

# Vegetative Propagation of Eucalyptus Through Cuttings

Banthia, K. M.\* , Joshi, C. M.\*\* , Venkata Reddy, P. B.\*\*\* , Sinha, J. P.\*\*\*\*

## SUMMARY

Vegetative propagation of Eucalyptus is possible on a commercial scale by rooting of coppice shoots of 45 to 55 days age in green house conditions at 90°F to 95°F. The rooted cuttings are to be hardened for a month before planting.

### Introduction :-

Eucalyptus species show large variation in their genetic characteristics. Hybridisation in the genera of the Eucalyptus is very prominent, On account of this, large variation occurs in wood lots raised with the same source. To perpetuate the best characteristics of an elite Eucalyptus tree, it is possible to develop the characteristics by induction of rooting in its cuttings. Brazil has developed techniques for rooting in cuttings at Aracruz where more than 10 million propagules of Eucalyptus are produced annually. At present no easy method of rooting in cuttings is available in India. The Sirpur Paper Mills at Kaghaznagar has taken up an experiment of rooting in cuttings in their Forest Research and Development Center. This Center is situated about 7 K. M. away from the Sirpur-Kaghaznagar town where the temperature during summer rises to 45°C as against the temperature of 29°C at Aracruz, Brazil. The locality received a rain fall of approx. 1068 mm during July to September on an average.

### Materials and Methods :-

An elite Eucalyptus hybrid (Mysoregum) Plant of 11 years age was selected. The tree had a height of 22 m, with girth at breast height of 1.5 m. The tree when felled gave a volume of 1 cmt. and air dry weight of 860 Kgs. The bark percentage was 15%. This selected tree was felled 12 cms. above the ground. After 55 days, vigorous coppice shoots developed on the stump. The coppice shoots were pruned about 2 cms. above the stump retaining two vigorous shoots on the stump. The coppice shoots so pruned were placed in a bucket of water and transported to the plantation site about 6 Kms. away.

### Preparation of cuttings :-

The shoots were cut into lengths of 10 cms. taking care to select cuttings with long internodes. Cuttings with a pair of leaves were selected and the surface area of the leaf was further reduced by snipping of part of the leaf. The cuttings so obtained were treated with Bavistine at 200 ppm concentration by immersing the cuttings for 15 to 30 minutes.

### Planting of cuttings :-

The containers were of cylindrical earthen pots of 15 cms. length and 5 cms. diameter with a perforation at the bottom costing 0.25 np. each.

The containers were filled with Vermiculite, fine red soil and saw dust in the proportion of 3 : 1 : 1. When only Vermiculite media was used the cuttings got dried up. The cuttings were treated with Indolobutyric Acid diluted with Talcum Powder and karidex (root-hormone) to a length of 2 cm. only. The concentration for I B A was 6000 ppm. The mixture adhered to the cutting and any excess was removed by tapping. These treated cuttings planted in containers to depths of 4 cms. The containers with the treated cuttings were placed in an improvised green house built with plastic sheets. The temperature was maintained between 90 to 95°F and the humidity at 80 to 85%.

### Irrigation :-

Intermittant mist propagation by hand controlled

\*Vice President, Sirpur Paper Mills Ltd , Kaghaznagar.

\*\*I F S (Retd.)

