

## **ACCELERATED GLIRICIDIA PROPAGATION**

Throughout the tropical world the Gliricidia tree has been acknowledged as a boon for the care it imparts to associated crops as well as to farmers for whom it is both a source of fuel-wood as well as for abundantly restoring fertility. Also termed ‘Madre-de-Cacao’ (Mother of Cocoa) in tropical America, Gliricidia sepium is popular for its very rapid growth, shade, and lovely pink flowers in season. The LW –nursery system (so-named after its originator, Lionel Weerakoon of the SEWALANKA foundation in Sri-Lanka) was devised towards further accelerating the multiplication of Gliricidia through the alternating wet and dry seasons of the tropical year.

At the start of each DRY-season, the gliricidia branches are lopped (pruned at 1.5” to 2” diameter) into 2 to 3 foot lengths and laid – on both sides - against a bamboo (or similar) stick supported, like an ‘A’, some 18 inches above the ground, such as between a pair of coconut palms, (Fig. 01) and as close together as possible while leaving space for the branch sloping from the other side. Note that it is ‘laid’ with its lower end on the surface of the soil with about 6 inches free above the supporting bamboo. Soil, preferably mixed with ‘coconut-pith’ (kohu-bath) or moisture absorbing material is then sprinkled over the lower-end of the line of branches, and regularly watered to ensure sustained moisture at the rooting end.



**Figure 1** Gliricidia nursery



**Figure 2** Gliricidia foliage

With this method, the nursery can be started at any time when the planting material is available. Their initial growth depends mainly on regular watering of the nursery. Within a few weeks, abundant foliage will have developed at the upper-end of the branches, near the supporting bamboo. (Fig.02) and can be maintained thus until the commencement of the WET-season, when they can be gently lifted out so as NOT to damage the roots or foliage, (Fig.3) and laid in a shallow ‘planting hole’ (Fig.4.) just deep-enough for the roots to be covered by soil.

Planting-out in the field should take place only once the wet-season sets into end sure that the sticks continue growing. However, water-logged conditions are not conducive for its growth. Leaf dry matter production per plant after six weeks from initial lopping is given below:(Aspects of Conservation Farming - W.L. Weerakoon):

<u>Stump height(m)</u>	<u>Leaf yield (g)</u>
0.5	95
1.0	185
2.0	250



**Figure 3** Undamaged foliage & roots



**Figure 4** Inserting into planting hole

Harvesting of the branches of the Gliricidia trees can commence within about a year using a ‘lopper’ (Fig.5) at about ‘chest-height’ thus leaving a clean ‘head’ of the tree at about eye-level,(Fig.6) from which ‘head’ fresh branches will commence for the second and subsequent harvestings from about nine months later.



**Figure 5** Lopping



**Figure 6** Pruning height

Some pruners use a ‘kettha’ but using a sharp edge is necessary to avoid damage to the stump by splitting the branch that promotes decay. Ideally the cutting stroke should be swung upwards, for to swing the kettha downwards often results in a frayed stump.

Even those using the ‘loppers’ should be trained to use a hand-held muwath-gala which is a foot-long cement-sand sharpening stone. This should be issued to each pruner to keep the cutting-edge sharp.

If the minimum precautions are not taken in harvesting to ensure least damage to the stump, yield will drop and ultimately the tree will die back.



### **A special note on planting gliricidia on a coconut estate**

The fertility inherent within the lopped foliage of Gliricidia is well established. For example, 100 kg (two sacks) of Gliricidia loppings is known to provide the nitrogen equivalent of 2 kg. of urea; all the annual needs of a high-yielding coconut palm, in addition to about 40% of its requirement of potassium and phosphorous, for a fraction of the cost of the imported product.

A convenient 10:1 ratio of Gliricidia trees planted per coconut palm thus provides the major nutrient requirements of a high yielding coconut plantation. Proportionate planting ratios can similarly be derived for other plantation crops such as tea and cocoa, as well as for arable crops such as maize and sorghum.

While a minimum distance of about 1.5 to 2ft should be maintained between individual Gliricidia plants, special care should be taken to ensure adequate space between rows (Fig.7) for managing the inevitable growth of weeds.

Fig. 8 Shows the Gliricidia trees planted out in the field leaving a (logistics) avenue between palms for movement of the harvesting 'kekka', and carts/trailers which collect the nuts.



**Figure 7** Row spacing



**Figure 8** Gliricidia avenue planting

Figure 9 shows laying of this foliage in a shallow trench (paathie) around each palm, which when lightly covered including a little added potassium, magnesium and phosphorous provides balanced nutrition for a year. Young coconut seedlings are also similarly 'green-manured' in their planting hole, and protected against foraging cattle with a surrounding fence of Gliricidia branches.



**Figure 9** Foliage 'Paathie' around palm