POSTERS

SECTION B

201/B

A comparative study of the growth of field established *in vitro* plants with conventionally propagated plants of *Munronia pinnata* (wall) Theob. (Binkohomba, family Meleaceae)

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In vitro grown plants of *Munronia pinnata* were successfully established in the greenhouse and after one year, they were introduced to the field (10,000 Lux - 12,000 Lux light intensity, 6.8 soil p^H and watering was carried out to maintain average wet condition) with conventionally propagated plants in order to determine their survival and growth in the natural habitats. It is important to determine whether tissue cultured plant are true-to-type when they are produced in commercial scale. Morphological parameters such as plant height, number of leaves, number of branches, flowering habit and seed germination ability were measured and physiological parameters such as photosynthetic rate and stomatal resistance were also measured over a period of one year in tissue cultured plants and conventionally propagated plants (50 plants from each type) and data were compared. Completely randomised block design was applied for experiments and statistically analysed using MINITAB.

All the tissue cultured plants transferred to the field survived with no visual deformation. Height increment and leaf number increment was significantly increased in both types of plants over the tested period. When compared to the initial measurements; height increment of tissue cultured plants and conventionally propagated plants after one year were 5.55±1.2 cm and 6.28±0.97 cm respectively, where the values were non-significant. For increment in leaf number it was 9.1±0.4 and 9.3±0.84 respectively in tissue cultured plants and conventionally propagated plants where the values were non-significant. Branching was only observed in tissue-cultured plants with the increment of 2.5±0.45. Flowering habit was similar in both plant types and no differences were observed in percentage seed germination.

Photosynthetic rates were increased in both plant types during the observation period and there was no significant difference between tissue cultured plants and conventionally propagated plants. Stomatal resistance was low in tissue cultures plants at the initial stage but significantly improved when establishing in the field. There was no marked difference in stomatal resistance between two plant types after one year in the field. No chemical fertilizer or pesticide was applied during the experimental period and only a solution of tobacco leaves (12 cm long, 10 petioles) soaked in 1 L of water was applied to all plants to control insect attacks.

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