RESEARCH ARTICLE

Socio-economic constrains and establishment of fodder nursery on production of dairy: a participatory approach in Jagalur taluk of Davanagere district

■ K.C. Veeranna[1], B.R. Manjith Kumar, C.B. Madavaprasad[2] **and** V. Nagabhushan[3]

Members of the Research Forum

Associate Author :

[1]Department of Veterinary and Animal Husbandry Extension Education, Veterinary College, **Shivamogga (Karnataka) India**

[2]Department of Veterinary and Public Health, Veterinary College, **Shivamogga (Karnataka) India**

[3]Department of Animal Nutrition, Veterinary College, **Shivamogga (Karnataka) India**

Abstract : The present study was conducted to assess the contribution of socio-economic characteristics of dairy farmers towards their entrepreneurial behaviour in Davanagere district of Karnataka. The data was collected using a semi structured and pre-tested interview schedule from 200 dairy farmers. The results revealed that majority of socio-economic characteristics like age, occupation, education, land holding etc. had significantly influenced their entrepreneurial behavior. It necessitates formulation and implementation of suitable education strategies to increase the level of entrepreneurial behaviour among the dairy farmers that in turn influences on productivity of milch animals. A live demonstration of fodder crops during 2017-18 was undertaken in Hoskere village of Jagalur taluk, Davanagere district, Karnataka, to educate the farmers in cultivating perennial fodder grasses. Interested farmer were selected randomly from the Hoskere village for demonstration of growing of fodder grass. The study revealed that the production of Napier grass such as CO-4 and CO-3 was 86 and 102 tons/ac/y, Guinea grass was 62 tons/ac/y, Rhodes grass was 73 tons/ac/y, Hedge Lucerne was 21 tons/ac/y, Grazing guinea was 77 tons/ac/y, Para grass was 52 tons/ac/y, Anjan grass was 58 tons/ac/y and Fodder sorghum was 31 tons/ac/y. The total annual expenditure per 2 gunta (200 m^2) area of different fodder grass from fodder nursery plot was Rs. 11500 and if there is no maintenance of livestock in their farm the total income generated only from the nursery from different green fodder crops production was Rs. 25400. The net profit from different fodder crops from fodder nursery plot was Rs. 13900. Moreover, good quality and nutritional rich green fodder and dry fodder were available in the beneficiary farm from fodder trees and fodder crops all-round the year, Increased lactometer reading, Fat and SNF and milk production of the cross bred cows and finally earn the income around the year.

Key words : Constraints, Green fodder, Production, Profit, Socio-economic profile

AUTHOR FOR CORRESPONDENCE :

B.R. Manjith Kumar
Department of Veterinary and Animal Husbandry Extension Education, Veterinary College, **Shivamogga (Karnataka) India**
Email : manjeetkumar2007@gmail.com

INTRODUCTION

India is predominantly an agrarian society where animal husbandry forms the backbone of agricultural economy. Animal Husbandry plays an important role in the socio - economic development of India. Distribution of livestock is more equitable compared to that of land (Chandrasekar *et al.,* 2017). Livestock farming requires less capital and the management and production expenses are low compared to agriculture. One of the major components in dairy farming is the provision of green roughage all-round the year along with dry roughage and concentrates depending upon the milking capacity of the dairy animals. In many parts of the country the farmers are growing mono cropping and they difficult to sustain their families' livelihoods. They face constraints such as limited landholding, lower availability of fodder, declining productivity, resulting in poverty, food insecurity and a low nutritional status. In such situation other measures could also be applicable such as livestock farming. The livestock farming provides self-employment, beneficiary income and a nutritious health to the society in rural as well as urban areas. In order to provide insight on how the employment could be generated it is very essential to know aboutthe socio economic profile, current production and marketing, consumption of domestic milk and constraints faced by dairy farmers. The present study was undertaken to encourage the farmers to cultivate fodder grasses in their farm. A live demonstration of fodder crops during 2017-18 was under taken in Hoskere village of Jagalur taluk, Davanagere district, Karnataka, to educate the farmers in cultivating perennial fodder grasses.

