

COMPLETED EXTERNALLY AIDED PROJECTS

Project 1: Studies on refinement and scaling up of existing micro-propagation and macro-propagation technologies for *Bambusa nutans* and *Bambusa tulda* [063/TFRI-2004/Gen-1/DBT (7)]

Findings: A reproducible micropropagation system for field grown culms of *B. nutans* and *B. tulda* was developed, which incorporates surface sterilization for 10 min with 0.1% aqueous mercuric chloride and establishment on 0.8% agarified MS semi-solid medium supplemented with 3% sucrose, 10 μ M BA and 0.1 μ M IAA through five subculture cycles each of 15 days. Supplementing MS liquid medium with 100 μ M glutamine, 0.1 μ M IAA and 12 μ M BA ensured a stable two fold shoots multiplication rate at a subculture cycle of 15 days and that with 40 μ M coumarin induced \geq 98% *in vitro* adventitious roots at one month after inoculation, regenerating plantlet production @ 1.96 fold per culture cycle of 45 days. The *in vitro* regenerated plantlets were hardened and field acclimatized with 90-100% survival.

Adventitious rhizogenesis was influenced much by season in *B. nutans* and by season, nature of cuttings and IBA treatment in *B. tulda*. Culm cuttings exhibited superiority over culm-branch cuttings for rooting in both species. However, rooting of culm-branch cuttings appeared to be a viable procedure for propagation in *B. nutans*. Thus, single node culm and culm-branch cuttings in *B. nutans* and only culm cuttings in *B. tulda* treated with 2 mM IBA during the whole year and February to May, respectively can be employed for their clonal multiplication and production of planting stock. By both procedures, about 5000 hardened and acclimatized plantlets from nodal segments of field grown culms of *B. nutans* and *B. tulda* have been produced. Micro-propagation technologies for *B. nutans* and *B. tulda* and macro-propagation technology for *B. nutans* have been developed on conclusion of the project.