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Feeding Management Practices Followed by Dairy Farmers of Kandi Area of Punjab

Hujaz Tariq, Gagandeep Singh R K Sharma and Amandeep Singh
Regional Research and Training Center, Talwara,
Guru Angad Dev Veterinary and Animal Science University Ludhiana, Punjab

ABSTRACT

A field survey was undertaken to record the prevailing feeding management methods employed by dairy farmers in the Kandi region of Hoshiarpur district in Punjab. The study encompassed on 80 farmers from various villages. Structured interviews, utilizing a pre-tested questionnaire, were conducted to gather information about the existing feeding practices. The data were recorded through direct interaction with the farmers and first hand observations. The study revealed there was a limited supply of both green and dry fodder available in the area. As a result, farmers relied on acquiring both dry and green fodder through purchases, considering the limited availability of land at their disposal. Concentrate feed was primarily given to lactating animals but in restricted amounts. Concentrate was often prepared at home consisting of majorly wheat grains as primary energy source and mustard and cotton seed cake as protein, fat and fibre sources. Knowledge about fodder preservation methods like silage and hay-making was lacking. Similarly, the recognition and implementation of providing concentrate mixtures during late lactation/transition period were also missing. The importance of feeding mineral mixture and vitamins were also limited. Consequently, the dairy farmers in the region were deficient in scientific knowledge concerning dairy management, leading to compromised production and reproductive performance outcomes. Therefore, there is a need to conduct various trainings to educate the dairy farmers of the area for obtaining better performances and returns.

Key Words: Green fodder, Kandi area, Mineral mixture, Silage.

INTRODUCTION

Feeding management is crucial for maximizing the potential of dairy animals, accounting for around 70% of the total costs associated with milk production (Singh *et al,* 2023). Underfeeding prevents animals from reaching their genetic potential, leading to stunted growth, delayed maturity, and reduced productivity. Effective feeding practices are therefore vital for animal health, productivity, and overall farm profitability. The *Kandi* area faces significant challenges, such as small and marginal landholdings, uneven terrain, and limited water availability, which impede fodder production and agricultural productivity. These constraints limit economic opportunities for farmers (NAIP, 2014). Understanding the feeding management practices followed by farmers is essential to identify strengths and weaknesses and formulate suitable intervention policies (Prajapati *et al,* 2021). This approach aims to improve animal welfare, optimize production efficiency, and promote sustainable agricultural development. Therefore, the present investigation was undertaken to study the knowledge level of farmers regarding various feeding management practices in the Kandi area of Hoshiarpur district, Punjab. The aim is to identify opportunities to improve feeding strategies, enhance animal welfare, and ensure the long-term sustainability of dairy farming in the Kandi area.

MATERIALS AND METHODS

A field survey was conducted on farmers from the blocks of Hajipur, Talwara, and Bhunga in District Hoshiarpur. These farmers had mostly attended various trainings and awareness camps conducted by the Regional Research and Training

Corresponding Author's Email - hujaztak@gmail.com

Centre, Talwara. The study encompassed 80 farmers from several villages (Nangal Behalan, Sathwan, Jakhrawal, Bela Sariana, Thane, and Waziran) within the Kandi area of Hoshiarpur. Dairy farmers were selected randomly, and information regarding various feeding practices was collected using structured interviews and a pre-tested questionnaire. The data was gathered through direct interaction with the farmers and firsthand observations. The interviews covered a wide range of feeding management aspects, including utilization of crop byproducts, silage, hay, and available cultivated fodder. The discussions also addressed feeding strategies at different stages of dairying, including calf and heifer care, late pregnancy, and early lactation. Other topics included the administration of colostrum, mineral supplementation, and the enhancement of diets with essential vitamins. The data was then transferred to a data sheet and analysed using frequencies and percentages.

RESULTS AND DISCUSSION

In the *Kandi* area, farmers practiced stall feeding for their livestock despite having adjacent forest areas available for grazing. Most of these animals (76%) were fed individually, while the remaining were fed in groups of two to three animals using a central feeding manger. It was similar to findings of Sourav *et al* (2023), who observed that stall feeding as common practice of feeding among the farmers. The animals' diet primarily consisted of green fodder, dry fodder (mainly wheat straw), and home-prepared concentrate, which was limited to lactating animals with an average milk yield of 2-12 kg in a restricted amount only. During the *Rabi* season, the green fodder included green oat, berseem, and rye grass. In the *Kharif* season, green bajra, Nutri feed bajra, and maize were the main types of green fodder available. Most farmers cultivated green fodder on small plots of land near their homes and used self-prepared chopped wheat straw (2 to 3 cm in length) as the primary source of dry fodder. However, a significant number of farmers reported a limited supply of both green and dry fodder Consequently, they often had to purchase fodder due to the limited availability of land (Singh *et al,* 2024). Similar findings were reported by Rathore (2023) who observed small land holdings, low production and limited fodder supply in Kandi area dairy farmers. Only a few farmers used paddy straw as dry fodder.

