

## A Note on Some Tropical Green Manure Plants for the West Coast

by

K. V. AHAMED BAVAPPA

and

K. HANUMANTHA RAO

The beneficial effects of the application of green leaves to paddy are well known. This system of enriching the soil and making it more productive is economical and efficacious. The usual method of green manuring is either by collecting the material from perennial trees or by growing a crop *in situ*. Quick growing herbaceous plants with succulent leaves and soft stems are generally selected for the latter method. Notwithstanding the abundance of vegetation on the West Coast, the availability of green leaves in adequate quantities has been a problem in the coastal belt where the major paddy area is located.

Annual green manure crops like Kolinji (*Tephrosia purpurea*) Sunnhemp (*Crotalaria juncea*), Daincha (*Sesbania aculeata*) were commonly recommended for wetlands and in recent years *Sesbania speciosa* has also been found suitable. But each of these has got its own limitations, e.g. Kolinji though a hardy and highly drought resistant plant, gives low tonnage, is unable to withstand water logged conditions and seed setting is very low, necessitating the import of large quantities of seeds every year from outside. The problem of import of seeds annually exists for Sunnhemp also which comes up well under limited conditions. *Sesbania speciosa*, which has many points in its favour, does not come up well under low moisture conditions.

So, there exists an evident need for a leguminous green manure plant which (1) can come up under low moisture conditions (2) is capable of withstanding water logged conditions (3) gives high tonnage of green matter and (4) produces adequate quantities of seeds for individual requirements. With these in view 34 species of different leguminous plants were tried at the Paddy Breeding Station Mangalore, during 1954 and 1955 to find out their suitability to this tract. The preliminary observations recorded on six of the species found promising are furnished below.

**Phaseolus semierectus:** This is an erect, herbaceous, annual plant with terminal portions showing twining tendency. It is also reported to be a good fodder with high nutritive value. The roots possess

nodules in a much higher proportion than any other variety of Cowpea. The plants grow to a height of about  $5\frac{1}{2}$ ' and flower when about three months old. It recorded an acre yield of 21,000 lb. of green matter. Seed setting was moderate. The plants were found to come up well under water logged conditions in the wet land. It has the capacity of self regeneration and is also capable of withstanding drought to a certain extent. This species appears to be promising and is worth further trial.

**Tephrosia noctiflora :** This is an erect annual shrub which grows to a height of about 4'. It recorded an acre yield of 18,000 lb. of green matter only which when compared to others is low. But it has got other points in its favour. It was found to be highly drought resistant and at the same time capable of withstanding water logging when grown under wet land conditions. The plants flowered when three months old and seed setting was found to be good. As compared to *Kolinji* this is better in respect of the capacity to withstand water logging to some extent and good seed production. From the trials conducted so far, this appears to be suitable for the tract.

**Indigofera hirsuta :** This is a sub-erect annual producing heavy foliage. Besides green manure it also yields good quality forage which can be used for hay making. The plants grow to a height of about 7' and flower when they are about six months old. Seed setting is profuse. The plants were found to withstand to some extent water logged conditions in the wetlands. An average acre yield of 24,000 lb. of green matter was recorded by the plants. The variety may be suitable for the tract.

**Cassia leschenaultiana :** This is a perennial, under-shrub which comes up in both plains as well as in hills upto 6,000' with dense, coppery-green, feather like foliage. On the station it was found to grow upto a height of about  $5\frac{1}{2}$ ' recording 36,000 lb. of green matter per acre. When tried under wet land conditions it was found to withstand water logging. The plants flowered when they were 4 to  $4\frac{1}{2}$  months old and set seeds profusely. The germination of seeds also has been found to be very good. The plant has got high regenerating capacity which is an important point in its favour. From the preliminary trials conducted this is found to be promising.

**Crotalaria anagyroides :** Being a perennial, tall growing shrub, this leguminous plant is being used in some places as a temporary shade to some of the plantation crops besides being used as a green

manure. The plants grew to a height of about 9' without much branching and gave about 44,000 lb. of green matter per acre. The plant has been found to be incapable of withstanding water stagnation and hence is unsuitable for growing under wetland conditions. The plants flower when 4 to 4½ months old and seed setting is moderate. This variety is likely to prove useful for garden and dry lands.

**Crotalaria gorcensis:** This is an annual shrub with moderate branching and grows to a height of about 6'. It recorded 28,000 lb. of green matter per acre. When sown under wet land conditions the plant has been found not to tolerate water logging and hence is unsuitable for growing in wetlands. The plants flower when they are 4½ to 5 months old and seed setting is profuse. For garden and dry lands this appears to be a suitable green manure.

---

## Paddy Strains for the East Coast Districts

by

Sri M. RAYAPPA PILLAI, Sri A. SHANMUGHASUNDARAM,  
Sri SRAYANKUMARAN AND Sri W. R. NARGUNAM,  
(Central Sugarcane Research Station, Palur).

There are four seasons in which paddy is cultivated in the East Coast districts and these are (1) *Sornavari* or *Kuruvai* Season: from middle of May to end of September (2) *Samba* Season — from middle of July to end of January (3) *Thaladi* or *Second Crop* season — from end of September to end of February and (4) *Navarai* Season commencing from January and ending in May.

Even from as early as 1907—'08, i. e., a couple of years after the opening of the Palur Agricultural Station, improvements were attempted in all the important aspects of rice culture, namely, varietal, manurial and cultural. This paper embodies the results of the varietal aspects of the investigations conducted during recent years.

**Previous Work:** The two important rice seasons are *Kar* or *Kuruvai* season and *Samba* season. The varieties grown in these seasons were *Sornavari* and *Garudan Samba*. To find out if better varieties could be substituted for the local *Sornavari*, a short