

Socio-economic profile of perennial fodder growers and the constraints faced by them in cultivation

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Abstract: A study was carried out to know the socio-economic profile of perennial fodder growers and constraints faced by them in cultivation of these crops. Ninety five perennial fodder growing farmers of Belagavi and Dharwad districts of Karnataka identified through snowball technique were interviewed using standardized interview schedule. The study revealed that more than half of the fodder growers belonged to middle age group were educated upto pre-university level, belonged to category of small family size and high income group. Majority of the fodder growers belonged to nuclear type of family. Less than half of them possessed medium herd size and more than half were contacted Agricultural Assistant and Assistant Agricultural Officer in 15 days. Majority of the fodder growers participated in krishi mela. Difficulty to get seeds/ planting materials was perceived as the major constraint as it ranked first for continuance of perennial fodder crops.

Key words : Age, Constraint, Extension, Family size, Fodder

Introduction

Livestock is deemed as the oldest wealth resource for mankind and was once a symbol of economic status in the society. Livestock provides a large share of draught power, with about half the cattle population and 25 percent of the buffalo population being used to cultivate 60 million hectares of cropland. The contribution of draught animal is roughly estimated to be a tune of Rs. 10,000 crores per year. On an average, 800 million tones of manure is produced. The contribution of livestock to agriculture Gross Domestic Product (GDP) is 28 percent and accounts for 5 percent of total GDP, which was 4.70 percent in 2004-05 (Anon., 2012). With the increase in per capita income and urbanization, the consumption of livestock products will continue to rise in the foreseeable future. Consequently, the demand for feed and fodder for feeding and fattening of livestock will also increase. Balanced feeding of milch animals is more critical, as the results are reflected within a short span and almost immediately in the form of milk production. In case of growing stock of bullocks, sheep and goats, quality of feed will reflect on the growth rate, body weight and fertility, which are often unnoticed by the owners (Franzel *et al.*, 2003). Maximization of fodder in the diet of dairy animal makes the cost of ration much cheaper as compared to concentrated based ration (Gaikwad and Gampower, 1995). Hence feeding of milch animals has greater significance for farmers, although feed management for other species is equally important. The requirement of crude protein and total digestible nutrients is 47.76 and 344.93 million tones but, the availability is 34.18 and 262.02 million tones of crude protein and total digestible nutrients, respectively which accounting to a net deficit of 28.44 percent of crude protein and 24.04 percent of total digestible nutrients. At present, the country faces a net deficit of 61.1 percent green fodder, 21.9 percent dry fodder residues and 64 percent feeds. The major fodder crops cultivated in India are sorghum, maize, bajra, oats, hybrid napier, guinea grass, paragrass, lucerne, berseem, cowpea, velvet bean and many others. Sorghum amongst the kharif crops (2.6 million ha)

and berseem amongst the rabi crops (1.9 million ha) occupy about 54 percent of the total cultivated fodder cropped area. Improved perennial grasses have also played a major role to compensate with the high grazing intensity of 12.6 adult cattle units (ACU)/ha (Anon., 2013). In present time there is more awareness about importance of perennial fodder crop cultivation. Several farmers especially in irrigated areas are cultivating these crops. Though many farmers hesitate to allocate land for fodder cultivation, some farmers have readily allocated their land for perennial fodder crops. Hence a study was taken up with two specific objectives- to know the socio-economic profile of perennial fodder crop growers and to identify the constraints faced by them in cultivation of fodder crops.

Material and methods

Ex -post facto research design was used for the study as the phenomenon of cultivation of fodder crops has already occurred. Keeping the objectives of the study interview schedule was prepared to address the objectives of the study and it was pre-tested in non sample area to identify the ambiguities in questions if any. The final standardized interview schedule was used for data collection. Dharwad and Belagavi districts of Karnataka state were purposively selected with the consultations of scientists working on fodder crops. Villages were selected based on the criteria of maximum number of fodder growers as enlisted with Indian Grassland and Fodder Research Institute (IGFRI), Dharwad. Kodachwad and Avarolli village in Khanapur taluk, Kallol village in Chikodi taluk (Belagavi district); Mansur, Managundi and Tegur villages in Dharwad taluk, Kamplikoppa village in Hubli taluk (Dharwad district) were selected as study areas. List of farmers cultivating perennial fodder crops in the study area was collected from Southern Regional Research Station, Dharwad of IGFRI. These farmers were contacted initially to collect the data and through them, by using snowball technique other perennial fodder crops growing farmers of the village were contacted to collect the

data. Overall, 55 farmers from Belagavi district and 40 farmers from Dharwad district were contacted, thus forming the sample size of 95 farmers during the year 2015-16. The collected data was scored, tabulated and analysed.

Results and discussion

Table 1 presents the socio-economic profile of perennial fodder growers. More than half of the fodder growers (60.00%) belonged to middle age group followed by 28.42 per cent to old age group and only 11.58 per cent belonged to young age group. The mean age of fodder growers was 45.29 ± 1.10 years. The probable reason for this could be that the middle aged fodder growers with some experience in farming might have realized about the less availability of proper feeding sources for livestock to obtain higher milk yield. This could have encouraged them to take up fodder cultivation. Similar results were reported by Rajanikanth (2013).

