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**Deepak Singh**

Department of Animal  
Production, Rajasthan College of  
Agriculture, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Lokesh Gupta**

Department of Animal  
Production, Rajasthan College of  
Agriculture, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Gaurav Singh**

Department of Animal  
Production, Rajasthan College of  
Agriculture, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Dashrath Singh Chundawat**

Department of Animal  
Production, Rajasthan College of  
Agriculture, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Dheeraj Kumar**

Department of Animal  
Production, Rajasthan College of  
Agriculture, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Deepak Kumar**

Department of Animal  
Husbandry & Dairying, Chander  
Shekhar Azad University of  
Agriculture & Technology,  
Kanpur, Uttar Pradesh, India

**Corresponding Author:**

**Deepak Singh**

Department of Animal  
Production, Rajasthan College of  
Agriculture, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

## Feeding practices followed by dairy farmers of Chittorgarh district of Rajasthan

**Deepak Singh, Lokesh Gupta, Gaurav Singh, Dashrath Singh Chundawat,  
Dheeraj Kumar and Deepak Kumar**

### Abstract

Dairy farming plays an important role in social and economic livelihood of the Chittorgarh dairy farmers. The present study was conducted in Chittorgarh district of Rajasthan. Three tehsils namely Dungla, Badi Sadri, Chittorgarh were selected and from each tehsil two villages selected and from each village 30 respondents who possess minimum five dairy animals were selected. The data was collected from 180 dairy farmers with the help of a well- structured pre-tested interview schedule by personal interview. The study revealed that majority (58.89%) of the respondents practiced Semi stall feeding system and 76.67 percent are feeding the green fodder to their dairy animals. Majority of (58.89%) the farmers were chopping the green fodder and 55.69% of respondents preserving green fodder as a hay and silage (44.31%). Majority of (42.78%) respondents were feeding kadabi and wheat straw (29.44%) as a dry fodder. Majority of (41.67%) respondents feeding concentrate after the milking. 45.56% of the respondents were feeding concentrate 2-3 kg/day and 27.22 percent respondents offering >60 gm mineral mixture to their dairy animals. 66.33% of respondents provided water two time in a day and 42.22% of respondents using well/tubewell as a main source of drinking water.

**Keywords:** Feeding practices, respondents, dairy farmers, Chittorgarh

### Introduction

Livestock plays an important role in Indian economy. India has world's maximum dairy herd. India ranks first in the world in terms of milk production since last many years. The livestock farming provides self-employment, beneficiary income and a nutritious health to the society in rural as well as urban areas. India possesses 535.8 million of total livestock population with an increase of 4.6% over the 2012 livestock census. The total number of cattle in the country is 192.5 million, showing an increase of 0.8% over the previous Census. The total buffaloes in the country are 109.9 million and showing an increase of about 1.1% over previous Census (20th livestock Census, G.O.I -2019) <sup>[1]</sup>. India has emerged as the largest producer of milk with 20.17 percent share in total milk production in the world. Milk production during 2020-21 and 2021-22 is 210.0 million tonnes and 221.1 million tonnes respectively showing an annual growth of 5.29 percent (DAHD, 2021-22). Among the livestock products, milk consists of the highest share, and it accounted for 67.20 percent of the livestock sector in 2017. Moreover, milk and milk products contributed more than 20.60 percent of the combined output of paddy, wheat and pulses in 2017. Annually, 8.4 million farmers depend on the dairy sector for their livelihoods, out of which 71 percent are women (Agriculture Skill Council of India). Approximately 70% of the overall cost of producing milk goes towards feeding, making it a crucial component of dairy farming. Dairy cows and buffaloes are fed a variety of substances in their diets, such as concentrates such compound cattle feed, oil cakes, cereals and their byproducts, such as brans, cultivated green fodders, grasses, and agricultural leftovers like straws. The cornerstone of successful and productive animal husbandry is balanced diet. Animals cannot reach their full genetic potential or function well in the field without sufficient nutrients. A nutritional imbalance or shortage may be the cause of decreased milk production, low reproductive rates, poor growth, and an increase in disease. For animals to operate at their optimum, their diets must have the right amounts of protein, energy, vitamins, and minerals. Hence, the present investigation was undertaken to study feeding practices followed by the dairy animal owners in Chittorgarh.

