

DOI No.: <http://doi.org/10.53550/EEC.2023.v29i05s.061>

Assessment of Dairy Farmers Knowledge about Recommended Green Fodder Production Practices in Haryana, India

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(Received 1 May, 2023; Accepted 2 June, 2023)

ABSTRACT

Green fodder plays a crucial role in providing essential nutrients to dairy animals, ensuring their health and productivity. The study was conducted on 120 dairy farmers randomly selected from the 3 districts of Haryana, namely Jind, Charkhi Dadri and Yamunanagar. A survey interview schedule was administered to dairy farmers during 2019-20, focusing on their knowledge of various aspects of green fodder production, including Sorghum, Bajra, Maize, Barseem and Oat. The data collected were analyzed using descriptive statistics to determine the level of knowledge among the respondents. It was found that majority (70.00%) of farmers were having medium level of knowledge, followed by low (15.83%) and high (14.17%) level of knowledge about overall fodder production practices. Addressing knowledge gaps will not only improve the overall productivity and profitability of dairy farming but also contribute to sustainable agricultural practices and the well-being of dairy animals in the region. Targeted educational programs and demonstration may be conducted to enhance dairy farmers' knowledge about recommended green fodder production practices.

Key words: Dairy farming, Knowledge, Green fodder, Feeding practices.

Introduction

Dairying is integral part of Indian agriculture and holds significant place in Indian economy. At household level; dairying plays an important role in determining the economic condition of 70 million farm families (NSIC, 2013). India is the world's largest producer and consumer of milk and has, by far, the world's largest milking herd. Milk production has been expanding at about 4.2 percent annually since 2000, matching growth in demand as higher in-

comes spur more consumption of fluid milk and dairy products (Landes *et al.*, 2017).

In India, Haryana a region known for its significant dairy farming activities (Garima *et al.*, 2023), the cultivation of green fodder is of paramount importance. However, ensuring the adoption of recommended practices for green fodder production among dairy farmers is essential to optimize its benefits (Ponnusamy *et al.*, 2019). Green fodder production is most important single factor for the success of animal husbandry programmes and prospects of

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achieving the target set forth for the production of different animal products. This necessitates increasing the area under fodder from 4.2 to 8.3 per cent of cropped area (Kalam, 2010). Due to increasing human population and pressing needs of most of the small and marginal farmers, area under fodder production could not increase in the last two decades. Hence, the need for the development of fodder cultivation can be met partially through the introduction of improved varieties and appropriate fodder cultivation practices (Meena, 2003).

Good quality fodder helps in enhancement of milk production. Feed and fodder constitute about 60-70 per cent cost of milk production. Thus, fodder has an important role in meeting requirement of various nutrients to dairy animals for producing milk more economically as compared to concentrates. As in feeding, fodder is major constituent (2/3) of animal feed so, it is essential to increase fodder production by increasing area under cultivation and use of high yielding varieties of fodder crops. Farmers should also tend to conservation and preservation of fodder which can be used during the scarcity period to maintain the milk production. Also, there is need to carry out research for producing quality fodder from dry land (Kalam, 2010).

It is disheartening to know that about 70 per cent of recommended fodder improved practices have not been adopted by farmers (Singh *et al.* 1995). Several organizations engaged in developmental work are striving hard to disseminate the improved fodder production practices among dairy farmers, but progress in the area of fodder production has not been as substantial as in case of other crops production. In fact, dairy farmers somehow relate increase in milk production with the knowledge of fodder production technologies. Therefore This study, helpful in creating database, not only to know the existing situation of green fodder production and feeding practices being followed but also to pave the way for future evolution on this basis. It will help the experts in predicting the behavior of fodder grower having similar condition to those prevailing in the area of the present study. It will provide an insight to the research scholars scientists, planners, extension workers and NGOs engaged in the fodder development programme to introduce any future development strategies. Keeping above fact in mind, a study is conducted in Haryana to assess the knowledge of dairy farmers about recommended green fodder production and feeding practices.

Methodology

The study was conducted in Haryana state which is known for world famous murrah buffalo. Out of 22 districts three districts namely Jind, CharkhiDadri and Yamuna Nagar were selected for the present study. From each selected district one block was selected randomly and from each block two villages were selected randomly. Therefore, Shahapur and Jivanpur from Jind II block of Jind, Imlota and Rawaldhi from Dadri-II block of Charkhi Dadri and Begampur and Devdhar from Partap Nagar block of Yamunanagar were selected randomly. A list of farmers from each village was prepared who had experience of dairy farming and fodder cultivation. Twenty respondents were selected from each village by applying simple random technique. Thus from the selected districts total 120 respondents constituted the sample of the study. The respondents were personally interviewed to get first hand information. The collected data were analyzed by using mean frequency percentage, cumulative square root frequency method.

