

Perennial fodder grasses as intercrop in Areca and Coconut gardens

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Abstract

The present study was undertaken to encourage the farmers to cultivate fodder grasses as an intercrop in the areca and coconut gardens. A live demonstration of fodder crops was under taken in 12 villages of Bhadravathi taluk, Shimoga district, Karnataka, to educate the farmers in cultivating perennial fodder grasses in their areca and coconut gardens as inter crops. 100 farmers were selected randomly from the 12 villages for demonstration of intercropping of fodder grass. Amongst these 58% of the farmers could achieve success by transplanting the fodder grass seedlings to areca & coconut gardens as intercrop. In 6 villages the success rate was to the tune of 60-80%, 4 villages were in the range of 40-60% and the remaining 2 villages showed less than 40% success. The success of the program depended on the necessity for fodder crops or the association of the farmers with Dairy co-operative societies.

Keywords: Perennial Fodder Grasses, Crop, Coconut, Areca, Farmer.

Introduction

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. Farmers nowadays go in for intensive dairying for want of grazing land. In this juncture it is very essential for the farmer to utilize the available cultivable space for fodder production too. To make best use of the available land and to educate the farmers on fodder grass varieties this study was undertaken.

Materials and Methods

Twelve villages that are irrigated through the Bhadra left bank Channel of Bhadravathi taluk, Shimoga district, Karnataka was selected for the study. Most of the farmers' identified were having dairying as a subsidiary enterprise with farm strength ranging from 2-6 cross bred cows. Of them 50 % were depending mainly on dairying and had hardly 1-2 acres of areca or coconut gardens. Fodder grass seed of Guinea grass varieties (Makeuni, Hamil, Riversdale) supplied by the Central fodder seed production centre, Hezzarghatta, Bangalore was utilized. The seed of 1 Kg packets were supplied along with the required quantity of Diammonium Phosphate (DAP) and urea. The farmers were educated at three different levels.

Level 1: After selection of farmers they were asked to assemble at a common place in the village and 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's demonstration of preparation of seed bed and sowing technique was shown in few of the farmers plot.

Level 3: After that further transplantation of the grass seedlings to the coconut and areca fields was demonstrated and also the method of utilization of the fodder grass was explained.

Field demonstrations were done in nearly 70% of the selected farmer's plots and the remaining farmers also learnt by participating in the demonstrations conducted in the neighboring fields. Raised seed beds of 15 ft X 15 ft size were prepared in each of the farmers land and the fodder grass seeds after proper treatment with organic manure were sown. The plot was covered with coconut leaves or areca leaves until it sprouted, with sprinkling of water daily to the seed bed. In the mean time the land for transplanting of fodder grasses in the areca or coconut gardens was prepared. After 20 days when the seedlings had sufficient growth they were transplanted as a single row with a distance of 8" to 1 foot depending on the type of soil. Totally about 25 acres of gardens were targeted to be brought under fodder intercropping system. After a period of 3-6

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Table-1.

Sr. no	Villages	No of demon- stration	Area targeted	No. of Successful (in ha)	Achieved area (in ha)	% of success transplantation
1.	Kudaligere	10	2.5	5	1.25	50.00
2.	Hosahalli	5	1.25	3	0.75	60.00
3.	Kalpanahalli	2	0.5	0	0	0.00
4.	Aralhalli	15	3.75	8	2.0	53.33
5.	Basalikatte	6	1.5	3	0.75	50.00
6.	Attigunda	12	3.0	7	1.75	58.33
7.	Seetharamapura	10	2.5	8	2	80.00
8.	Arakere	11	2.75	4	1	36.36
9.	Kodihalli	4	1.0	3	0.75	75.00
10.	Arebilichi	13	3.75	8	2	61.54
11.	Maarshethalli	6	1.5	5	1.25	83.33
12.	Kallihal	6	1.5	4	0.5	66.67
	Total	100	25.5	58	14	58.00

months the grass was available for cutting and feeding.