RESEARCH METHODOLOGY

The present study with an objective to assess the socio-economic profile of respondents of Hoskere village of Jagalur taluka of Davanagere district of Karnataka. The data were collected from 200 respondents of all the groups using structured pre tested interview schedule, tabulated, analysed using statistical tools and conclusions were drawn. The dairy farmer with the herd size of 5- 6 lactating animals was selected randomly. Shri Basavanagowder S/o Sannappagowder at Hoskere village of Jagalur Taluk, Davanagere district was identified for this activity. Farmers were given 11 varieties of fodder crops, seeds and fodder trees. They also provide initial technical guidance, critical inputs such as fodder root slips, fodder seeds and fertilizers for establishing the fodder nursery in their farm plot. Each fodder crop was grown in 2 gunta area, respectively. The 7 different fodder grass varieties *viz.,* Napier Grass (CO-4 and CO-3), Guinea Grass (Samruddi), Anjan grass [Local (Cenchrusciliaris)], Grazing guinea (Local), Pyara grass [Local {Brachiariamutica (Forsk.) Stapf}] and Rhodes Grass. Also given 2 different fodder crop seeds such as Multicut sorghum (COFS.29), Hedge Lucerne (Desmonthusvergatis) and 2 fodder trees such as Glyricidia (Local) and Sesbania (Local) were grown in half acre land. The quantity of fodder root slips and fodder crop seeds for 2 gunta area provided for farmers are,
  – Napier grass such as CO-4 and CO-3 each was 700,
  – Rhodes grass, Guinea grass, Pyara grass, Anjan grass and Grazing guinea was 750 and
  – Hedge Lucerne and Multicut sorghum was 0.5 kg each and
  – Fodder trees such as Glyricidia and Sesbania was 250 g each.

The scientific practice such as layout of the crop, line spacing of different crop, fertilizer application and cultivation practices were adopted. The critical inputs such as fodder root slips, fodder crop seeds and fertilizer (Urea, Diammonium Phosphate and Murate of Potash) were given to the selected farmer. The farmers were educated at three different levels.

Level 1:
The selected village farmers assemble at a one place and highlight the objectives of the study and interested one farmer should select. After selection of the farmer, they were highlighted on the necessity for growing fodder grass as intercrop and the benefits they will reap out of it.

Level 2:

After convincing the farmer demonstration of preparation of seed bed and sowing technique was shown

Level 3:

After that planting/ sowing of grass seedlings and fodder crop seeds to the field were demonstrated and also the method of utilization of the fodder grass and fodder crop seeds was explained.

The sowing operation of fodder crops was taken during *Kharif* season *i.e.* August month of 2017-18. Farmers were trained for cultivation, management and establishment of different fodder crops. Crop protection activities such as thinning, controlling weeds through intercultivation and manual hand weeding were operated timely. The grasses can be harvested upto 6-8 years in the fixed land. So the first cutting of fodder grass verities were done during 85 DAP (Days after planting) and respective cutting was done at 45- 50 days interval, on an average 5 cutting were done in a year. The other fodder crops such as hedge Lucerne and multicut sorghum were harvested at 60-65 Days after sowing (DAS) and subsequent cutting was done at 30- 35 days. Similarly the milk yield of animals, fat and SNF content were recorded from the farmer who participated in the study. The annual expenditure for fodder production was calculated for per hectare of land.

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Socio-economic profile of the respondents:

The socio-personal characteristics of dairy farmers of Hoskere village in Davanagere district were studied and the results are presented in Table 1.

The study revealed that half (54.5%) of the respondents were of middle aged and their age ranging from 25 to 50 years followed by the category of young (<25 yrs) and old (>51 yrs) which accounts for 27.0 and 18.5 per cent, respectively due to the reason that middle aged people involved in dairy practices to earn livelihood for their families. The findings are in conformity with the findings of Kumar (2011) and Verma (2012). Further the study showed that half (54.5%) of the male respondents and only 45.5 per cent female respondents are in their family. It is due to fact that males were taken the leadership activities in running the agriculture and dairy farm and the main source of income was from dairying only. The finding is in line with the result of Biwott and Chepchumba (2016) who showed male respondents were in more number in keeping dairy as farming. In case of literacy, 91.5 per cent of the respondents were literates having education of different levels. This indicated that respondents had accessibility to education and realized its importance indecision making process. The findings of the study were in agreement with the findings of Mujahida and Aparna (2013) who reported that, majority of the respondents had primary school education.

