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Pushpa P

Assistant professor, College of Horticulture, Sirsi, Karnataka, India

Nagaratna Biradar

Principal scientist, IGFR-RRS, Dharwad, Karnataka, India

Swetha BS

Assistant professor, Regional Horticulture Research and Extension Centre, Bengaluru, Karnataka, India

Itigi Prabhakar

Assistant professor, College of Horticulture, Koppal, Karnataka, India

Anil Kumar S

Assistant professor, Regional Horticulture Research and Extension Centre, Bengaluru, Karnataka, India

Correspondence

Swetha BS

Assistant professor, Regional Horticulture Research and Extension Centre, Bengaluru, Karnataka, India

A study on feed and fodder management systems in periurban and rural areas of Belgaum district of Karnataka state, India

Pushpa P, Nagaratna Biradar, Swetha BS, Itigi Prabhakar and Anil Kumar S

Abstract

Livestock sector plays an important role in the national economy and in the socio-economic development of the country. Green fodder provides nutrients for milch animals at cheaper cost. In spite of its importance, in the country, green fodder production has not been given proper place in the cropping pattern in providing proper nutrition to livestock. In view of this, a study was undertaken to analyse the feed and fodder management systems in periurban and rural areas of Belgaum district. Totally 160 respondents of 8 villages in periurban and rural areas were interviewed by administering the standardised interview schedule. The availability of DCP in rural areas was only 0.474 kg/head/day leading to a percentage deficiency of 36.8. In rural areas the availability of TDN was only 2.065 kg/head/day and the same was 3.868 kg/head/day in peri-urban areas. The deficiency of DCP was observed in both rural (81.42%) and peri-urban areas (75.89). Considerable percentage deficiency was observed in TDN of feeds and fodder fed to livestock in rural (93.06%) and peri-urban areas (73.71%). The variables Land holding, Herd size, Milk volume, Income from agriculture and Income from livestock showed positive and significant relationship with fodder management.

Keywords: study, fodder management, periurban, rural areas, Belgaum district, Karnataka

Introduction

India has made remarkable strides in the area of dairy development. India has largest livestock population in the world. The sustainability of the livestock production system in the country is handicapped due to perpetual shortage of feed and fodder even though the livestock industry is by and large dependent on agricultural residues, waste materials and naturally available green fodder. Green fodder plays an important role in dairying. The term green fodder applies to those crops which are used to supply the roughages necessary in rations for farm animals and which are suitable for use as green fodder. Green fodder provides nutrients for milch animals at cheaper cost. In spite of its importance, in the country, green fodder production has not been given proper place in the cropping pattern in providing proper nutrition to livestock. At this juncture, it should be noted that only 3.5 per cent of cultivable land of the country is allotted for green fodder production.

Fodder plays an important role in economising the cost of milk production. Fodder comprises a major protein of dairy ration of milch animals and therefore cultivation of nutritious and high yielding fodder is inevitable. Profitable livestock farming depends mainly on availability of fodder. With increase in number of animal population & shrinking land resources, the problem to provide adequate feed and forage is becoming acute. Insufficient availability of fodder is thus one of the major constraints of livestock rearing in the country. The present study was conducted to analyse the feed and fodder management systems in periurban and rural areas of Belgaum district of Karnataka state.

Materials and Methods

Study was conducted in Belgaum district of Karnataka state, as it ranks first in terms of total livestock population. Sample was drawn from periurban and rural areas. Periurban refers to an area or village or habitation located in the perimeter of the urban area having partial or complete influence of urbanization. Four villages that are located within a distance of 8 km from district headquarter with partial influence of urbanization were selected as periurban areas.

Another 4 villages located beyond 8 km were selected for rural areas. Thus the study covered totally 8 villages. Possession of livestock was the main criterion used to select the respondents. In each selected village, 20 respondents were randomly interviewed. The study covered 80 farmers from periurban area and 80 from rural area totalling to 160 farmers. The data was collected through personal interview technique. Interview schedule was designed incorporating all the identified variables and was tested at three different stages to identify the ambiguities and to standardised the interview schedule. This standardised interview schedule was used to collect the data from the respondents.

Deficiencies in feed and fodder management was operationalised as percentage of protein and energy deficiency found in the daily livestock feeding practices followed by the respondents of peri urban and rural areas. Information on quantity and type of feeds fed to working animals and to milch animals every day was collected. The nutritive value of these feeds as given by Ranjhan (1991) [3] and Arora (1997) [1] in terms of Total Digestible Nutrients and Digestible Crude Protein were calculated. The average of TDN and DCP were compared with the daily requirements of milch and draught animals as recommended by ICAR. The percent deficiencies for these nutrients were calculated by considering the difference between the actual availability from the respondents' daily livestock feeding practice and the recommended dosage. This was calculated separately for rural areas and peri urban areas.