Results and Discussion

Guinea grass (*Panicum maximum*) is a popular fodder grass of the tropics suited to the agro climatic conditions. It can be profitably grown as a component of agro-forestry systems and comes up well under coconut and other trees. The important varieties are Makueni, Riversdale, Hamil, PGG-4 and FR-600. Seeds and slips can be used as planting material. If seeds are used (3 kg/ha) they should be sown in nursery and the seedlings transplanted in the main field. The grass requires thorough cultivation to prepare a weed-free seedbed for establishment. For this, two or three ploughings and one leveling are sufficient along with application of basal dose of farm yard manure and Nitrogen Phosphate fertilizers is recommended. At planting two irrigations are required within seven to ten days for quick establishment. The crop should be subsequently irrigated depending upon the rainfall and soil type. Irrigation with cowshed washing or sewage water within 3-4 days after cutting gives better growth.

The delicate seedlings or newly emerged shoots from slips or cuttings require protection from weeds in the first two months. Two inter cultivations should be given during this period. The crop is ready for harvest when it reaches 1.5 m height. Cutting at 15 to 20 cm above the ground level is advised. The first cut is usually ready in 9-10 weeks after planting and subsequent cuts are taken at 45 to 60 days intervals. About six to seven harvests can be made in a year. Approximately 80-100 t/ha of green fodder is obtained per year. The grass tolerates shade and grows under trees and bushes and is best suitable as an intercrop in coconut gardens.

The results of the demonstration conducted in the 12 villages are given in the table:1

The farmers whose major income source was dairying tried to use this demonstration to cultivate

fodder grasses and they were able to use the available garden space for inter cropping with fodder grasses. The success was less in respect of large farmers as their dependency on dairying was less. Amongst the twelve villages, 6 villages showed a success rate of 60-80%, 4 villages were in the range of 40-60% success and the remaining 2 villages showed < 40% success. We could not achieve success in two of the villages as the farmers were not depending on dairying and they were predominantly labor classes. Of the targeted 25.5 hectares of land 14 hectares (58%) were brought under intercrop with fodder grass. As the varieties grew after each ratooning the farmers were able to supplement their animals with green roughage through out the year. High efficient use of resources to make sufficient fodder availability (Salam & Sreekumar D, 1990) was achieved by this method of intercropping. This also made the green fodder available through out all seasons. This also prevented the growth of unwanted weeds in the gardens. The advantage of ratooning of fodder grasses facilitated the dairy farmers for perennial availability of green roughage.(success story).More over it was observed that the main crop was not affected in fact the coconut yield was better as additional care was given to fodder grass which helped in the supplementation of nutrients Fodder fertilization also produced a synergistic, yield improving effect within the main coconut crop indicating that appropriate fertilization of the forage intercrop benefited the entire cropping system. (Lakshmi et al).By this the animals were seem to perform in a better, by way of increase in milk production and a comparative reduction in repeat breeding problem due to nutritional cause. The farmers were also benefited since it saved a lot of time for fetching green fodder for their animals. In the next season also there was a good yield from the grass. Further propagation of the crop was done with the transplant of side shoots from the original crop to the

channel bunds and wherever waste land was available was utilized. The selection of proper fodder grass is essential to improve productivity in silvipastoral systems. (Kumar et al. 2001). In this study the guinea grass varieties seem to perform well in the Coconut & Areca gardens. A farmer intercropping coconut with grass and maintaining a dairy unit of about 6-8 milch cattle can realise a net income of Rs.75,000 to Rs.1,00,000 every year, explained Dr. Subramanian. "He can also get about 20 to 25 tonnes of cow dung and cow's urine that could be effectively recycled for biogas production and used as a manure for increasing nut productivity," he said. (Dr Subramanian). With this demonstration the study was effective in creating an impact on the dairy farmers and this has to be popularized in a large scale in this era of shrinking agricultural fields and the demand for good quality milk and milk products.

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