More than half of the fodder growers (60.00%) were educated upto pre-university level. Equal per cent of fodder growers

Table 1. Socio-economic profile of perennial fodder growers

Particulars	Categories	Respondents (n=95)	
		f	%
Age (years)			
Young	18-30	11	11.58
Middle	31-50	57	60.00
Old	>50	27	28.42
Mean	45.29		
SE	1.10		
Education (standard)			
Illiterate	cannot read & write	1	1.05
Primary school	1-4 th std.	1	1.05
Middle school	5-7 th std.	2	2.10
High school	8-10 th std.	17	17.90
Pre-university	11 th & 12 th std.	57	60.00
Graduate & above	above 12 th std.	17	17.90
Mean	11.69		
SE	0.26		
Family size (no.)			
Small	Upto 4 members	63	66.32
Medium	5-8 members	31	32.63
Large	>8 members	1	1.05
Mean	4.61		
SE	0.13		
Family type			
	Nuclear	79	83.16
	Joint	16	16.84
Annual income (₹)			
Low	Upto 60,000	14	14.74
Medium	60,000-1,20,000	20	21.05
High	Above 1,20,000	61	64.21
Mean	286147.37		
SE	26474.63		
Herdsize(Adult cattle units)			
Small	Mean- (0.425×SD)	31	32.63
Medium	Mean±(0.425×SD)	43	45.26
Large	Mean+(0.425×SD)	21	22.11
Mean	5.81		

(17.90%) were educated upto high school and graduate and above. Remaining percentage of fodder growers were educated upto middle school level (2.10%) followed by an equal percentage (1.05%) of fodder growers were illiterate and educated upto primary school level of education. The mean year of schooling was 11.69 ± 0.26 years. The probable reason for this could be attributed to better awareness about the importance of education and also existence of primary and high school facilities in the rural areas. Similar results were reported by Chaudhari (2006) and Pushpa (2006).

More than half of fodder growers (66.32%) belonged to category of small family size. One-third of fodder growers (32.63%) had medium family size and only 1.05 percent of fodder growers had large family size. The mean size of family was 4.61 ± 0.13 members. The reason for this might be that majority of the fodder growers had nuclear families. Similar results were reported by Manjunatha (2002) and Satish (2010).

Majority of the fodder growers (83.16%) belonged to nuclear type of family and 16.84 percent of fodder growers belonged to joint family. The reason might be fodder growers' preference to have better quality of life as nuclear family has less likelihood of sharing of facilities or resources. Similar results were reported by Satish (2010).

More than half of the fodder growers (64.21%) belonged to high income group (above ₹ 1,20,000). One fifth (21.05%) fodder growers belonged to medium income group (₹ 60,000 - ₹ 1,20,000) and 14.74 percent of fodder growers belonged to low income group (upto ₹ 60,000). The average annual income of the fodder growers was ₹ $2,86,147.30 \pm 26,474.63$. The reason for this would be assured irrigation facility with majority of the fodder growers which would enable them to cultivate more than one crop in a year. In Belagavi district, majority of the fodder growers cultivated sugarcane which fetches very good price and is also protected by Minimum Support Price (MSP). Large area is also used for cultivation of vegetables. Vegetables and other cash crops like sugar cane cultivated in irrigated area fetch good income. This might be the reason for majority belonging to high and medium income groups. Similar findings were reported by Satish (2010), Akshata (2014) and Soujanya (2014).

Less than half of the fodder growers (45.26 %) possessed medium herd size, 32.63 per cent of fodder growers possessed small herd size and 22.11 per cent of fodder growers possessed large herd size. The mean herd size was 5.81 ± 3.47 adult cattle units. The reason for medium and small herd size together, being possessed by almost 78 per cent of the fodder growers, could be attributed to various reasons like requirement of more manpower to take care of more animals, high cost to purchase animals, restricting herd size in accordance with the estimated production of fodder and selling of animals to meet the expenditure of the family, The results were in line with the results of Satish (2010), Akshata (2014) and Rajni (2015).

Table 2 depicts that majority of fodder growers (64.21%) contacted Agricultural assistant and Assistant agricultural