Result and Discussion

Distribution of respondents according to cropping pattern

Wheat-Sorghum is one of the cropping patterns in the state. Bajra is grown for grain and fodder purpose during the kharif season particularly in south Haryana. Maize crop is grown during kharif season for grain and fodder purpose in Yamunanagar and Jind districts of study area. Winter maize is also followed in this area for fodder purpose. Berseem is main fodder crop in irrigated areas. The data were supported by Gosain (2009) and Dobariya *et al.*, (2016). They reported that production of paddy (drilled), paddy (T.P), niger and gram had increased during the last five years, no major change was observed in cropping pattern in kharif crops, although, in rabi, change in cropping pattern was observed due to increase in irrigation facility and market availability. Most of the farmers were growing berseem crop during rabi season except in areas of Charkhi Dadri (Table 1). According to Khehra and Lavleesh (2021), majority of the respondents opined that crop diversification helped in increase net return, enhances ground water table, raise nutritional value in our daily diet, to control various insects' pests, diseases, weed problems and enhances sus-

Table 1. Distribution of respondents according to cropping pattern

S.No.	Crops	Jind (N=40)		Ch. Dadri (N=40)		Yamunanagar (N=40)	
		Frequency	Percentage(%)	Frequency	Percentage(%)	Frequency	Percentage(%)
1	Sorghum	40	100	40	100	40	100
2	Bajra	30	75	35	87.50	09	22.50
3	Maize	34	85	8	20.00	36	90.00
4	Berseem	40	100	0	0	40	100
5	Oat	35	87.50	25	62.50	32	80.00

Sorghum Production

tainable agriculture.

Distribution of respondents as per knowledge level of sorghum Production

Data depicts in Table 2 showed that majority (70.83%) of on respondents had medium knowledge level followed by low (16.67%) and high (12.50%) about sorghum production. This indicates that maximum per cent of respondents belonged to medium level category knowledge of respondents about sorghum production. Similar findings were supported by the findings of Suman *et al.*, (2002). It was also found that Jind had more knowledge than Charkhi Dadri than followed by Yamunanagar district about knowledge of sorghum production and all of three district majority of respondents had medium level of knowledge about production of sorghum.

The results are in line with the findings of Obilana and Ramaiah (1992), Michaelraj and Shanmugam (2013) and Suman *et al.*, 2020. The availability of quality sorghum seed in adequate quantity is a major constraint confronted by the growers.

Bajra Production

Distribution of respondents as per knowledge level of Bajra Production

Data from Table 3 revealed that majority (76.67%) of

respondents had medium level of knowledge followed by low (12.50%) and high (10.83%) about Bajra production. Mean score was 9.79 with mean percentage 39.16. This indicates that majority of the respondents belonged to medium category of knowledge level. These findings are in agreement with the findings of Singh (1993), Dass (1996) and Dhaka *et al.* (2010). It was also found that Charkhi Dadri district had more knowledge level than Yamunanagar district followed by Jind about knowledge of Bajra production whereas all of three district majority of respondents falls under medium level of knowledge category about production of Bajra similar to the trend of sorghum production. These findings are in country with Yadav *et al.* (2016), who reported the lack of scientific knowledge of farmers about bajra production. This may be due to lack of resources and poor extension facilities provided to the farmers. The crop is grown due to its near certain return as MSP and being a major staple crop along with Bajra in the region and also consume less water. However, significant amount of variation can be noticed in terms of their production in respective districts due to difference in sociocultural and geographical conditions. Charkhi Dadri fall under semi dry zone and its soil is suitable for the production of Bajra.

