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VEGETATIVE PROPAGATION OF LUNUMIDELLA (*Melia dubia-cav.*)

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Abstract

Melia dubia has a good potential as a fast growing, moderate quality timber tree. Its seed germination is very poor, so that it is not possible to ensure a reliable supply of seed for a large-scale planting programme. A successful method of vegetative propagation was found to be to take cuttings from six-months-old seedlings. A cutting was taken from each seedling up to eight times at 5-8 day intervals. The success rate of rooting was 89%.

Introduction

Lunumidella *(Melia dubia)* is a fast growing indigenous tree of the wet and intermediate zones of Sri Lanka. Its timber is used mainly for panelling and ceilings (Anon., 1979). It is also used occasionally for doors, furniture and structural timber.

It is a strong light demander, whose fast early growth enables it to rise quickly above the weeds. It matures in 15-20 years. No major pests have been reported. These characteristics show that it has good potential as a plantation tree. Experimental plantations have been established by the Forest Department in the intermediate and dry zones, and have given promising early results (Tilakaratna & Weerawardana, 1992).

Its only natural regeneration is from seed. Although it produces a large seed crop its germination is extraordinarily low, which is a drawback for large-scale planting. Under normal conditions it is less than 5% (Vivekanandan, 1978). It can be improved to about 26% by pretreatment (Tilakaratna, 1991) but this is still not good enough for routine seedling production. This paper presents the results of a study carried out at the Forest Research Centre, Kumbalpola, on the rooting of stem cuttings obtained from seedlings.

Method

Stem cuttings were obtained from six-month-old seedlings. Twenty-five selected healthy seedlings were lopped at 10 cm below the apical bud (Fig.1 a & b). After three days the lopped seedlings started to sprout from the upper part (Fig. 1c). When the sprouts appeared, a cutting 5 cm long (1-2 nodes) was taken with a razor blade from the top end of each seedling

(Fig. 1d); each included the newly formed sprouts. The cuttings were set in a bed topped with a 10-cm layer of sieved river sand. No rooting hormones were applied. The bed was heavily shaded with a coir mat cover, 1.5 m above the soil. A small mist-propagation unit was used (Fig. 2).

Five days after taking the first cuttings, new sprouts emerged for the second time from the seedlings. Another batch of 25 cuttings was taken at this time and set in the sand bed. This process of taking cuttings was repeated at 5-8 days intervals, until the height of the seedling stem was less than 5 cm. Altogether eight cuttings were obtained from each seedling, making a total of 200. After four weeks the rooted cuttings were transferred into polybags containing sandy loamy soil, and placed under strong shade. The shade was gradually removed after six weeks.

Results

The sprouting ability of the seedling appeared not to be affected by the repeated taking of cuttings. The final sprout was allowed to grow, so that the original 25 seedlings were not lost. The cuttings started to root after two weeks.Of the 200 cuttings, 178 were successfully rooted, ie 89%. The others failed because of bark rotting. After four months the cuttings were ready for planting in the field. Twenty-five rooted cuttings failed to grow successfully. The final number of good plants produced from cuttings was 153 (76.5%).

Conclusion

The rooting of seedling cuttings was found to be a successful technique for vegetative propagation of lunumidella. Only simple implements are required, and so the procedure can easily be carried out in any nursery if misting facilities are available. A small number of plants produced by seed germination can be multiplied about sevenfold. However, the field performance of the resulting plants is yet to be studied.

