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Fodder management systems of peri-urban and rural livestock owners of Belgaum district of Karnataka state, India

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Abstract

A study was undertaken to analyse the fodder management systems of peri-urban and rural livestock owners in Belguam district of Karnataka that ranks first in terms of total livestock population. Eighty farmers each from peri-urban and rural areas of 8 villages, totaling to 160 farmers were interviewed. No significant differences were observed in green and dry fodder production between rural and peri-urban farmers. However significant difference between them was observed in green and dry fodder deficits as demands varied. There was no significant difference in fodder management between rural and peri-urban areas.

Key words : Dry fodder, Fodder production and deficit, Green fodder, Levels of fodder Management, Livestock.

Introduction

Fodder plays an important role in economizing the cost of milk production. 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 by and large is dependent on agricultural residues, waste materials and naturally available green fodder. Green fodder plays an important role in dairying as it provides nutrients for milch animals at cheaper cost. In spite of its importance green fodder production has not been given proper place in the cropping pattern in the country as only 3.9 per cent of cultivable land of the country is allotted for green fodder production. During 2002-03 the total fodder production in India was 88.08 thousand tons. In 2005 supply of green and dry fodder in India was 389.9 million tons and 443 million tons, respectively, whereas demand for green fodder was 1025 million tons and dry fodder was 569 million tons (GOI, planning commission website). Hence the green and dry fodder deficit was 61.9 percent and 22.1 percent, respectively. Insufficient availability of fodder is thus one of the major constraints of livestock rearing in the country.

Livestock rearing forms an integral part of farming system in Karnataka. The state is source of some of the well known breeds of cattle, buffalo and sheep. However, the area under green fodder in the state is hardly 0.7 percent of the total cultivated area as against the national average of 3.9 per cent. Inadequate supply of feeds and inability to meet the nutritional requirements are main constraints in exploiting the potential of livestock resources in the state. It has been proved that even the existing low genetic potential livestock, if fed appropriately will yield 25-30% more thereby increasing profitability to the farmers. The present study was carried out to analyse the fodder management systems of peri-urban and rural livestock owners, which will help to device suitable interventions to meet the fodder shortages and improve the productivity and profitability of livestock.

Materials and Methods

The study was conducted during 2005-06 in Belgaum district of Karnataka state, as it ranks first in terms of total livestock population. Sample was drawn from peri-urban and rural areas. Peri-urban 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 located within a distance of 8 km from district headquarter with partial influence of urbanization were selected as peri-urban areas. Another 4 villages located beyond 8 km were selected as rural areas. Thus the study covered totally 8 villages. In each village, 20 respondents were randomly interviewed through personal interview technique. The study covered 80 farmers each from peri-urban and rural

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area totaling to 160 farmers. Interview schedule was designed incorporating all the identified variables and was tested at three different stages to identify the ambiguities and to standardise the interview schedule. This standardised interview schedule was used to collect the data from the respondents.

The fodder production and deficit were elicited from the respondents directly and were expressed in tons. Levels of fodder management in the study were measured by a set of management practices followed by the respondents. The practices covered were management of fodder scarcity, fodder storage and utilization, methods of feeding and the method of utilisation of left over fodder while storing or feeding. Multiple answer choice for each of the practices were given and scores were assigned for these answers based on relative importance. The total possible maximum score was 141 and the minimum score was 48. The respondents were then categorized into three groups *viz*., poor, average and good management based on mean and standard deviation. The collected data was analysed using mean, standard deviation and t-test of significance.

Results and Discussion

Fodder production and deficit from the lands owned by the farmers: The results indicate that, one third of rural respondents (33.75%) produced 5-10 tons of fodder, while almost similar percent of the respondents (35.00%) in peri-urban area produced less than 5 tons. The probable reason might be that most of the rural respondents grow crops mainly for grain purpose and the crop residues are utilised as fodder. Less land holding could be the reason for comparatively low production of fodder in peri-urban areas (Table 1).

Reverse trend was observed with regard to the quantity of fodder shortage experienced by rural and peri-urban respondents. Most of the rural farmers (42.50%) expressed a dry fodder deficit of less than 5 tons, while it

Table 1 : Fodder production and deficit from lands owned by the respondents

n=160

Sl. No.	Particulars	Rural		Peri-urban		Total	
		Number	Percentage	Number	Percentage	Number	Percentage
Production							
Dry fodder (tons)							
1.	<5	12	15.00	28	35.00	40	25.00
2.	5-10	27	33.75	25	31.25	52	32.50
3.	10-15	17	21.25	12	15.00	29	18.12
4.	15-20	8	10.00	11	13.75	19	11.87
5.	>20	16	20.00	4	5.00	20	12.50
	Total	80	100.00	80	100.00	160	100.00
	Mean	9.17		8.64		9.08	
Dry fodder deficit (tons)							
1.	<5	34	42.50	17	21.25	51	31.87
2.	5-10	3	3.75	23	28.75	26	16.25
3.	10-15	2	2.50	5	6.25	7	4.37
4.	15-20	3	3.75	3	3.75	6	3.75
5.	>20	0	0.00	5	6.25	5	3.12
	Total	42	52.50	53	66.25	95	59.37
	Mean	2.37		5.53		4.09	
Green fodder produced from own field (tons)							
1.	<5	41	51.25	32	40.00	73	45.62
2.	5-10	6	7.50	4	5.00	10	6.25
3.	10-15	3	3.75	5	6.25	8	5.00
4.	15-20	3	3.75	2	2.50	5	3.12
5.	>20	4	5.00	3	3.75	7	4.37
	Total	57	71.50	46	57.50	103	64.37
	Mean	2.88		3.59		3.24	
Green fodder deficit (tons)							
1.	<5	3	3.75	2	2.50	5	3.125
2.	5-10	0	0.00	5	6.25	5	3.125
3.	10-15	0	0.00	3	3.75	3	1.875
4.	15-20	0	0.00	1	1.25	1	0.625
5.	>20	0	0.00	2	2.50	2	1.250
	Total	3	3.75	13	16.25	16	10.00
	Mean	0.60		0.90		3.13	