Fodder conservation methods such as silage and hay making were almost non-existent in the area, possibly due to the limited availability of fodder and a lack of knowledge about these technologies.Sharma (2015) who observed limited knowledge of fodder preservation among small farmers in Kapurthala district of Punjab. Very few farmers purchased silage bales during the off-season. The home-prepared concentrate for lactating animals typically consisted of wheat as the primary energy source and mustard and cottonseed cake for protein, fat, and fiber. Wheat grains were preferred over maize grains due to their availability at home and a common belief that maize grains could cause mastitis due to toxins.

The concentrate offered was mainly in the form of mash whereas few farmers also fed the pelleted concentrate mixture of various commercial preparations. Further, it was also observed that homemade concentrate was soaked for 2 to 3 hours before being offered to the animals. Sabapara *et al* (2015) observed the practice of soaking concentrate ingredients in water before feeding to animals. The farmers practiced feeding concentrate two times a day just prior to milking or during the milking. Limited concentrate use is likely due to high ingredient costs, low animal production, and limited knowledge of feed formulation. Sharma (2015) also identified poor knowledge of feed nutritive value and high raw ingredient costs as major barriers to adopting cattle feed formulation technology and concentrate feeding on dairy farms.

The practice of feeding TMR (Total mixed ration) was not found prevalent in the area, but few farmers (8 %) did practices feeding concentrate, chopped green and wheat straw together as hand mixed total ration. The practice of providing specific concentrate mixtures during different stages, such as late lactation, transition period, and growth period, was also missing. Although farmers lacked knowledge regarding importance of feeding during transition period, few farmers recently have started using various available

Table 1. Feeding management practices followed by farmers of Kandi area of Punjab

Sr.No.	Characteristic	Frequency	Percentage
1.	Type of Fodder cultivated		
a.	During Rabi Season		
	Leguminous (Berseem/Rye Grass)	05	6.3
	Non leguminous (oat)	18	22.5
	Non availability	16	20.0
	Both	31	38.8
b.	During *Kharif*		0
	Bajra/Maize/ Nutri feed Bajra/Sorghum	59	73.8
	Non availability	21	26.2
2	Whether fodder was cultivated/purchased		
	Cultivated	64	80.0
	Purchased	38	47.5
	Both	22	27.5
3	Preparation and purchase of silage and Hay	05	6.3
4	Feeding Tree leaves as fodder	08	10.0
5	Dry fodder used in Ration	80	100.0
c.	Wheat straw as Dry fodder	76	95.0
d.	Paddy Straw	6	7.5
6	Whether concentrate given to lactating animals	76	95.0
7	Whether concentrate given to Dry animals	6	7.5
8	Whether concentrate given to growing animals	14	17.5
9	Whether any specialized feed given to transition animals	28	35.0
10	Whether concentrate was prepared at Home	54	67.5
11	Whether commercial preparation was used	28	35.0
12	Preparation of Total mixed ration	6	7.5
13	Whether animals were fed as per requirement	19	23.8
14	Whether colostrum was feeding within two hours to calves	24	30.0
15	Whether calf starter was given to calves	08	10.0
16	Use and awareness regarding mineral mixture and vitamin supplementation	59	73.8
17	Use and awareness regarding By pass supplementation	1	1.3
18	Feeding salt to the animals	60	75
19	Source of water		
	Ground water	28	35
	Other than ground water	52	65
20	No. of times water offered		
	ad libitum (24 h)	18	22.5
	Once a day	28	35.0
	Twice a day	32	40.0
	More than once	2	2.5

commercial preparation of Transition feed to animals particularly twenty days prior to calving. It is worth to mention that few farmers feed wheat grain and cotton seed cake in gruel form prepared by heating these ingredients in low flame just prior to transition period. No specific attention was given to calf feeding, as it was believed by many farmers that colostrum should not be fed to calves until the placenta had been expelled. However, placenta expulsion is aided by early suckling, and essential antibodies are received by the calf within the first two hours of birth. These findings align with those of Singh *et al* (2023) and Singh *et al* (2019), who also noted that farmers wait for placenta expulsion before feeding colostrum to calves. Additionally, the importance of feeding mineral mixtures and vitamins was not well recognized. However, a considerable farmer has started using mineral mixture as top dressed and observed significant improvement in productive and reproductive performance of animals. However, still a large number of farmers were reluctant to use mineral mixture in the diet of animals. The use of supplements like bypass fat was almost non-existent.

Water intake is a crucial yet often overlooked nutrient (Sharma *et al,* 2016). The source of the water can greatly affect its quality, particularly the total dissolved content level, which in turn influences animal performance (Sharma *et al,* 2017). The primary source of water for drinking and other daily farm operations was either groundwater through hand pumps or tube wells, pucca reservoirs at some places and tap water, consistent with the findings of Sourav *et al* (2023), who identified groundwater as a major source of drinking water in animals. Most farmers lacked a twenty-four-hour water supply, with observations indicating that water was provided by farmers once, twice, and daily at rates of 35%, 40%, and 2.5%, respectively.

CONCLUSION

It was concluded that farmers lacked the scientific knowledge regarding feeding of dairy animals leading to compromised production and reproductive performance outcomes. Therefore, there is need for creating awareness and enhancing knowledge level of farmers regarding scientific feeding management through various trainings.

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