More than half of respondents (69.0%) belonged to category of small family size. One-third of respondents (19.0%) had medium family size and only 12.5 per cent of respondents had large family size. The reason for this might be that majority of the respondents had nuclear families. Similar results were reported by Satish (2010). Majority of the respondents (62.5%) belonged to nuclear type of family and 37.5 per cent of respondents belonged to joint family. The reason might be the better quality of life as nuclear family has less likelihood of sharing of facilities or resources. Similar results were reported by Satish (2010). Regarding the land holding, the data indicated that most of the dairy farmers were marginal farmers (44.0%) followed by small farmers (31.5%) and 12.5 per cent were large farmers. Interestingly, the study reported that 12.5 per cent farmers were landless. Analogous findings were also reported by Bhosale (2003).

Majority (67.00%) of the respondents had Agriculture and animal husbandry as their main occupation. This could be attributed to the fact that both the activities of agriculture and animal husbandry are interdependent and the respondents were convinced of the advantage of integrated farming system. These findings are in conformity with the findings of Gour (2002). This is because integrated farming is widely practiced in the villages of Davanagere

K.C. Veeranna, B.R. Manjith Kumar, C.B. Madavaprasad and V. Nagabhushan

Table 1 : Socio-economic profile of farmers of Hoskere village of Jagalur taluk Davanagere district			(n=200)
Variable	Category	Frequency	Percentage
Age	Young age (18-25)	54	27.0
	Middle age (25-35)	45	22.5
	Upper middle age (35-50)	64	32.0
	Old age (51or above)	37	18.5
Sex	Male	109	54.5
	Female	91	45.5
Education	Illiterate	17	8.5
	Primary school (1 to 4th)	35	17.5
	Middle school (5th to 7th)	44	22.0
	High school (8th to 10th)	67	33.5
	Higher education (PUC and Degree)	37	18.5
Family size	3-5 members	138	69.0
	6-8 members	38	19.0
	Above 9 members	25	12.5
Family type	Nuclear	125	62.5
	Joint	75	37.5
	Landless	25	12.5
Land holding	Low (1-3 ac.)	63	31.5
	Medium (4-8 ac.)	88	44.0
	High (>8 ac.)	25	12.5
Main occupation	Agricultural labour	42	21.0
	Agriculture	60	30.0
	Dairy animal keeping	74	37.0
	Goat keeping	23	11.5
Experience in dairy farming	<5 years	38	19.0
	5-10 years	74	37.0
	>10 years	88	44.0
Animal size	1-3 animals	112	56.0
	3-5 animals	38	19.0
	>5 animals	50	25.0
Experience in green fodder performance	Good	62	31.0
	Not aware	138	69.0
Type of animal feed	Green fodder	16	8.0
	Dry fodder	65	32.5
	Concentration feeds	57	28.5
	Others	62	31.0
Availability of green fodder seeds/roots	Aware	62	31.0
	Not aware	138	69.0
Reasons for Preferring Dairy Farming	Profitable business and getting continuous income	175	87.5
	Less investment coupled with immediate returns	163	81.5
	Dairy is better than crop production and business	138	69.0
	Milk used for domestic use	200	100.0
	Livestock and crop production together is better	163	81.5
Annual income (Rs.)	<35,000	87	43.5
	35,000-50,000	38	19.0
	50,000- 75,000	75	37.5
	>75,000	0	0.0

district by resource poor farm labourers to earn additional source of livelihood.

However, 19.0 per cent of dairy farmers had low experience in dairying, whereas, 37.0 per cent of dairy farmers were of medium experience in dairying and 44.0 per cent of dairy farmers had high (above 10 years) experience in dairying. Hence, the respondents were under medium and high level experience in dairying. The possible reason for low experience of dairy farmers could be due to old age and middle age of the respondents. This could be due to their traditional occupation of middle and old age group. Now days, due to unemployment problem for educated youth, they are pronged to begin with dairying profession allied with agriculture. Since they are newly entering into the dairying profession, they might have less experience as compared to traditional profession of dairying, followed by majority of dairy farmers. The similar results were reported by Mali *et al.* (2014).

