

STUDIES ON THE IN-VITRO DEVELOPMENT OF
DENDROCALAMUS GIGANTEUS

By

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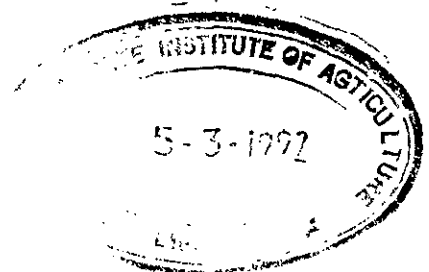
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ABSTRACT

Dendrocalamus giganteus, the biggest of the bamboos, grows in Sri Lanka, particularly along the banks of rivers. Due to the difficulty in propagating it on a large scale by conventional methods, tissue culture techniques were applied to several types of explants to accomplish this objective.

Among the explants tested were the nodal segments excised from lateral branches of mature field clumps, nodal segments from greenhouse maintained seedlings, nodal segments from *in vitro* seedlings, leaf sheaths from young culm shoots, immature embryos and seeds.

Contamination was high in field nodal buds, but could be reduced to 68%. Bud-break in cultures, was observed on MS medium with 5 – 10 mg/l BAP, but no shoot multiplication occurred. When material was collected from greenhouse grown plants, only 25% of the cultures were contaminated and budbreak was induced with 5 – 7 mg/l BAP. The nodal buds excised from *in vitro* seedlings proliferated by giving 4 – 5 shoots per culture in 5 – 10 mg/l BAP. These shoots were rooted with IBA and later established in soil. Therefore, this type of explant has the potential for producing *in vitro* plantlets.

Other explants were young leaf sheaths which produced callus with 2 – 8 mg/l 2,4-D. A compact globular callus and a friable callus were obtained, but no plant regeneration was achieved by this treatment.

Nodular callus developed when immature embryos were cultured with 2,4-D and KIN. In some

cultures, etiolated shoots with purple pigmented leaf sheaths were observed. These shoots did not survive long.

When seeds could not be cultured directly due to high contamination, their embryos were excised and cultured. Four to five shoots developed on MS medium with 5 mg/l BAP. Therefore this explant too has the potential for producing multiple shoots.

