B-20: Initiation of axenic cultures for induction of bud break and shoot proliferation in single node segments of *Bambusa vulgaris* var. *striata*

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Large scale planting of bamboo for reforestation and soil conservation is limited by the availability of insufficient propagules. Tissue culture offers a new technology for rapid multiplication and cloning of elite material. Contamination in woody species is a major problem in initiating axenic cultures.

Single node segments from secondary shoots of selected mature bamboo clumps were surface sterilized with bleaching powder (calcium hypochlorite)

and mercuric chloride. They were cultured in a basal MS medium containing 2.0 mg/l 6-benzylaminopurine (BAP) and 0.1 mg/l kinetin with or without benlate and gelled with agar. Bud break was induced in all the treatments. All cultures without benlate, showed contamination. In the first 2 weeks, the growth of contaminants was slow and did not interfere with shoot development. Inclusion of benlate reduced contamination but bud break and further growth of buds in the first 2 weeks were reduced. Transfer of nodal segments to fresh medium was necessary after 2 weeks to prevent browning and death of the emerging shoots. Average shoot length was higher in the treatment without benlate. A maximum of 3 shoots were produced per node. Nodal segments with emerging shoots when transferred to liquid medium containing 6 mg/l BAP started to proliferate. Contamination reappeared in some of the liquid cultures. This was overcome by culturing the shoots after separating them from the nodal segments. However, this lowered the rate of shoot multiplication.

The fungal contaminants were isolated to determine the optimum benlate concentration to suppress their growth. Among the isolated fungal strains, benlate sensitive as well as tolerant strains were observed.

Contamination of cultures by a systemic fungus in bamboo was significantly reduced by pre-sterilization and supplementing the culture medium with benlate, followed by separation of new shoots from the original explant.