Whereas, majority of dairy farmers possessed low level herd size (56.0%) followed by High (25.0%) and medium (19.0%). The probable reason may be that, dairy farmers have dependent on cultivation of field crops and they may have one or two animals which will be just for subsistence and also the area comes under dry land area, so only cropping during rainy season and the availability of fodder is also low and the family type was nuclear *i.e.* lower member in the family may be the one of the reason for low level in herd size.

Sixty nine per cent of the dairy respondents were not aware about importance of green fodder and its performance in dairy, while 31 per cent of the respondents were know the importance of green fodder for animal feed. Jagadeeswary *et al.* (2010) reported that none of the farmers cultivated fodder.

Majority of farmers were fed dry fodder (32.5%) followed by other fodders (31.0%) such as weeds, grass in canals and field bunds etc., and Concentrate feeds (28.5%). Only 8.0 per cent respondents were fed green fodder to their animals. This may be due to low level awareness about green fodder and its importance to the animal feed. Sixty nine per cent of the respondents were don not aware on source of fodder seeds/ root slips, while only 31.0 per cent of the respondents were known about the source of green fodder seeds/ root slips. There was a need to guide the farmers about importance of green fodder, enrichment and conservation of the fodder for future.

Almost all the farmers were taking up the dairy activity by hereditary. However, they preferred dairying because of lack of knowledge on other activities coupled with familiarity with the vocation (Table 1). Majority of the farmer opined that dairying is a profitable business with continuous and immediate income. They also opined that at any point of time marketing is not a problem for milk. At the same time farmers faced few challenges like un-remunerative milk prices, lack of assured irrigation, labour problems, high cost of inputs, management and disease problems and lack of enough knowledge on dairy farming. The present study exhibited that majority of dairy farmers (43.5%) had low income followed by medium (19.0%) and high income groups (37.5%). Similar findings were reported by Bhople and Alka (1998).

Constraints faced in dairy farming:

Constraints faced by the dairy farmers in various areas of the dairying were recorded and are presented in the Table 2.

Nearly 80 per cent of the respondents reported non - availability of fodder round the year and Low availability of green fodder followed by inadequate knowledge about feeding (81.5%) as the major constraints in dairy farming. Similar findings were previously reported by Sagari (2001). Most of the farmers face problem in low availability of green fodder (75.0%) and lack of awareness about recommended feeding practices (75.0 %). Difficult to get seeds/ planting materials (69%), non-availability of subsidized feed, fodder and other supplements (62.5%) and High cost on feeding and storage of feed (62.5%) was also reported by farmers. Most of the farmers (60.0%) faced the problem of lack of grazing land for the animals which are in agreement with the results observed by Rathore *et al.* (2009).

The present study indicated that the majority of farmers reported that the lower productivity and low fat content in the milk of the local breeds (62.5 %) and Knowledge about source of breeds (62.5 %) were the major constraints followed by Poor adaptability of cross bred animals (56.5%). Sivanarayana and Reddy (1995) also highlighted the poor productivity of the indigenous breeds and poor adaptability of the crossbreed, respectively.

Health care of the animals was a major constraint for majority (75.0%) of the dairy farmers since they lacked timely veterinary and health care services. The study depicted that 69.0 per cent farmers felt high cost of medicine

