

Assessment of Feeding Practices followed by Dairy Farmers in Hadoti (humid South Eastern Plain) Region of Rajasthan

Deepak Kumar^{1*}, Ved Prakash¹, Kamla Mahajani², Anita Kumari Meena³,
Dheeraj Kumar³ and Deepak Singh³

¹Department of Animal Husbandry & Dairying,

Chander Shekhar Azad University of Ag. & Tech., Kanpur (Uttar Pradesh).

²Department of Food science and Nutrition, MPUAT, Udaipur (Rajasthan), India.

³Department of Animal production, MPUAT, Udaipur (Rajasthan), India.

(Corresponding author: Deepak Kumar*)

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ABSTRACT: The present study was conducted to analyse the feeding practices followed by the dairy farmers in Hadoti region of Rajasthan. Three districts namely Kota, Bundi and Baran were selected, further three blocks from selected district and five villages from each selected blocks were randomly elect for study. Total 225 Dairy farmers were randomly selected for well-structured and pre-tested interview schedule. Study revealed that majority (71.11%) of respondents practiced stall feeding and 63.11% are feeding milch animals in group. Majority of the respondents (96%) practiced to cultivation of green fodder and half (50.67%) of the respondents used only wheat straw as a dry source of fodder. Majority (48.89 %) of respondents fed both homemade and compounded cattle feed and 47.56% feeding their livestock based on milk production. Majority (52.44%) of the respondents feeding of green fodder after chaffed and 47.56 % of respondents were feeding fodder as such. Majority (60.89%) of the respondents were feeding of dry fodder as chaffed forum. Majority (52%) of respondents feeding concentrate during milking. 64% of the respondents fed concentrate after soaking in water and 74.22% of the respondents don't provide extra concentrate to advanced pregnant heifers and 79.11 % of the farmers did not practiced of feeding salt. 80.84% of respondents provided water two times in a day.

Keywords: Hadoti, Feeding, Practices, Respondents, Dairy farmers.

INTRODUCTION

The Indian economy is heavily dependent on agriculture and livestock. The livelihood of almost 20.5 million people depends on cattle. India a nation of villages, with around 70% of its inhabitants residing in rural areas of which 34% are considered to be below the poverty line. Additionally, it employs around 8.8% of India's population. India has a tremendous supply of cattle. According to ICFA's projections for 2022, the livestock industry accounts for 25.6% of all agricultural GDP and 4.11% of the country's overall GDP. Livestock may be used to solve concerns like poverty reduction, nutritional security, rural employment, women's empowerment, etc. in agriculture. Agriculture and livestock production are intertwined, mutually reliant and essential to ensuring global food security. The Indian economy's agriculture sector includes the livestock sector as a significant subsector. In the last few decades, milk production in India has advanced significantly. India now produces 221.1 million tonnes from 146.31 million tonnes annually in 2014-15, the most milk production in the world (Ministry of Fisheries Animal Husbandry & Dairying, GOI, 2023). India's top agricultural export is milk, which accounts for 18% of the country's total agricultural sector's gross value. The main objective of improved Animal Husbandry practices is to increase the milk production

in country and uplift the poor and weaker sections of rural community. Animal husbandry is a significant source of income for rural populations, particularly in Rajasthan. The growth of the livestock industry has a considerable positive effect on creating jobs and eliminating poverty in rural regions. This industry is regarded as the main driver of social and economic development, particularly in rural areas. More than 80% of rural families maintain animals as part of their diet. According to estimates, the animal husbandry sector contributes around 9.16% of the State's GDP. Dairy and animal husbandry provide small and marginal farmers with about 35% of their income (Government of Rajasthan, 2010).

Feeding practices play a major role in performance and productivity of Dairy and livestock-based enterprise. Understanding the livestock management practices followed by farmers is necessary to identify the strengths and weaknesses of the rearing systems and to formulate suitable intervention policies (Gupta *et al.*, 2008).

MATERIALS AND METHODS

Information pertaining to farmer's adoption pattern regarding housing practices for dairy animals were collected from three districts in Hadoti region of Rajasthan namely Kota, Bundi and Baran. Three blocks

from each district, five villages from each elected blocks and five dairy farmers from each village were randomly selected for study, thus a total of 225 dairy farmers (75x3) were selected. The selected respondents were interviewed personally with the help of a well-structured and pre-tested interview schedule.

RESULT AND DISCUSSIONS

A. Feeding System

The study revealed that majority (71.11%) of respondents practiced stall feeding followed by (26.67%) both (stall and grazing) and 2.22% only grazing of animals in the study area. The present results are in conformity with the finding of Kumar *et al.* (2019); Manohar *et al.* (2014); Gupta *et al.* (2008) and contrary with the findings of Kumar *et al.* (2017).

B. Feeding of Milch Animal

It was observed that 63.11% of respondents followed group feeding and 36.89% practiced individual feeding of their animals. The similar results were also reported by Prajapati *et al.* (2021), they found that the majority (71.87 per cent) of the respondents fed their animals in groups, while 28.12% of the buffalo keepers fed their animals individually in Jaipur district of Rajasthan. These findings are also in accord with the results of Rathore *et al.* (2010); Rangamma *et al.* (2013); Manohar *et al.* (2015).