Results and Discussion

Nutrient deficiencies in feed and fodder management systems

Nutrient deficiencies in feed and fodder management of milch animals in rural and peri-urban areas

The digestible crude protein (DCP) and total digestible nutrients (TDN) requirement and its availability to milch animals in rural and peri-urban areas per head per day were presented in Table 1.

The recommended dose of DCP for milch animals was observed to be 0.75 kg/head/day whereas the availability of DCP in rural areas was only 0.474 kg/head/day leading to a percentage deficiency of 36.8. Low use of concentrate feeds in the ration provided to the livestock in rural areas might be the probable reason for the present finding. But, in peri-urban areas zero percentage deficiency of DCP was found. Utilisation of leguminous feeds, green fodders and concentrates to the livestock by peri-urban farmers could be the reason. The investigator at the time of data collection observed that peri-urban farmers fed more quantity of concentrates with the assumption of improvement in milk production. Thus, the excess feeds were fed to animals.

The similar trend was observed in rural areas in case of total digestible nutrients (TDN), where the recommended dose of TDN was 6.65 kg/head/day. In rural areas the availability of TDN was only 2.065 kg/head/day and the same was 3.868 kg/head/day in peri-urban areas. Though peri urban respondents purchased fodder and concentrates to meet out the nutritional requirement, during off season due to higher cost and non-availability of quality fodder they had to compromise. This could have been the reason for not meeting the requirement of TDN as per the recommended allowances. The results were similar to the results obtained by Bhaskar and Gupta (1997) [2].

Table 1: Nutrient deficiencies in feed and fodder management of milch animals in Rural and Peri-urban areas n=160

S. No	Particulars	Recommended dose	Rural	Peri-urban	Percentage deficiency	
					Rural	Peri-urban
1.	Digestible crude protein (kg)	0.75	0.47	1.16	36.8	0.00
2.	Total Digestible Nutrients	6.65	2.06	3.86	68.94	41.83

Nutrient deficiencies in feed and fodder management of draught animals in rural and peri-urban areas

The nutrient deficiencies in feed and fodder management of draught animals in rural and peri-urban areas. It was observed from Table 2 that the deficiency of DCP was observed in both rural (81.42%) and peri-urban areas (75.89). Considerable percentage deficiency was observed in TDN of feeds and fodder fed to livestock in rural (93.06%) and peri-urban areas (73.71%).

The probable reasons for the above findings might be that, the

draught animals require more of TDN and DCP as they were put to rigorous work. However the farmers in general resort to the same feed and fodder used to the milch animals. Thus leading to the deficit of nutritional requirements. The investigator during the time of data collection observed that only a few farmers were using separate feed for draught animals such as horsegram, but only for shorter period of 1-2 months just before the onset of monsoon to prepare them to take up heavy summer and Kharif operations. The similar findings were reported by Singh *et al.* (2002) [4].

Table 2: Nutrient deficiencies in feed and fodder management of draught animals in Rural and Peri-urban areas n=160

S. No	Particulars	Recommended dose	Rural	Peri-urban	Percentage deficiency	
					Rural	Peri-urban
1.	Digestible crude protein (kg)	0.56	0.10	0.13	81.42	75.89
2.	Total Digestible Nutrients	4.9	0.34	1.28	93.06	73.71

Table 3: Relationship between selected independent variables with Fodder management n= 160

S. No	Variables	Fodder management		
		Rural (r)	Periurban (r)	Total (r)
1	Age	-0.0908	-0.167	-0.146
2	Education	-0.2464*	0.019	0.027
3	Land holding	-0.2980**	-0.170	-0.352**
4	Herd size	-0.037	0.381**	0.439**
5	Milk volume	0.076	0.383**	0.348**
6	Income from agriculture	-0.080	0.091	0.208**

7	Income from livestock	0.039	0.369**	0.473**
8	Feeding index	0.028	0.167	0.113

* Significant at 5% level

** Significant at 1% level

The variables Land holding, Herd size, Milk volume, Income from agriculture and Income from livestock showed positive and significant relationship with fodder management. Income from livestock showed positive and significant relationship with fodder management in peri-urban and total categories and non-significant relationship in rural category. The reason of livestock rearing as an important livelihood source in peri urban area holds good for the present finding. Feeding index showed non-significant relationship with fodder management in all the three categories of rural, peri-urban and total categories. Feeding index was derived by considering the wastages occur during feeding. Thus the non-significant relationship between feeding index and fodder management could be explained.

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