumaon Himalaya (Malik *et al.*, 2005). The low utilization rate of mineral mixture supplementation in feed may also be due to lack of knowledge of the importance of mineral mixture among rural farmers in the study area. Salt was offered to their animals by the majority of farmers (78.00 %) through feed / water / chapatti and 22.00 percent rest did not feed salt either via feed or chapatti in the study region. The results are similar to Dantare (2013) recorded most of animal owners (58.44%) fed by common salt. The higher rate of common salt adoption in the feed could be due to knowledge of salt value, low cost, and easy availability in the study area's local market.

It was found that the majority of buffalo owners (42.00%) just after milking offered concentrate mixtures, 30 per cent before milking low, and 28.00 percent at milking time. It correlated with the study results of Singh *et al.* (2010) and Reddy *et al.* (2017). The 46.00 and 58.00 per cent of respondents introduced extra emphasis feeding during advanced pregnancy and early lactation, respectively. It was almost consistent with the results of Reddy *et al.* (2017) which reported that 83.20 and 98.40 per cent of farmers received additional rationing for advanced pregnant and early lactation animals. Similar finding also recorded by Kumar and Mishra (2011) reported that 92.50 per cent of farmers received extra ration for advanced pregnant animals.

The data showed that majority of animal owners (46.00%) fed jiggery (gur) to their animals especially in winter season and 4.00 per cent animal respondents were not fed jiggery any season. The results are comparable with Dantare (2013) who found that approximately 72.16 per cent of farmers did not feed their animals with gur (molasses). It was recorded that majority of animal owners (72.00 %) provided drinking water to buffaloes from hand pump, 22.00 per cent by tube well (submersible), whereas, 4.00 per cent animal owners provided water by other sources and only 2.00 per cent respondents supplied drinking water to buffaloes from canal. It was in agreement with the previous studies (Malik *et al.*, 2005; Ahirwar *et al.*, 2010; Reddy *et al.*, 2017).

#### 4. CONCLUSION

It can be inferred that most respondents fed seasonal chaffed green fodder to individual buffaloes in *ad libitum*. Most of the animal owners used commercial concentrate along with straw and green fodder in two times at early morning plus late night. Concentrate mixture provided during advanced pregnancy and early lactation, even after milking. From the results of present study it can be recommended that buffalo owners followed optimum feed management practices.

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**Table 1. Feeding management practices followed by buffaloes respondents in Saharanpur.**

Particulars	Variables	Frequency	Per cent
Green fodder production	Yes	43.00	86.00
	No	7.00	14.00
Chaffing of fodder	Yes	47.00	94.00
	No	3.00	6.00
Types of Roughage feeding	Restricted	7.00	14.00
	<i>Ad libitum</i>	43.00	86.00
Feeding dry fodder	Wheat straw	38.00	76.00
	Paddy straw	5.00	10.00
	Maize stover	2.00	4.00
	Sorghum stover	1.00	2.00
	Leguminous	1.00	2.00
	Others	3.00	6.00
Method of feeding green/dry fodder	Individual	43.00	86.00
	Groups	7.00	14.00
Silage making	Yes	0.00	0.00
	No	50.00	100.00
Hay making	Yes	6.00	12.00
	No	44.00	88.00
Urea treatment of roughages	Yes	0.00	0.00
	No	50.00	100.00
Grazing of buffaloes	Yes (Regular)	1.00	2.00
	No	46.00	92.00
	Occasional	3.00	6.00
Concentrate mixture	Home made	17.00	34.00
	Commercial	33.00	66.00
Mode of concentrate feeding	Dry crumble/ mash concentrate	3.00	6.00
	Water + concentrate	6.00	12.00
	Straw + concentrate	17.00	34.00
	Green fodder+ concentrate	5.00	10.00
	Straw + Green+ concentrate	19.00	38.00
Feeding frequency of fodder	One time	2.00	4.00
	Two time	25.00	50.00
	Three time	23.00	46.00
	More than three times	0.00	0.00
Feeding timing of	Early morning	9.00	18.00

<b>roughage</b>	Just afternoon	5.00	10.00
	Late night	3.00	6.00
	Early morning+ Late night	17.00	34.00
	Just afternoon + Late night	07.00	14.00
	Morning +Afternoon +Late night	9.00	18.00
<b>Green fodder feeding during the day</b>	Throughout the year	11.00	22.00
	Seasonal	39.00	78.00
<b>Supplementation of mineral mixture to the feed</b>	Yes	8.00	18.00
	No	42.00	84.00
<b>Supplementation of common salt in the feed</b>	Yes	39.00	78.00
	No	11.00	22.00
<b>Time of concentrate feeding</b>	Before milking	15.00	30.00
	At milking	14.00	28.00
	After milking	21.00	42.00
<b>Extra concentrate feeding during advanced pregnancy</b>	Yes	23.00	46.00
	No	27.00	54.00
<b>Extra concentrate during early lactation</b>	Yes	29.00	58.00
	No	21.00	42.00
<b>Provision of jiggery feeding</b>	Yes	39.00	46.00
	No	11.00	22.00
<b>Source of drinking water</b>	Hand pump	36.00	72.00
	Tube well (Submersible)	11.00	22.00
	Canal	1.00	2.00
	Other	2.00	4.00