

EX VITRO ACCLIMATISATION OF MICROSHOOTS OF AEGLE MARMELOS L.

B.N. HAZARIKA, V. NAGARAJU AND V.A. PARTHASARATHY

Biotechnology laboratory, Division of Horticulture
ICAR Research Complex for North Eastern Hills Region,
Barapani - 793 103, Meghalaya
Inida

ABSTRACT

A protocol for the acclimatisation and rooting of *Aegle marmelos* microshoots was developed *ex vitro*. The shoots of 2 cm long from the proliferating cultures grown in benzyl aminopurine supplemented medium were excised aseptically and cultured in the sterile soilrite and in soilrite with sand after pulsing them with either IBA or NAA at 10 ppm for 2 minutes. The observations recorded six weeks after the culture initiation revealed that the pulsing of the microshoots with IBA induced early rooting in soilrite. The plants acclimatised successfully without any transplant shock in the soil.

The rooting of microshoots of bael (*Aegle marmelos* L.) is one of the difficult steps in its micropropagation. The studies conducted on bael had shown a maximum success upto 65 % in rooting with a high rate of mortality on transfer to the soil (Hossain et al. 1993 and Islam et al. 1993). In order to overcome the problem of rooting and subsequent acclimatisation, the present studies were undertaken.

The terminal shoot cuttings (2 cm long) from *in vitro* proliferated cultures of bael were excised aseptically and cultured in the sterile tissue culture jars (450 ml capacity). The jars were filled upto half with soilrite or soilrite topped with sand and saturated with 1/4 strength of the Murashige and Skoog (1962) salt solution. The jars were autoclaved at 15 lb. for 20 minutes. Four shoots were planted in each jar after pulsing them with either 10 ppm indole butyric acid (IBA) or with 10 ppm naphthalene acetic acid (NAA) for 2 minutes. 20 jars formed one treatment with 5 jars forming one replication. The jars were maintained at 25°C with 16 hours illumination under 2000 lux. The observations were recorded after 6 weeks and the plants were transferred to soil in polythene bags in a mist house.

The results (Table 1) showed the significant differences among the carriers and the pulsing treatment for all the characters except the culture weight and root length. The pulsing of microshoots with 10 ppm IBA before their planting in soilrite resulted in an early root initiation by about 12 days in case of sand + soilrite, while it was early by 8 days in soilrite. Besides, the pulsing resulted in a high rooting percentage and the roots

were vigorous. IBA was better than NAA in the root induction. Hossain et al (1993) reported a 65 % rooting with IBA in the agar medium. They found that the acclimatisation was prolonged with the poor survival rate. The above problem was eliminated in the present studies because of the rooting in soilrite against the agar used in other studies. The rooting in soilrite was better and was an improvement over the conventional rooting done in agar based medium. The similar observations were made by Hazarika et al (1995) in case of different Citrus species. Hence it was concluded that for a better acclimatisation and rooting, the microshoot culture in soilrite *ex vitro* with pulsing with IBA was very useful for bael.

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