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Promotion of mixed fodder cultivation among the livestock growers through frontline demonstrations

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ABSTRACT

Livestock rearing plays a significant role in the economy of India. Globalization has increased demand for milk and other dairy products worldwide. However supply and production of quality animal products are a challenge faced by farmers and entrepreneurs due to lack of knowledge about mixed fodder cultivation techniques and poor availability of quality fodder. Green fodder is an economic source of nutrients for the dairy animals. To address this issue KVK, Tenkasi district, Tamil Nadu demonstrated mixed fodder cultivation in 10 farmers fields with the technical support and provided the seeds/fodder slips of CO5, Hedge Lucerne, COFS31 and Agathi to the farmers. In these demonstrations the average yield of mixed fodder unit was 216.45 q/acre when compared with conventional method (174.80 q/acre). The highest net return was noticed in mixed fodder cultivation with Rs 1,40,881/ha as compared to farmers practice (Rs 85,046/ha). There was 16.18 per cent increase in milk yield noticed due to balanced green fodder availability throughout the year. The results indicated that the adoption of mixed fodder cultivation enhances the milk yield and reduces the cost of cultivation which in turn provides higher returns to farming community.

Keywords: Mixed fodder cultivation; milk yield; livestock farming; green fodder; economics, yield

INTRODUCTION

Agriculture and animal husbandry are the important sectors in India which are main sources of income for many of the farmers in the country. Livestock rearing predominantly depends upon open grazing or stall feeding on the byproducts of agricultural produce like paddy straw, wheat straw, hay and green or dry grass collected from forest. It is estimated that feed and fodder accounts for 60-70 per cent of total cost in livestock production (Anon 2008). These are the most valuable and cheapest sources of food for livestock. They are a rich source of metabolizable energy, nutrient elements, carbohydrates and protein.

Fundamental aspects of nutrients associated with the use of fodder and feed are important consideration for quality of milk. The available forages are poor in quality being deficient in available energy, protein and minerals. To compensate for the low productivity of the livestock, farmers maintain a large herd of animals which adds to the pressure on land and fodder resources. At present the country faces roughly a net deficit of 63 per cent green fodder cultivation for livestock farming. Due to lack of green fodder supplement, animals do not get sufficient nutrients. This affects quality and quantity of milk. Mixed farming and livestock rearing are the integral part of rural living. TANUVAS, Chennai and TNAU introduced mixed fodder cultivation technology to benefit the livestock growers. The growing of fodder crops in mixture with legumes enhanced fodder palatability and digestibility (Chaudhary and Hussain 1985).

Microorganisms present in green fodder help in improving digestibility of animals. A constant supply of good quality forage in sufficient quantities is a basic necessity in livestock farming. With quality nutritional fodder, milk production can be increased up to 100 per cent (Heath 1985). Generally good quality forage is high in protein and digestible nutrients and low in fiber and lignin. Also animal performance is a better indicator of forage quality. The combination of multipurpose tree

species, shrubs, grasses and legumes can play a vital role in not only improving production of fodder but also assured availability of fodder throughout the year (Singh et al 1997). Increased use of green fodder can reduce the purchase cost of feed/fodder.

Keeping this in view, the KVK, Tenkasi district, Tamil Nadu conducted frontline demonstrations (FLDs) of mixed fodder cultivation techniques among the livestock growers for promoting mixed fodder cultivation. Frontline demonstration is the concept evolved by Indian Council of Agricultural Research (ICAR) with the objective of demonstrating newly released varieties and technologies in the farmers fields in order to show the production potential of a particular variety or technology to the specific agro-climatic conditions. The present study was undertaken to assess the impact on milk yield in mixed fodder feeding dairy cows in Tenkasi district.