Table 2. Distribution of respondents as per knowledge level of sorghum Production (n=120)

Crop	Level of knowledge	Frequency	Percentage
Sorghum (mean=10.25) (max. score=22)	Low (less than7.76)	20	16.67
	Medium (7.76-12.74)	85	70.83
	High (12.50 and above)	15	12.50

Table 3. Distribution of respondents as per knowledge level of Bajra Production

Fodder	Level of knowledge	Frequency	Percentage
Bajra (mean=9.79) Max. score=25	Low (less than 6.98)	15	12.50
	Medium (6.98-12.60)	92	76.67
	High (12.60 and above)	13	10.83

Maize Production

Distribution of respondents as per knowledge level of Maize production

As shown in Table 4, it is clear that nearly half (48.30%) of respondents had medium level of knowledge followed by low (27.50%) and high (24.17%) level of knowledge of maize production. The mean score was 8.71. Respondents of Jind district had more knowledge (42.04%) of maize production as compared to Yamunanagar (40.04%) and Charkhi Dadri (35.40%). The reason behind this is due to maize as a crop is grown during kharif season for grain and fodder purpose in Yamunanagar and Jind districts. The overall knowledge level of respondents of study area was 45.84 per cent. The results are in line with the findings of Parkash and Peshin (2020).

Table 4. Distribution of respondents as per knowledge level of Maize production (n=120)

Category	Frequency	Percentage
Low (less than 6.10)	33	27.50
Medium (6.10-11.32)	58	48.30
High (11.32 and above)	29	24.17
Mean=8.71	Max. Score=19	

Berseem Production

Distribution of respondents as per knowledge level of Berseem production

Data from the Table 5 showed that majority (60%) of respondents had medium level of knowledge, followed by low (23.37%) and high (16.57%) knowledge about Berseem production. Maximum score of

Table 5. Distribution of respondents as per knowledge level about Berseem production (n=120)

Crop	Level of knowledge	Frequency	Percentage
Berseem	Low (less than 7.36)	28	23.37
	Medium (7.36-13.42)	72	60
	High (13.42 and above)	20	16.67
Mean=10.39		Max. score= 25	

Table 6. Distribution of respondents as per knowledge level of Oat production (n=120)

Crop	Level of knowledge	Frequency	Percentage
Oat	Low (less than 6.66)	13	10.83
	Medium (6.66-11.14)	83	69.17
	High (11.14 and above)	24	20
Mean=8.90		Max. Score= 20	

knowledge of Berseem is 25. Mean was 10.39 and mean percentage was 41.56. It was found that respondents from Charkhi Dadri has less knowledge than respondents from other district, it might be due to Berseem is main fodder crop in irrigated areas. Most of the famers were growing berseem crop during rabi season in these districts except in areas of Charkhi Dadri. The overall knowledge level of respondents of study area was 41.56 per cent. The results are in line with the findings of Agrawal *et al.* (2013) and Singh *et al.* (2017). They revealed that majority (80.00%) of the respondents possessed medium level of knowledge about berseem production technology while, 18.33 and 1.67% per cent of farmers were possessing low and high level of knowledge respectively.

Oat Production

Distribution of respondents as per knowledge level of Oat production

Data in Table 6 indicate that majority of the farmers (69.17%) had moderate level of knowledge followed by 20 and 10.83 per cent of them had high and low levels of knowledge, respectively. Thus, it indicates that maximum percentage of the respondents belonged to the medium level of knowledge category about fodder production of oat. Maximum score of knowledge of oat is 20. Mean score for oat being 8.9 and the mean percentage was 44.5. Respondents of Jind district had more knowledge (47.90%) of oat production as compared to Charkhi Dadri (45%) and Yamunanagar (40.50%). The overall knowledge level of respondents of study area was 44.5 per cent. According to Singh (2013), farmers had poor knowledge about oat production and 93% of the total

variation in the knowledge level of oats growers regarding oat production technology.

Overall Knowledge about Fodder Production Practices

It is evident that majority (70.00%) of farmers were having medium level of knowledge, followed by low (15.83%) and high (14.17%) level of knowledge about fodder production practices. These findings have been supported by the findings of Meena *et al.*, (2017).

Conclusion

The results of study revealed that majority of dairy farmers possessed medium level of knowledge about green fodder production. Cropping pattern of Sorghum production was cent percent among all the three districts while berseem production was not reported among respondents of Charkhi dadri. Thus, efforts should be made to update their knowledge level by organizing on farm trials and demonstrations. The shrinking landholdings and increasing demand of milk and milk products have increased the scope of dairy farming in Haryana so there is need of develop strategies and find solutions to bridge this gap which will otherwise definitely going to have negative effects on the process of livestock development and milk production.

Acknowledgements

I am grateful to Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana and my advisory committee for giving me opportunity and guiding me.

Conflicts of interest statements

There is no conflict of interest of any type.

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