Table 2 : Distribution of the dairy farmers on the basis of constraints faced in dairy farming		
Sr. No. Constraints	Frequency	Percentage
Feeds and feeding		
1. Inadequate knowledge about feeding	163	81.5
2. Non-availability of fodder round the year	163	81.5
3. High costs on feeding and storage of feed	125	62.5
4. Lack of grazing land	120	60.0
5. Low availability of green fodder	150	75.0
6. Difficult to get seeds/planting materials	138	69.0
7. Non-availability of subsidized feed, fodder and other supplements	125	62.5
8. Lack of awareness about recommended feeding practices	150	75.0
Breeds		
1. Low productivity of local breeds	125	62.5
2. Low fat level in milk of local breeds	125	62.5
3. Poor adaptability of cross bred animals	113	56.5
4. Knowledge about source of breeds	125	62.5
Veterinary / health care service		
1. Lack of timely veterinary services	150	75.0
2. High cost of medicine and treatment services	138	69.0
3. Disease occurrence	125	62.5
4. Difficult to get proper information	125	62.5
Breeding constraints		
1. Identification of heat symptoms	100	50.0
2. Timely availability of AI services	113	56.5
3. Repeat breeding / reproductive problems	100	50.0
Marketing		
1. Low price of milk	63	31.5
2. Non-functional milk cooperative societies	50	25.0
3. Irregularity / delay in payment	75	37.5
4. Milk rejection due to mal-practices	75	37.5
Care and management		
1. Animal sheds (Housing facilities)	88	44.0
2. Milking methods	63	31.5
3. Farm and dairy records	150	75.0
Know-how and accessibility constraints		
1. Lack of awareness about developmental programmes and schemes	150	75.0
2. Difficulty in acquiring knowledge and skills	125	62.5
3. Accessibility to officials and organizations	138	69.0
4. Target group oriented development programmes	150	75.0
5. Labour wages in dairy is expensive	163	81.5
Personal constraints		
1. Low literacy level	75	37.5
2. Lack of communication skills	150	75.0
3. Lack of training	150	75.0
4. Lack of rewards and recognition	100	50.0
5. Lack of aptitude for work	150	75.0
Other		
1. Requirement of special trainings to get higher yields	175	87.5
2. Irrigation problem	38	19.0
3. Difficult to store the produce	88	44.0
4. Requirement of high crop management practices	75	37.5
5. Difficult to maintain the harvest schedule	88	44.0
6. Less visit of extension personnel	138	69.0

and treatment services, Difficult to get proper information (62.5%) and the disease occurrence (62.5 %) itself as the major constraint. Similar findings were reported by Rathod Kumar *et al.* (2011). Similar findings were also reported by Rathod Kumar *et al.* (2011) who suggested about the need for training the dairy farmers about basic knowledge of the diseases.

Among breeding constraints majority of them responded (75.00%) lack of regular veterinary services is the major constraint following timely availability of AI services (56.5%), identification of heat symptoms (50.0%), repeat breeding / reproductive problems (50.00%) due to limited availability of veterinary facilities and personnel and low level of awareness and training among the farmers about dairy animal management practices. The findings are in conformity with the findings of Rathore Kumar *et al.* (2009) and Kunte *et al.* (2015)

In the district marketing constraints were reported less than 50.00 per cent of the farmers. Milk rejection due to malpractices (37.5%) and Irregularity / delay in payment (37.5 %) were reported by the farmers due to low fat content in milk. Rathod Kumar *et al.* (2011) also reported the similar findings. Followed by low procurement price for milk (31.5%) and Non Functional milk co-operative societies (25.0%) were perceived as the constraint by less number of the farmers and this category of the farmers were belonging to the private dairy pourer members who were affecting by this. This finding is in agreement with the findings of Mahalakshmi *et al.* (2016) who reported unstable price of the milk reported as the second major constraint in his study.

The majority of respondents reported about the problem of inability to maintain farm and dairy records (75.0%) followed by animal shed or the housing facilities (44.0 %) because of their poor economic status. This is in conformity with the findings of Prakash Kumar *et al.* (2011). Few of the farmers also reported about inadequate knowledge of proper milking methods (31.5%). These results are found in line with the study conducted by Sharma and Intodia (1991) who revealed high educational gap in management practices like lack of knowledge about milking methods.

Among the know-how and accessibility of the constraints majority (81.0%) of them responded reported Labour wages in dairy is expensive followed by lack of awareness about developmental programmes and schemes (75.0%) and Target group oriented development programmes (75.0%) were the major constraint. The present study is in line with the findings of Sasidhar *et al.* (2001). Further, respondents also reported difficulty in acquiring knowledge and skills (62.5%), and accessibility to officials and organizations (69.0%).