## Materials and Methods

The study was conducted in the Chittorgarh district of Rajasthan. Three tehsils (Dungla, Badi Sadri, Chittorgarh) were selected from district. Two villages were selected from each tehsil and from each village 30 respondents who possess minimum five dairy animals were selected. The data was collected from 180 dairy farmers with the help of a well-structured pre-tested interview schedule by personal interview. The collected data were analysed by using simple statistical methods like frequency, percentage, mean, standard deviation as follows:

### Percentage and frequency

This approach involved determining the percentage and frequency distribution of dairy farmers, allowing for the categorization of dairy farmers concerning.

### Mean

Mean is nothing but the average of the given set of values. It denotes the equal distribution of values for a given data set.

### Standard deviation (S.D)

The standard deviation measures the absolute dispersion of variability of distribution. Here mean and standard deviation were used for categorization of respondents in different categories.

$$s = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}}$$

Where:

S = Standard deviation

n = Sample size

$\sum X_i$  = Sum of total scores in sample

$\sum X_i^2$  = Sum of squares of score of each respondent in sample

## Results and Discussion

Data presented in Table 1, it could be inferred that majority of the respondents adopted semi stall feeding (58.89%) followed by stall feeding (37.78%) and complete grazing (3.33%). From the findings shown in Table 1, it indicated that the majority (76.67%) of the respondents used to feed green to their animals and 58.59 percent of the respondents used to chopping of green fodder before the feeding to their animals in the study area. This finding is in line with Jadav *et al.*, (2014) [3] who reported that dairy farmers followed chaffing of green fodder (76.00 percent) in Surat district in Gujarat. The data presented in Table 1 clearly shows that out of 180

respondents, 57.78 percent respondents were preserving the excess green fodder and among of them 55.69, 44.31 percent of respondents were preserving the excess green fodder as hay and silage, respectively. All the respondents (100.0 percent) used to feed the dry fodder to their animals and majority of 42.78 percent respondents feed the kadabi as dry fodder to their animals followed by 29.44, 27.78 percent wheat straw and other (mixed) as dry fodder and 37.78 percent of respondents were always used to chop the dry fodder before to feeding their animals followed by never and sometimes with, 37.22 percent, 25.0 percent, respectively. Only, 11.11 percent of respondents used to treat the dry fodder. The data incorporated in Table 1 clearly shows that all the respondents (100.0 percent) were feeding the concentrate to their lactating animals and majority, 41.67 percent of them were offering the concentrate to their lactating animals after milking followed by 32.22 and 26.11 percent of the respondents fed concentrate mixture prior to milking and during milking time, respectively. Feeding of concentrate after milking was in agreement with the findings of Sabapara *et al.* (2010) [7], Jadav *et al.* (2014) [3] who reported that concentrate feeding to the animals after milking was practiced by 91.0 percent of farmers. It indicated that the time of concentrate feeding to milch animals varied from region to region in the country. The data incorporated in Table 1 clearly shows that overall, 45.56 percent of respondents were feeding 2-3 kg concentrate per day to their animals and followed by more than 3 kg per day, 1-2 kg per day with, 42.22, 12.22 percent respectively. Similar findings were noted by Mahendra *et al.* (2007) [4] who reported that over two-third of respondents fed 2-4 kg concentrate to lactating animals per day in Rajasthan.