\*\*\*Raw Material Manger

\*\*\*\*Senior Assistant

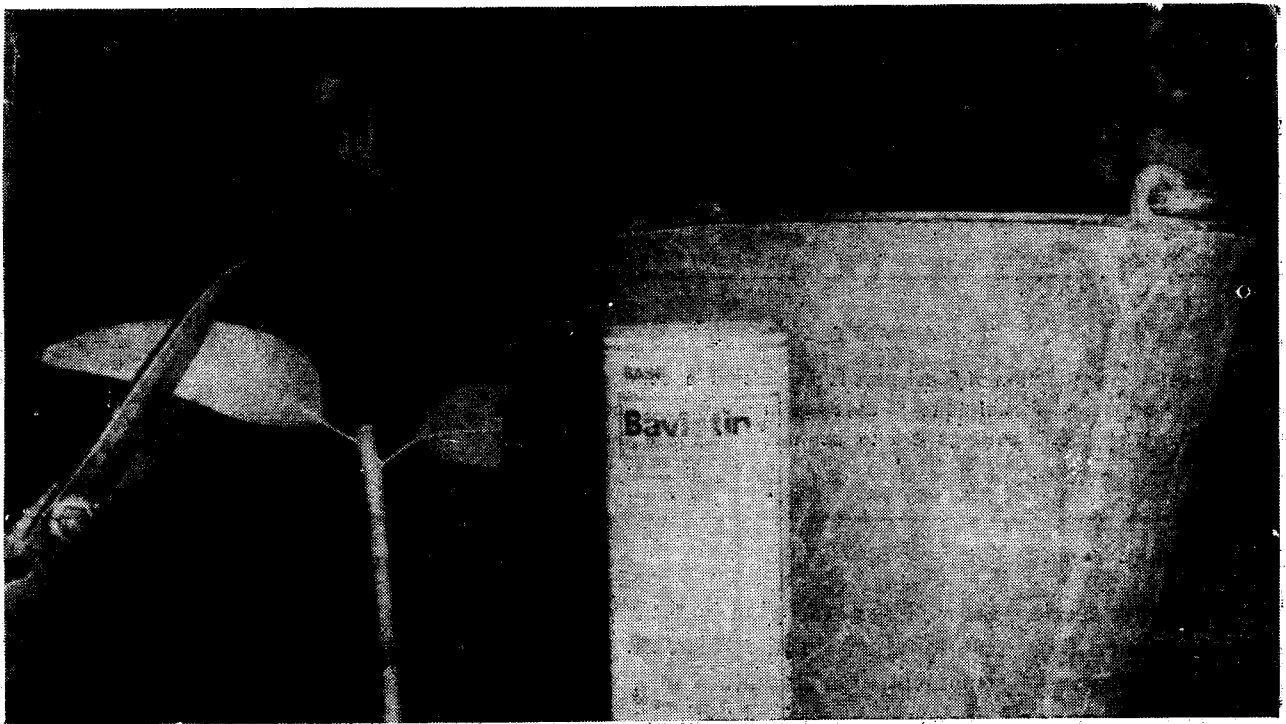


FIG. 1



FIG. 2

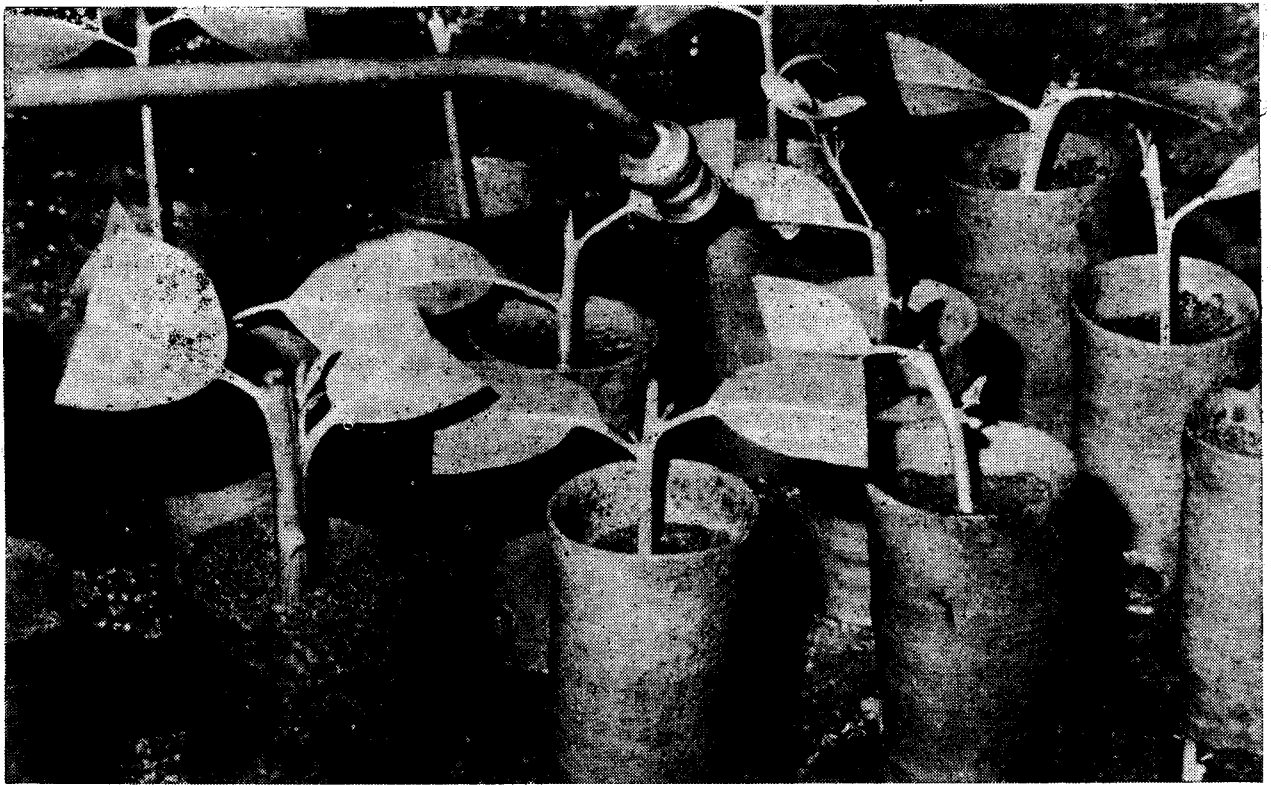


FIG. 3

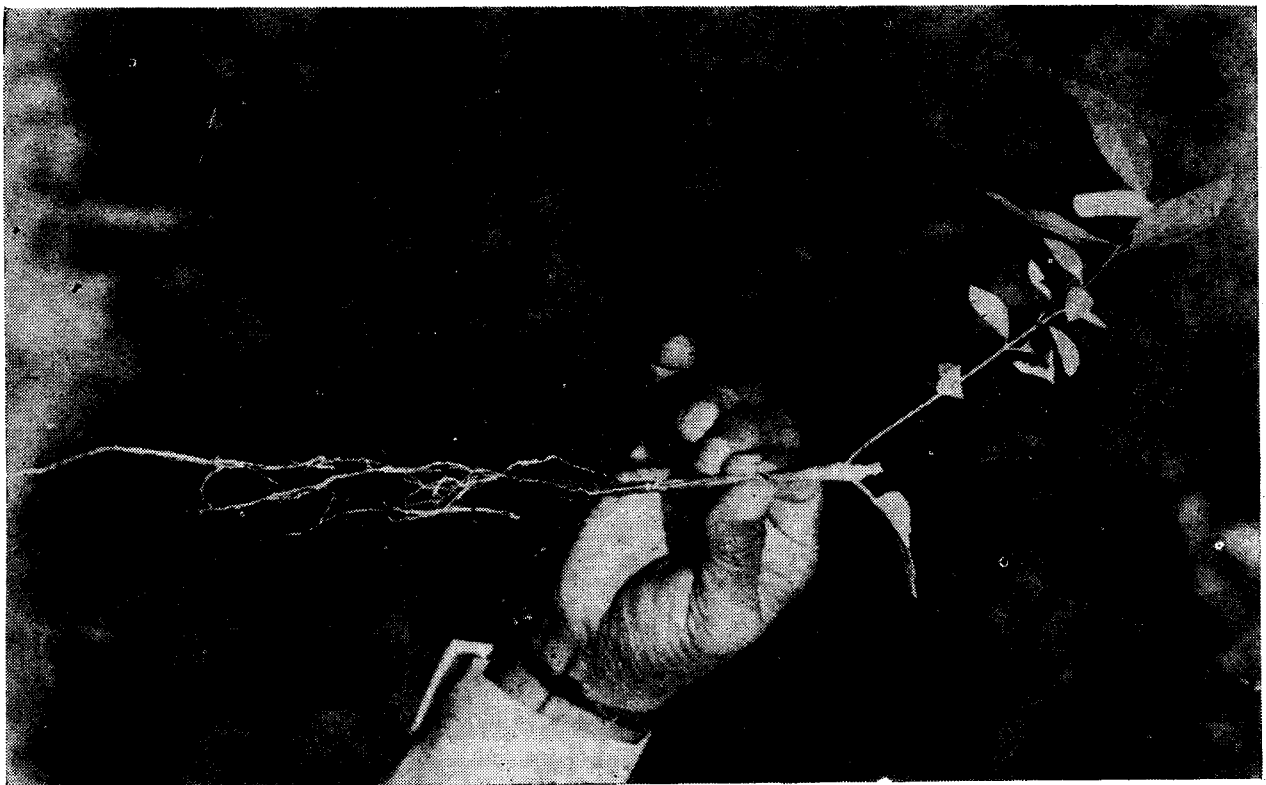


FIG. 4

equipment was used to irrigate the containers with the cuttings. The frequency of irrigation was aimed at maintaining a film of water on the leaf surface.

**Observation :-**

58 cuttings were planted in the earthen containers on 17th April, 1987. Small leaves were seen sprouting on the dormant buds of the cuttings between the 29th April, 1987 to 9th May, 1987. New leaves and shoots were found sprouting between 10th May, 1987 to 20th May, 1987. Roots were seen developing between 21st May, 1987 to 26th May, 1987 at which stage a fertilizer marketed as Amrit Sanjeevani was applied every 2 to 3 days upto 12th June, 1987.

On 7th July 1987, 13 rooted cuttings were trans-

ferred to bigger containers and kept in open shade which were planted out in the field on 15th August, 1987.

**Survivals :-**

Out of the 58 cuttings, 40 survived with a root shoot development and the percentage of success was 69. On 10th June, 1987, 70 cuttings from another three were raised in the same fashion as above of which 30 cuttings developed.

**Acknowledgements :-**

Authors are thankful to Dr. Y.S. Rao, Regional Forestry Economist, F.A.O., Bangkok for his help in communicating the information on work done in Brazil.