Whereas, in personal constraints majority of the respondents reported that lack of training (75.0%), lack of aptitude for work (75.0%) and lack of communication skills (75.0%) and followed by Lack of rewards and recognition (50.0 %) and low literacy level (37.5%). As the people live in the rural area and due to resource poor condition farmers possess the low level of education but farmers perceive trainings should be given to this particular group so that they can cope up with the above hindering factors which are in agreement with the findings of Anand *et al.* (2012).

Among other constraints, the majority of the farmers (87.5%) opined that require a special trainings to get higher yields in dairy farming for improving their livelihood. Similarly extension personnel working (69.0%) and disseminating information on harvest schedule of fodder crops is very limited. Even in milk federations, only employ graduates to work on fodder extension because of lower knowledge about fodder production and its utilization, it becomes difficult for the farmers to obtain information on fodder crops. Green grasses lose its fodder value if it is dried. So, the crop can not be stored and stacked for future use. This could be the reason of expressing difficult 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).

Production:
Green fodder production/ yield of fodder plot:
The production/yield of fodder crops from nursery plot *i.e.*, the green fodder production was recorded from the fodder bank was depicted Table 3. The production of Napier CO-4 and CO-3 was 86 tons/ac/y and 102 tons/ac/y, respectively, Guinea grass was 62 tons/ac/y, Rhodes grass was 73 tons/ac/y, Hedge Lucerne was 21 tons/ac/y, Pyara

Table 3: Production and economics of different fodder crops						
Sr. No.	Crop	Variety	No. of cuttings (August 2017-February 2018)	Average yield per 2 gunta area per cutting (kg)	Average yield per 2 gunta area per year (Ton)	Green fodder Yield (t/ac/y)
1.	Napier grass	CO-4	4	430	1.72	86.0
2.	Napier grass	CO-3	5	410	2.05	102.5
3.	Rhodes grass	Rhodes	4	365	1.46	73.0
4.	Guinea grass	Samruddi	4	310	1.24	62.0
5.	Grazing guinea	-	5	310	1.55	77.5
6.	Anjann Grass	-	4	290	1.16	58.00
7.	Para grass	-	4	260	1.04	52.00
8.	Hedge Lucerne	Desmonthusvergatis	3	140	0.42	21.00
9.	Fodder Sorghum	COFS.29	5	310	1.55	31.00

Note: The costs were adopted for calculating the economics was listed here, grass root slips 0.30/root slip, Rs.2 per kg of Cereal green fodder,Rs.3 per kg legume green fodder, labour wage 300/day, Land preparation 300/hr, Fertilizer such as Urea, DAP and MOP was 6.4, 21.6 and 19.0/kg and Bullock pair was 400/pair/day and Seed cost for sowing such as Root slips was 0.75/root slip, 500/ kg of hedge Lucerne seed and 400/ kg of multicut sorghum.

grass was 52 tons/ac/y, Anjan grass was 58 tons/ac/y, Grazing guinea was 77 tons/ac/y and Fodder sorghum was 31 tons/ac/y. The average green fodder yield per 2 gunta area was also furnished in the Table 3.

Economics of fodder crops :

The cost of cultivation was estimated. Since fodder crops except maize are perennial crops in nature and these can be harvested 3-4 times in a year (multicut). The establishment (Input) cost such as seed cost, fertilizer cost, labour hiring cost and finally harvesting costs were worked out to calculate the total cost of production. Then, the establishment cost was amortized to incorporate it in the calculation of annual cost.

The total annual expenditure per 2 gunta (200 m^2) area of different fodder grass from fodder nursery plot was Rs. 11500 and if there is no maintenance of livestock in their farm the total income generated only from the nursery from different green fodder crops production was Rs. 25400. The net profit from different fodder crops from fodder nursery plot was Rs. 13900. Moreover, green fodder and dry fodder were available from fodder crops round the year for feeding of animals in their dairy farm. The net income from fodder crops was low but the advantage was growing fodder crops will helps nutritionally rich green fodder was available all-round the year for their own animals in the farm that led to increase in the milk production and quality of milk.