It was observed from Table 1 that out of 180 respondents in study area, only 50.0% of respondents were feeding mineral mixture to their animals. Majority of 27.22 percent of the respondent were offering more than 60 gm mineral mixture to their animals followed by 40-60 gm and less than 40 gm with, 21.11, 1.66 percent respectively. Supplementation of mineral mixture in the feed was practiced by overall 50.0 percent in the study area. It was nearer to the observations of Jadav *et al.* (2014) [3] and Manohar *et al.* (2014) [6] who reported that farmers in their study areas provided mineral mixture to the animals but the level of adoption was varied. It was concluded from Table 1 that 42.22 percent respondents were using the well/ tube well as source of water and 63.33 percent of respondents providing water twice in 24 hrs. These results were in agreement with the findings of Malik *et al.* (2005) [5], Jadav *et al.* (2014) [3] who reported that majority of farmers used bore well/pump as a source of drinking water in the study area.

**Table 1:** Feeding practices followed by the dairy farmers

S. No	Existing practices	Respondents (n=180)	
		Frequency	Percentage
<b>A.</b>	<b>Feeding practices</b>		
1.	How do you manage feeding of dairy animals?		
	(i) Stall feeding	68	37.78
	(ii) Semi stall feeding	106	58.89
	(iii) Complete grazing	6	3.33
2.	<b>Do you feed green fodder to dairy animals?</b>		
	(i) Yes	138	76.67
	(ii) No	42	23.33
3.	<b>Do you chop the green fodder before feeding to dairy animals?</b>		
	(i) Yes	106	58.89
	(ii) No	74	41.11
4.	<b>Do you preserve the excess green fodder?</b>		
	(i) Yes	104	57.78
	(ii) No	76	42.22
	<b>If yes how you preserve green fodder: -</b>		
	(i) Hay	58	55.69
	(ii) Silage	46	44.31
5.	<b>Do you feed dry fodder to dairy animals?</b>		
	(i) Yes	180	100.00
	(ii) No	0	0
	<b>If yes then which type of dry fodder you fed to animals?</b>		
	(i) Wheat straw	53	29.44
	(ii) Kadabi	77	42.78
	(iii) Other (Mixed)	50	27.78
6.	<b>Do you chop the dry fodder before fed to dairy animals?</b>		
	(i) Always	68	37.78
	(ii) Sometime	45	25.00
	(iii) Never	67	37.22
7.	<b>Do you treat the dry fodder before feeding to dairy animals?</b>		
	(i) No	160	88.89
	(ii) Yes	20	11.11
8.	<b>Do you feed concentrate to dairy animals?</b>		
	(i) Yes	180	100.00
	(ii) No	0	0
9.	<b>Which time is preferred for feeding of concentrate to dairy animals?</b>		
	(i) After milking	75	41.67
	(ii) Prior to milking	58	32.22
	(iii) During milking	47	26.11
10.	<b>How much quantity of concentrate fed to dairy animals?</b>		
	(i) 1-2 kg/ day	22	12.22
	(ii) 2-3 kg/ day	82	45.56
	(iii) More than 3 kg/ day	76	42.22
11.	<b>Do you feed mineral mixture to dairy animals?</b>		
	(i) Yes	90	50
	(ii) No	0	0
	<b>If yes how much quantity of mineral mixture fed to dairy animals?</b>		
	(i) < 40 gm	3	1.67
	(ii) 40-60 gm	38	21.11
	(iii) >60 gm	49	27.22
12.	<b>Which source is used for drinking water of dairy animals?</b>		
	(i) Pond	43	23.89
	(ii) Well / Tube well	76	42.22
	(iii) Tap water	61	33.89
13.	<b>How many times do you provide water to your animals per day?</b>		
	(i) Once in 24 hrs	30	16.67
	(ii) Twice in 24 hrs	114	63.33
	(iii) Thrice in 24 hrs	36	20.00

n=number of respondents

**Conclusion**

It could be concluded that, majority of the dairy farmers adopted semi stall of feeding system and used to feed green fodder, concentrate, mineral mixture to their dairy animals. Majority of farmers fed chaffed green fodder and preserving

excess green fodder as hay and silage. Main source of drinking water for animals was well/ tubewell.

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