was between 5-10 tons for 28.75 per cent of peri-urban respondents. Greater fodder deficit in peri-urban areas might be due to the prevalence of more percent of crossbred animals leading to more fodder requirement. Less land holding and cultivation of commercial crops could also contribute for experiencing higher fodder deficiency in peri-urban areas. Rural areas had lesser dry fodder deficiency because of the low fodder requirement by the local buffaloes which comprises larger proportion of the rural livestock population.

Nearly three fourth (71.25 %) of the rural and more than one half (57.50%) of peri-urban respondents produced green fodder. Half (51.25%) of the rural respondents could produce up to 5 tons and the same quantity was produced by 40 per cent of peri-urban respondents. Some portion of the land in Kharif is utilised for growing Sorghum, Maize and/or Bajra to meet out the green fodder requirement. Peri-urban respondents do cultivate similar crops for meeting green fodder requirement.

Only 3.75 per cent of rural farmers expressed deficit of less than 5 tons of green fodder annually and none of the respondents expressed a deficit greater than 5 tons. In peri-urban areas, 6.25 per cent of respondents experienced 5-10 tons of green fodder shortage and 3.75 per cent of them expressed shortage to the extent of 10-15 tons. The rural farmers utilized the green fodder produced within their villages as well as stacked fodder and it was sufficient as they own mostly local breeds. In peri-urban areas, as the livestock population is dominated by crossbred animals with higher nutritional requirements, the farmers faced a larger green fodder deficiency.

The average green fodder production from the own land per respondent in peri-urban area (3.59 tons) was greater than the production in rural area (2.88 tons). Similarly even shortage of green fodder was more for farmers of peri-urban area (0.90 tons) as compared to rural area (0.60 tons) (Table 2).

More green fodder production by farmers of peri-urban area could be due to the cultivation of annual fodder crops in comparatively large area as demand from crossbred animals is more. The farmers in peri-urban areas feed more green fodder to obtain greater milk yield as most of them rear livestock for commercial purpose.

Average production of dry fodder in peri-urban area (8.64 t) was lesser than the rural area (9.17 t). The deficit in green and dry fodder in peri-urban area (0.9 t, 5.52 t) was more than the deficit found in rural area (0.6 t, 2.36t). This could be due to the more requirement of fodder in peri-urban area due to bigger herd size as well as more crossbred animals.

Non-significant difference was observed between rural and peri-urban areas for green and dry fodder production, as the difference between average quantities produced by the respondents of peri-urban and rural area is less than 1 ton. Significant difference was observed in dry and green fodder deficits between rural and peri-urban areas, as demands varied. This findings pertaining to green fodder and dry fodder deficit were in line with the findings of Singh *et al.* (2001).

Fodder management of livestock owners

Most of the rural (51.25%), peri-urban (46.25%) and total category (48.75%) respondents belonged to good fodder management category (Table 3). There was no significant difference in fodder management of farmers between rural and peri-urban areas because the livestock activity forms an important component of mixed farming followed in rural areas. Thus, every farmer acquired traditional skill

Table 2 : Average fodder production and deficit from land owned by the respondents in the study area

n=160

Sl. No.	Particulars	Green fodder		Dry fodder	
		Rural	Peri-urban	Rural	Peri -urban
1.	Production (tons)	2.88	3.59	9.17	8.64
2.	Deficit (tons)	0.60	0.90**	2.36**	5.52**

** Significant at 1% level

Table 3 : Levels of fodder management practiced by livestock owners

n = 160

Sl. No.	Particulars	Rural		Peri-urban		Total	
		Number	Percentage	Number	Percentage	Number	Percentage
1.	Poor management	24	30.00	29	36.25	53	33.10
2.	Average management	15	18.75	14	17.50	29	18.125
3.	Good management	41	51.25	37	46.25	78	48.75
	Total	80	100.00	80	100.00	160	100.00

of better livestock rearing by economically storing and utilizing the fodder for livestock. Similarly in peri-urban areas, fodder is found to be managed well in order to economise the cost of milk production. In rural as well as peri-urban areas, meticulous utilisation of stacked fodder was observed. Similarly, green fodder was also utilised and fed to the livestock based on the physiological stage of animals (pregnant, lactating *etc*.), work load of draught animals, season of feeding (winter/summer) *etc*. Hence good management of available fodder was found in the study area.

Thus, the study indicates that although there was no significant difference in the green and dry fodder production, peri urban farmers face fodder shortage more acutely than the rural farmers. Good fodder management was noticed almost in half of the respondents of peri-urban and rural area. Only about one fourth of the farmers were found to poorly manage fodder for which help by front line extension workers are required.

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