Advantages of selected former got:

– Green fodder and dry fodder were available from fodder trees and fodder crops all-round the year for their own animals in dairy farm.

– Good quality and nutritional rich green fodder were available to the farm animals. The objective of introducing the fodder shrubs was to provide a low-cost, easy-to-produce protein source that could also contribute to sustainable land management.

– Increased milk production of the cross bred cows with 1.0-2.0 l/ day.

– Improved lactometer reading (degree level) to 24 to 27

– Green fodder helps the animal health to be in good and productive

– Improving the Fat content of the milk by 0.3 to 0.5 per cent

– Earning the income around the year

Direct benefits of the fodder nursery to the farmer:

– The economics produce from a dairy unit of about 6 milch cattle can realize a net income of Rs. 50,000 to Rs. 75,000 every year. Similar results were obtained in the studies of Jayashree and Suneetha (2010).

– He can also cow dung and cow's urine that could be effectively recycled manure preparation and used as

Table 4 : Economics of fodder nursery of Shri Basavanagowder S/o Sannappagowder at Hoskere village		
Sr. No.	Particulars	Amount (Rs./2 gunta)
Expenditure		
1.	Seeds and root slips cost	3800
2.	Cost of Fertilizers (50kg urea, 25 kg Dap and 5 kg MOP)	1700
3.	Cost of FYM (200kg/2gunta)	1500
4.	hiring labours (Sowing, weeding and harvesting) (15 x 300)	4500
	Total	11500
Income		
1.	Selling of Green fodder (If animals are not in the farm)	
	Cereals green fodder (Rs. 2/kg)	1260
	Legume green fodder (Rs. 4/kg)	23540
2.	Selling of root slips	600
	Total	25400
	Net income (Rs./ 2 gunta area per year)	13900

source of nutrient for fodder crops and also other crops. Similar results were obtained in the studies of Jayashree and Suneetha (2010).

With this demonstration Farmers have definitely observed that their livestock had performed better with the forages and they will sustain their animals in the dry season. This study was effective in creating an impact on the dairy farmers and this has to be popularized in a large scale in this area of shrinking agricultural fields and the demand for good quality milk and milk products

Conclusion :

The present study helped us to derive the conclusion that majority of the farmers had poor income. Farmer should be made to adopt the scientific farming practices which will lead to better future outcomes. The price offered for the sale of milk with respect improve in Fat and SNF content of milk should be increased which in turn helps farmer to improve socio-economic status and larger productivity. With this the participatory forage bank technology development and evaluation may be the key to improving adoption of forage crops at small holder farmer in Hoskere village and it increase the nutritional value of the feeds, reduce the risk of pests and diseases and promote local biodiversity. Working with farmer may enhance adoption of the forage technologies as the farmers can share experiences and cost of inputs required for the technologies to succeed.

LITERATURE CITED

Anand, Raja R., Ghoshal, T.K., Sundaray, J.K., De, D., Biswas, G., Kumar, S., Panigrahi, A., Kumaran, M. and Pradhan, J.K. (2012). Status and challenges of livestock farming community in Sunderbans India. *Indian J. Anim. Sci.,* **82** (4): 436-438.

Biwott, Dominic Kimutai and Chepchumba, Tuwei Ruth (2016). Does provision of loans and training services by dairy farmers association affect farmers livelihood in north rift region, Kenya? *Internat. J. Economics Commerce & Mgmt.,* **4** (2): 605-623.

Bhople, R.R. and Alka, P. (1998). Socio-economic dimensions of farm women labor. *Rural India*, **61** (9&10):192-195.

Bhosale, V.B. (2003). Role of women in dairy enterprises in Thane district of North Konkan region of Maharashtra. M.V. Sc Thesis, Maharashtra Animal Fishery Science University, Nagpur (India).

Chandrasekar, G.K., Satyanarayan, K., Jagadeeswary, V. and Shilpa Shree, J. (2017). Relationship between socio-economic and Psychological Factors of Dairy Farmers with Days Open – A Study in Rural Karnataka. *Internat. J. Pure App. Biosci.*, **5** (1): 171-177.