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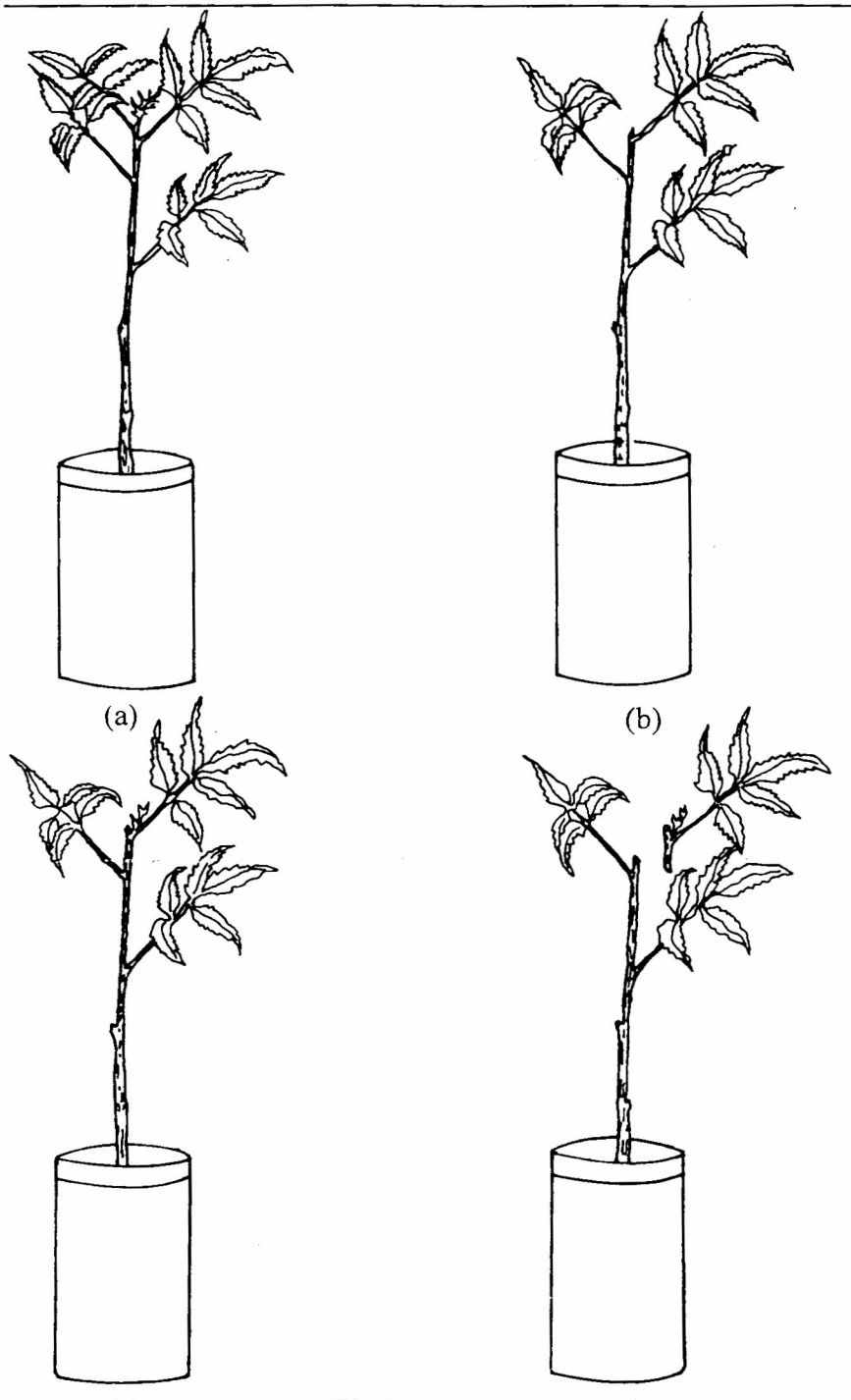
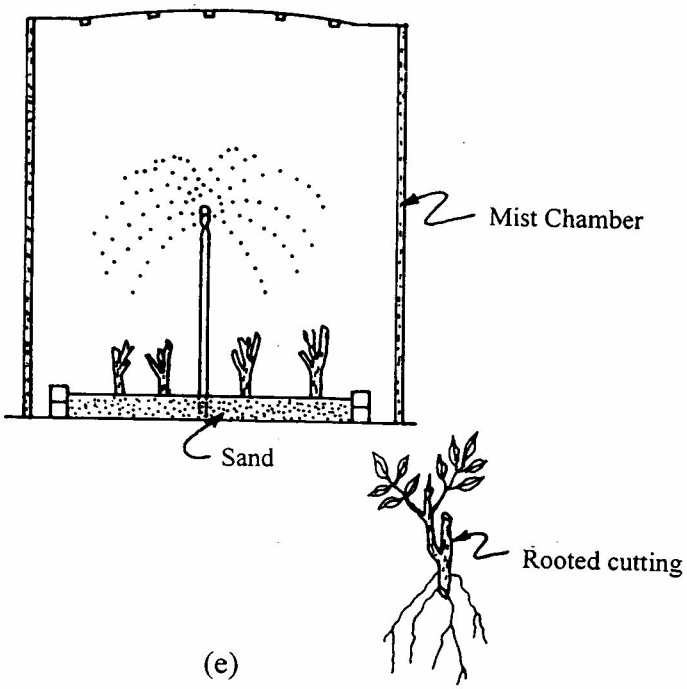


Fig.1



(e)

Fig.2