Table 2. Extension contact of fodder growers

Extension Workers	Frequency of contact (n=95)							
	15 days		Once in a week		6 months		Never	
	f	%	f	%	f	%	f	%
Agricultural Assistant	61	64.21	0	0	8	8.42	26	27.37
Assistant Agricultural Officer	61	64.21	0	0	3	3.16	31	32.63
Raitha Sampark Kendra	30	31.58	7	7.37	30	31.58	28	29.47
Officers of Indian Grassland and Fodder Research Institute (IGFRI), Dharwad	33	34.74	1	1.05	18	18.95	43	45.26
Krishi Vigyan Kendra (KVK) Staff	58	61.05	1	1.05	11	11.58	25	26.32
Karnataka Milk Federation (KMF) Staff	89	93.68	4	4.22	1	1.05	1	1.05

officer in 15 days because they work in Raitha Sampark Kendra (RSK) and meet farmers on their farm once in a fortnight as it is obligatory to them. Almost one-third of fodder growers (31.58%) contacted Raitha Sampark Kendras (RSKs) directly because RSKs are located in proximity to farm communities and are aimed at addressing wide range of local issues related to agriculture. They also act as a common platform and creating a terminal linkage to the fodder growers to access and interact about agriculture based technology and information at the grass root level. These kendras are intended to provide technical information on crop selection, crop production, and crop protection related know-how, market and weather information etc., to the farmers. Indian Grassland and Fodder Research Institute is less contacted by fodder growers because its mainly a research institute with less involvement in outreach activities. The reason behind Krishi Vigyan Kendra (KVK) being contacted by majority of fodder growers (61.05%) in 15 days might be to get information on different trainings, visit on-farm trials on crops like cotton and vegetables, to get acquainted with integrated pest and disease management on crops etc. High majority of fodder growers (93.68%) contacted staff of Karnataka Milk Federation (KMF) in 15 days because most of the fodder growers were members of milk cooperative society and they sell the milk obtained from dairy animals to KMFs. Similar findings were reported by Avinash (2013) and Kashappa (2013).

Table 3 depicts that majority of fodder growers participated in krishi mela (88.42 %) and one third (36.84 %) in exhibitions. Krishimela and exhibitions act as platform for farmers to know about different crops, cattle breeds, availability of latest fertilizers and implements, etc. Participation of one-fourth of fodder growers in training programmes might be due to the relevance of trainings to the work they are engaged in and felt interesting to learn by themselves in training. Similar findings were reported by Rajasekhar (2009) and Archana (2013).

Table 3. Extension participation of fodder growers

Particulars	Respondents (n=95)	
	f	%
Krishi mela	84	88.42
Agriculture Exhibitions	35	36.84
Training programmes	24	25.26
Demonstration	15	15.79
Field visits	7	7.37
Extension group meetings/interactions	7	7.37
Study tour	5	5.26
Field days	4	4.21

Totally 10 constraints have been identified in adoption of perennial fodder crops (Table 4), out of which difficulty to get seeds/ planting materials (garret score 54.62) was perceived as the major constraint as it ranked first for continuance of perennial fodder crops followed by poor germination of seeds (garret scores 46.74, rank-2) and less contact with extension personnel (garret scores 23.52, rank-3).

Planting material of perennial fodder crops are not available everywhere. None of the private agency is involved in multiplication of these materials. However, to plant one acre of land, requirement of planting material is about 10000 rooted slips or stem cuttings. Fodder growers find it difficult to get so many planting materials from other farmers. They need to get in small quantity, multiply at their level and then increase the area as desired by them. This is time consuming process. Also availability of planting material of their desired species is difficult. In view of this they might have expressed this as the major constraint. As mentioned earlier seeds of fodder crops have poor germination and maximum germination percentage of fodder crops is between 40 to 45 percentage. Similarly extension personnel working and disseminating information on fodder crops is very limited. Even in milk federations, only oflate they employ graduates to work on fodder extension. So, it becomes difficult for the farmers to obtain information on fodder crops. Perennial fodder crops as are harvested continuously they need proper cultivation and management practices to sustain their higher yields if not, the yield will be reduced. Farmers tend to give less importance to these crops and hence, timely cultivation practices are not taken up affecting the yield levels. Some of the fodder crops especially Bajra

Table 4. Ranking of constraints in cultivation of perennial fodder crops as perceived by fodder growers

Constraints	Garrett Scores	Rank
Difficult to get seeds/planting materials	54.62	I
Poor germination of seeds	46.74	II
Less visit of extension personnel	23.52	III
Difficult to get proper information	22.84	IV
Requirement of special trainings to get higher yields	20.17	V
Irrigation problem	13.91	VII
Difficult to store the produce	9.01	VIII
Requirement of high crop management practices	7.43	IX
Difficult to maintain the harvest schedule	2.93	X
Others*	18.21	VI

*Includes labour problem, less market demand, low palatability

Napier hybrid loses its fodder value if it is dried. So, the crop cannot be stored and stacked for future use. This could be the reason of expressing difficulty to store the produces as the constraint. Best quality fodder can be harvested when crop is at flowering stage but many farmers due to continuous requirement do not allow the crop to flower and harvest either before or after the flowering stage. In both the situations fodder quality affects. So maintaining harvest schedule is expressed as one of the constraint by the respondents. Similar findings were reported by Mapiye *et al.* (2006).

Good percent of fodder growers had high income. However difficulty in accessing planting material of fodder crops was expressed by them. High income enables them to purchase planting material of fodder crops but information on their place of availability is lacking. This certainly demands developing a network of designated places at district level to begin with, where farmers can get technical knowhow on fodder crops besides purchasing necessary seeds and planting material. This move will help to increase the number of fodder growers by which the problem of fodder deficiency can be addressed.

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