Gour, A.K. (2002). Factors influencing adoption of some improved animal husbandry practices of dairying in Anand and Vadodara districts of Gujarat State. Ph.D. Thesis, GAU, SardarKrushinagar, India.

Jagadeeswary, V.K., Sathyanarayan, V., Chandrashekhar Murthy, S., Wilfred Ruban and Sudha, G. (2010). Socio-economic status of livestock farmers of Narasapura village - A benchmark analysis. *Veteri. World*, **3**(5) : 215-218.

Jayashree, R. and Suneetha, A. (2010). Perennial fodder grasses as intercrop in Areca and Coconut gardens. *Veteri. World*, **3** (2): 68-70.

Kunte, Bhagyashree, S. and Patankar, Sanjay (2015). A literature review of Indian dairy industry. *Internat. J. Mgmt. Res. & Rev.,* **5** (6): 341-350.

Kumar, P. (2011). Study of input delivery system of department of animal husbandary in Purnia district (Bihar), M.Sc. Thesis, National Dairy Research Institute, Karnal, Haryana (India).

Mapiye, C., Foti, R., Chikumba, N., Poshiwa, X., Mwale, M. and Mupangwa, J.F. (2006). Constraints to adoption of forage and browse legumes by smallholder dairy farmers in Zimbabwe. *Livestock Res. for Rural Dev.,* **18**(12): 66-71.

Mujahida, S. and Aparna, J. (2013). Correlation of Socio- Economic and Communicational Attributes with Adoption of Dairy Practices. *Internat. J. Res. Engg. Technol. & Mgmt.*, **1** (01): 1-3.

Mali, K.N., Belli, R.B. and Kitturmath, M.G. (2014). Study of the socio - economic characteristics of dairy and non- dairy farmers. *Agric. Update,* **9**(1):54-58.

Mahalakshmi, S., Devi, M.C.A. and Kiran, R. (2016). Socio personal profile of resource poor dairy farmers and constraints in dairying. *Res. J. Animal Husbandry & Dairy Sci.,* **7**(2) : 91-95.

Prakash Kumar, R., Landge, Sariput, Nikam, T.R. and Vajreshwari, S. (2011). Socio-personal profile and constraints of dairy farmers. *Karnataka J. Agric. Sci.,* **24** (4) : 619-621.

Rathore, R.S., Singh, R. and Kachwaha, R.N. (2009). Constraints in adoption of recommended dairy cattle management practices. *Indian J. Dairy Sci.*, **62** (5): 403-409.

Rathod Kumar, P., Landge, S., Nikam, T.R. and Vajreshwari, S. (2011). Socio- personal profile and constraints of dairy farmers. *Karnataka J. Agric. Sci.,* **24**(4): 619-621.

Satish, H.S. (2010). Study on farmers perceptions, preferences and utilization of SRI and traditional paddy straw for livestock at Dharwad. M.Sc. (Ag.) Thesis, University of Agricultural Sciences, Dharwad (Karnataka) India.

Sasidhar, P.V.K., Rao, S.B. and Suresh Kumar, R.V. (2001). Constraints and suggestions expressed by veterinary assistant surgeons. *Indian Vet. J.,* **78** : 540 – 541.

Sagari, R. (2001). Changing livelihoods, livestock and local knowledge systems: Women stake their claim in Andhra Pradesh and Maharashtra. *Indian J. Gender Studies,* **2**(2) :175-194.

Sivanarayan, G. and Reddy, Jayarama (1995). Constraints in the adoption of improved sheep and goat practices by the small and the marginal farmers of diversified farming. *Indian J. Dairy Sci.,* **48**(4):306-308.

Sharma, F.L. and Intodia, S.L. (1991). Technological gap in adoption of improved animal husbandry practices. *Maharashtra J. Extn. Edn.,* **10** (2) : 128-132.

Verma, H. (2012). Productive and reproductive performances of dairy animals in Faizabad district of Uttar Pradesh M.V. Sc. Thesis, NDRI University, Karnal, Haryana (India).

9th Year
★ ★ ★ ★ ★ of Excellence ★ ★ ★ ★ ★