

ESTABLISHMENT OF MERISTEM-TIP CULTURE
IN DIOSCOREA ALATA L.

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Growth requirements for meristem-tip culture in four varieties of Dioscorea alata were studied. Explants were prepared by excission of axillary buds picked from young plants grown in the field and cultured in MS medium supplemented with different levels of sucrose and growth hormones. Auxins (lBA, NAA, lAA and 2-4, D) and cytokinins (BAP and KN) were employed as hormones. Cultures were maintained at 26 1° C and different light intensities between 1500-4500 of lux.

The media supplemented with higher levels of BAP (1-3 mg/l) combined with lower levels of either lBA or NAA (0.1-0.5 mg/l) promoted both shoot initiation and growth. Further increase in BAP resulted in multiple shoot formation. Root formation was achieved with the medium provided with relatively higher levels of NAA or lAA (0.5-2 mg/l) than required for shoot growth in the presence of NAA. 2-4, D or lBA was less effective on root formation compared to other auxins. Higher levels of sucrose was

favourable for shoot initiation and growth. Light intensity around 4000 lux appeared to promote shoot initiation and growth. Different varieties did not show any difference with respect to either shoot or root growth. Meristems obtained from mature parts of the plants resulted in discoloration of the culture medium and degeneration of the explant after arresting their growth.