



## Fodder grass cultivation in Coconut garden

P. Subramanian, Surekha, Ravi Bhat and C. Thamban

ICAR- CPCRI, Kasargod

Coconut is a small holder's crop being cultivated in humid tropics of India. It is mostly cultivated as a mono crop and coconut farming means livelihood for many of the farm families. Major soil types in which coconut is cultivated are red sandy loam, alluvial, lateritic and sandy soil.

Coconut garden is highly amenable for cultivating intercrops in the interspaces because of its wider spacing (7.5 m x 7.5 m). It is a well-established fact that a variety of crops can be successfully interplanted in the interspaces of coconut. Utilization of interspaces in coconut garden for cultivating fodder grass will provide excellent scope for coconut based mixed farming system. This in turn will help in better resource management and ensure higher returns.

### Cultivation practices

#### Varieties

Even though many fodder grass varieties are in cultivation, hybrid bajra Napier (CO3, CO(CN) 4 and CO(BN)5 and guinea grass are more popular and successfully cultivated by the farmers because

of their easy cultivation practices and higher fodder yield. These fodder grass varieties have high palatability among the milch animals. Guinea grass is also ideal for feeding goats.

#### Soil and climate

Fodder grass can be cultivated in a wide range of soils. However, well drained red sandy loam soil is best suited. It can also be successfully cultivated in hard laterite and coastal sandy soil by adopting appropriate moisture conservation practices.

It will thrive well in areas receiving evenly distributed rainfall. Irrigation is necessary during summer to get higher fodder yield.

#### Planting season

Fodder grass can be planted with the onset of monsoon (June-July). However, under irrigated condition planting can be done at any time of the year.

The varieties are Hybrid bajra Napier: (CO3, CO(CN) 4 and CO(BN) 5 and Guinea grass.



*Guinea grass as intercrop in coconut garden.*



*Hybrid bajra napier as intercrop*

### Land preparation

The land should be thoroughly ploughed twice with the onset of monsoon to remove weeds and level the land. Trenches of 30 cm width, 30cm depth are to be made at recommended spacing in between two coconut rows leaving the basin area of 2m radius. In coastal sandy soil one layer of coconut husk is to be placed in such a way that concave side is facing upwards in order to facilitate soil moisture retention. Vermicompost /cow dung @10 to 20 t/ ha should be applied in the trenches mixed with soil.

### Planting

Select well matured stem cuttings of Napier grass having two nodes and plant the cuttings in slant

position in the centre of the row in such a way that one node is inserted into the soil. In case of guinea grass rooted slips of 15 cm length are to be used. Root and shoot is to be trimmed before planting. It is advisable always to procure 10% extra planting material for gap filling requirement. Also take up planting in staggered manner at an interval of 15 days to ensure continuous supply of fodder.

### Planting material requirement

Napier grass : 27,000 two noded cuttings for planting in one ha at a spacing of 60 cm X 60 cm

Guinea grass : 30,000 rooted slips for planting in one ha at a spacing of 50 cm X 50 cm

### Manuring

Fertilizer	At planting/pre monsoon (kg/ha)		After each harvest (kg/ha)
	Hybrid Napier grass	Guinea grass	
Urea	106	65	106
Rock phosphate (Acid Soil)	162	162	-
Muriate of Potash	40	40	-
Single Super Phosphate (pH 7 and above soil)	313	313	



*Establishment of Guinea grass*



*Hybrid bajra napier*



*Establishment of hybrid bajra napier grass stem cuttings in the trenches*

For obtaining higher yield, recommended dose of organic manures and chemical fertilizers should be applied at the time of planting as basal dose. 50% urea and full dose of rock phosphate or single super phosphate are to be applied at the time of planting and the remaining 50% urea after 30 days of planting. Thereafter urea should be applied @ 106 kg after every harvest. In the second and subsequent years rock phosphate and muriate of potash should be applied during the pre monsoon period ( May-June) while urea can be applied as top dressing after each harvest.

### Gap filling

In order to ensure adequate plant population gap filling need to be taken 30 days after planting

### Irrigation

Irrigation is to be provided during summer months once in three to four days by sprinkler irrigation method.

### Harvesting

Harvesting the grass at the right stage is important to ensure good palatability. Both grasses will be ready for harvest in 80 days after planting. Subsequently grass can be harvested at 40-50 days

interval. The grass may be cut at height of 5-10 cm above ground level for better regeneration. Fodder grass can be maintained for a period of 4 years. However maintenance up to 3 years is preferable. When the new planting is taken up, immediate planting of fodder grass in the same area is to be avoided. Instead grow green manure plants in that area. It is preferable to grow green manure crops in that area for one season and then new planting shall be taken up.

### Yield

Fodder grass variety	Fodder yield in different soil type (t/ha)*	
	Red loamy soil	Sandy soil
Hybrid bajra Napier CO3	120	96
Hybrid Cumbu Napier CO4	119	94
Hybrid Bajra Napier CO5	126	100
Guinea grass	110**	80

\* Recorded at Kasargod

\*\*Expected yield

A farmer can manage 6-8 cows with guinea grass or 10-12 cows with Napier grass grown in one hectare of coconut garden. Integration of dairy enterprise along with fodder cultivation ensures higher income. In addition cow dung, urine and other wastes can be effectively recycled as a nutrient source in fodder and coconut cultivation.

### Effect of fodder intercropping on coconut yield

Intercropping of fodder grass will not affect the coconut yield. Fodder grass intercropping with integrated nutrient management practices has recorded 11 per cent increase in yield over monocropping of coconut. Experiments conducted at ICAR-CPCRI Kasargod has clearly demonstrated that intercropping will have a complementary effect on coconut productivity if proper nutrient management practices are adopted for the fodder crops. ■