C. Cultivation of Green Fodder

It was found that 96% of farmers were practicing cultivation of green fodder and 4% of respondents were not cultivating green fodder. The findings of the study are supported by the result of Kour and Toor (2022) in Punjab, Kumar *et al.* (2019) in western Uttar Pradesh, Prajapati *et al.* (2021) in Madhya Pradesh and Manohar *et al.* (2014) in Jaipur district of Rajasthan

D. Types of Dry Fodder feeding

It was noted that majority (50.67%), of respondents fed wheat straw, 28.44% paddy straw and 20.89% fed mixed paddy, wheat, jowar, legume and maize straw as source of dry fodder. The results of present study are comparable with Kumar *et al.* (2020); Sourav *et al.* (2023), they observed that majority of dairy farmers use wheat straw as a main source of dry fodder.

E. Types of Concentrate Feeding

It was found that majority (48.89%) of respondents fed both homemade and compounded cattle feed followed by compounded cattle feed only (30.67%) and homemade cattle feed (28.44%) in the study area. The present findings are in line with findings of Kumar *et al.* (2019) in Sharnpur district of Uttar Pradesh, Sourav *et al.* (2023) in north Bihar and Choudhary *et al.* (2019) in different districts of Haryana.

F. Feeding Criteria Followed

It was observed that majority (47.56%) of respondents practiced feeding based on milk production, 25.78% had no criteria, 15.56% considered age and 11.11% took into account body weight as basis for feeding. The present findings are in line with the findings of Sivaji *et al.* (2018); Kumar *et al.* (2019), they found that majority of

respondents feeding their animals according to milk production. The present findings are contrary with the findings of Prajapati *et al.* (2021), that the majority (66.67%) of buffalo owners feeding their animals according the body weight while remaining 33.33 per cent farmers do green feeding based on the milk yield of the buffaloes in Firozabad district of Uttar Pradesh.

G. Feeding forum of Green Fodder

It was found that majority (73.33%) of the respondents were following feeding of green fodder as such followed by 26.67% of respondents were feeding chaffed fodder in the study area. The results are accordance with the findings of Manohar *et al.* (2014); Choudhary *et al.* (2017); Sourav *et al.* (2023) in their respective study region.

H. Feeding forum of Dry Fodder

It was observed that majority of the respondents (60.89%) were practicing feeding of dry fodder as such, 20.44% chaffed and 18.67% mixed with chunnies. These results are in agreement with the findings of Kumar *et al.* (2019), they reported that 19% respondents fed dry fodder as such while 66.50% fed after chaffed in western Uttar Pradesh and Gupta *et al.* (2008), who reported that 79.30 percent of farmers adopted chaffing of dry fodder practice. However, present findings are contrary to the results of Meena *et al.* (2008); Sabapara *et al.* (2010) in their survey area.

I. Time of Feeding Concentrate

It was observed that majority (52%) of respondents practiced feeding of concentrate during milking, 43.56% before and 4.44% after milking. The present findings are in line with findings of Yadav *et al.* (2021) in Bhilwara district of Rajasthan, Benidir *et al.* (2017) semi-arid region of Algeria and Jatolia *et al.* (2018) in Udaipur district of Rajasthan.

J. Feeding Form of Concentrate

It was found that majority (64%) of the respondents fed concentrate after soaking in water and 36% practiced dry form of concentrate. Present results are in agreement with the findings of Choudhary *et al.* (2019) in Hariyana cattle, comparatively low then the findings Sekhar *et al.* (2017) who found that all respondents soaked the concentrate before feeding and contrary with the finding of Tiwari (2013) who reported that majority of farmers adopted the practice of feeding cooked form of concentrate to their animals.

K. Feeding of Concentrate to Advanced Pregnant Heifers

The present study revealed that majority (74.22%) of the respondents not practiced extra concentrate to advanced pregnant heifers and 25.78% of the respondent fed extra concentrate to advanced pregnant heifers. The lower rate of adoption of this practice might be due to lack of awareness about the importance of good feeding during advanced pregnancy and early lactation. The results are similar to the result of Sekhar *et al.* (2017); Shitole *et al.* (2009) who observed that lower number of the farmer provided additional ration for pregnant animals in their study area. These findings contrary with the findings of Manohar *et al.* (2014).

L. Feeding of Mineral Mixture

It was found that majority (91.56 %) of the farmers not practiced to offer mineral mixture and 8.44 % of respondents offer mineral mixture for their animals. The present findings are in contract with the findings of Prajapati *et al.* (2021); Kumar *et al.* (2020); Choudhary *et al.* (2019); Manohar *et al.* (2014); Lavania *et al.* (2014).

M. Feeding of Salt

It was noticed that majority (79.11 %) of the farmers did not practice feeding of salt and 20.89 % of respondents feeding salt to their animals. The present findings are in

line with findings of Benidir *et al.* (2017); Kumar *et al.* (2019); Yadav *et al.* (2021).