MATERIAL and METHODS

The present study was conducted in the Thuvarankadu village of Keelapavoor block, district Tenkasi, Tamil Nadu in 2018-2019. Each demonstration was conducted in an area of 0.5 ha and the monocropping system of fodder cultivation was considered as farmers practice. Ten farmers were selected for demonstrations and they were trained about importance of mixed fodder cultivation and integrated crop management practices in fodder cultivation and given method demonstration about seed treatment of fodder seeds. The selected dairy farmers were trained on all scientific mixed fodder cultivation practices (Table 1) and supported with of CO5 slips, COFS31 and Hedge Lucerne seeds per ha in 40:30:30 ratio and tree fodder (Agathi) cultivated on ridges.

The demonstrated fields were regularly monitored and observed for growth performance by the KVK scientists. At the time of harvest yield data were collected from the demonstration fields and farmers practice. Cost of cultivation, net income and benefit-cost ratio were worked out. To study the impact of FLDs, the data from demonstrations and farmers practice were analyzed. The fodder yield (q/acre), milk yield per unit (4 dairy cows), gross cost, gross return and net return were calculated to assess the effect of mixed fodder promotion in the area.

RESULTS and DISCUSSION

The results of the demonstrations conducted in the farmers fields are presented in Table 2. In these mixed fodder unit demonstrations, the average yield was 216.45 q/acre as compared to conventional method

Table 1. Fodder cultivation practices demonstrated under frontline demonstrations (2018-19)

Fodder	Seed requirement (kg/acre)	Spacing (cm)	Basal dose of fertilizer applied (kg/ha)			Harvesting period (days) (first/second)
			N	P	K	
Fodder sorghum CO FS(31)	2-4	45 x 30	18	16	8	70/60
Co 5	16,000 slips	50 x 50	20	20	16	85/45
Hedge lucerne	8	30 x continue	10	16	8	80/45
Agathi	3	100 x 30	5	4	10	120/60

Table 2. Yield, net return and B-C ratio as influenced by mixed fodder cultivation and farmers practice

Attributes	Mixed fodder cultivation	Farmers practice
Yield (q/acre)	216.45	174.80
Cost of cultivation (Rs/ha)	1,33,637	1,28,524
Gross return (Rs/ha)	2,74,518	2,13,570
Net return (Rs/ha)	1,40,881	85,046
BCR	2.05	1.66
Milk yield (litre)/unit (4 cows)	12,845	11,056

ie monocropping of fodder cultivation (174.80 q/acre). There was 23.83 per cent yield increase noticed by adopting mixed fodder cultivation techniques. The highest net return was recorded in mixed fodder cultivation with Rs 1,40,881/ha as compared to farmers practice (Rs 85,046/ha). The benefit-cost ratio was 2.05 in mixed fodder cultivation units and 1.66 in conventional method.

The results also revealed that milk yield increased from 11,056 litre/4 cows to 12,845 litre/4 cows with an average milk increase of 1.2-2.0 litre/ day/cow. There was 16.18 per cent increase in milk yield observed by adopting this mixed fodder cultivation technique. Increase in milk yield could be due to the reason that animals got balanced green fodder throughout the year.

These findings are similar to the reports of Khan et al (2009) and Vinothraj et al (2019) who found that farmers income was two-fold higher when green fodder was fed to the animals during monsoon and winter season. The present finding of better economic returns after feeding mixed green fodder are in line with the findings of Hossain et al (2017) who reported that income of farmers increased significantly by Rs 31.03 after incorporating green fodder in the ration of buffaloes.

By adopting this mixed fodder cultivation, there is availability of different types of nutritious fodders with low cost of cultivation. To create the awareness about the new varieties of mixed fodder varieties a mixed fodder demonstration unit has been established at KVK farm which includes cultivation of CO4, CO-5, COFS-29, COFS-31, Velimasal, Muyal Masal, Agathi and other tree type fodders. Also fodder seed bank has been established at the KVK farm to ensure the availability of seed material for farming community.

CONCLUSION

The results of the present study indicated that the mixed fodder cultivation enhances the milk yield, reduces the cost of cultivation and increases the net return and B-C ratio. Hence this mixed fodder cultivation has wider scope for increasing milk production rather than monocropping of fodder cultivation. This can ultimately help the livestock growers to grow animals in profitable manner.

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