N. Frequency of Watering

It was found that majority (80.84%) of respondents provide water two times a day, 11.56% provide free access of water and 8% three times in a day. The present findings are in accordance with findings of Roy and Meena (2020); Sourav *et al.* (2023) and contrary with the findings of Kumar *et al.* (2019) that they found that majority of dairy farmers provide three-time water for their animals in western Uttar Pradesh.

Table 1: Feeding management practices of Dairy farmers in Kota, Bundi and Baran districts of Rajasthan (n=225).

Sr. No.	Particulars	Unit	Kota	Bundi	Baran	Overall
		%	(75)	(75)	(75)	(225)
1.	Feeding system					
(a)	Stall feeding	%	70.67(53)	62.67(47)	80(60)	71.11(160)
(b)	Grazing	%	2.67(2)	4(3)	0(0)	2.22(5)
(c)	Both	%	26.67(20)	33.33(25)	20(15)	26.67(60)
2.	Feeding of milch animal					
(a)	Individual	%	30.67(23)	42.67(32)	37.33(28)	36.89(83)
(b)	Group feeding	%	69.33(52)	57.33(43)	62.67(47)	63.11(142)
3.	Cultivation of green fodder					
(a)	Yes	%	94.67(71)	97.33(73)	96(72)	96(216)
(b)	No	%	5.33(4)	2.67 (2)	4(3)	4(9)
4.	Types of Dry fodder feeding					
(a)	Paddy straw	%	22.67(17)	32(24)	30.67(23)	28.44(64)
(b)	Wheat straw	%	49.33(37)	46.47(35)	56(42)	50.67(114)
(c)	Paddy straw + wheat straw + Jowar straw +Maize straw	%	28(21)	21.33(16)	13.33(10)	20.89(47)
5.	Types of concentrate feeding					
(a)	Home made	%	21.33(16)	29.33(22)	34.6(26)	28.44(64)
(b)	Compounded cattle feed	%	30.67(23)	25.33(19)	36(27)	30.67(69)
(c)	Both	%	48(36)	45.33(34)	29.33(22)	48.89(92)
6.	Feeding criteria followed					
(a)	Body weight	%	10.67(8)	9.33(7)	13.33(10)	11.11(25)
(b)	Milk production	%	41.33(31)	46.67(35)	54.67(41)	47.56(107)
(c)	Age	%	14.67(11)	17.33(13)	14.67(11)	15.56(35)
(d)	No criteria	%	33.33(25)	26.67(20)	17.33(13)	25.78(58)
7.	Green fodder fed					
(a)	As such	%	26.67(20)	30.67(23)	22.67(17)	26.67(60)
(b)	Chaffed	%	73.33(55)	69.33(52)	73.33(58)	73.33(165)
8.	Dry fodder fed					
(a)	As such	%	22.67(17)	24(18)	14.67(11)	20.44(46)
(b)	Chaffed	%	58.67(44)	62.67(47)	61.33(46)	60.89(137)
(c)	Chaffed+ soaked in water/mixed with chunnis etc.	%	18.67(14)	13.33(10)	24(18)	18.67(42)
9.	Time of feeding concentrate					
(a)	Before milking	%	42.67(32)	38.67(29)	49.33(37)	43.56(98)
(b)	During milking	%	50.67(38)	58.67(44)	46.67(35)	52(117)
(c)	Any time	%	6.67(5)	2.67(2)	4(3)	4.44(10)
10.	Feeding form of concentrate					
(a)	Dry	%	41.33(31)	37.33(28)	29.33(22)	36(81)
(b)	After soaking	%	58.67(44)	62.67(47)	70.67(53)	64(144)
11.	Feeding of concentrate to advanced pregnant heifers					
(a)	Yes	%	21.33(16)	29.33(22)	26.67(20)	25.78(58)
(b)	No	%	78.67(59)	70.67(53)	73.33(55)	74.22(167)
12.	Feeding of mineral mixture					
(a)	Yes	%	6.67(5)	9.33(7)	10.67(8)	8.44(19)
(b)	No	%	93.33(70)	92(69)	89.33(67)	91.56(206)
13.	Feeding of salt					
(a)	Yes	%	22.67(17)	18.67(14)	21.33(16)	20.89(47)
(b)	No	%	77.33(58)	81.33(61)	78.67(59)	79.11(178)
14.	Frequency of Watering					
(a)	2 times	%	80(60)	77.33(58)	84(63)	80.44(181)
(b)	3 times	%	13.33(10)	10.67(8)	10.67(8)	11.56(26)
(c)	free assess of water	%	6.67(5)	12(9)	5.33(4)	8(18)

SUMMARY AND CONCLUSION

It can be concluded that the adoption of overall existing feeding practices were not satisfactory. There is a great need to awareness regarding feeding of balance ration, importance of mineral mixture, conservation of fodder, nutrition status of various feed and fodder in this area. Awareness camps and training programs regarding scientific feeding management can increase production and profitability of dairy enterprise in future.

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