173B

In vitro shoot proliferation and rooting of *Bambusa vulgaris* var. vitata (Yellow bamboo)

T E Weerawardena and S M S D Ramanayake*
Plant Biotechnology Project, Institute of Fundamental Studies, Kandy

Yellow bamboo, *Bambusa vulgaris* var.vitata is the most widely distributed bomboo in Sri Lanka. *In vitro* propagation of yellow bamboo is required for large-scale propagule production, due to slow multiplication by vegetative methods and rare flowering with no seed set.

Single nodal segments with unsprouted buds were surface sterilized and cultured on 15 ml of modified Murashige and Skoog (MS) medium containing 0.5mg/ L benzyladenine (BA), 0.1% Kinetin, 3% sucrose and 0.42% agar to induce bud break. Sprouted shoots were proliferated in jars containing 40 ml of liquid MS medium supplemented with BA. The effect of three BA levels (2, 4 and 6 mg/ L) and three thidiazuron (TDZ) levels (0.05, 0.1 and 0.5 mg/ L) on axillary shoot proliferation was studied. Shoot number per jar that developed at the end of subculture cycles were counted in five replicate jars in each treatment during four consecutive subculture cycles and the rate of shoot proliferation was calculated. The mean shoot length of the five longest shoots in each jar was determined. Root induction was observed in half strength MS medium with different levels (0.05,0.1, 0.5,1.0 3.0, 6.0 and 10 mg/ L) of indole-3-butric acid (IBA) and the percentage rooting determined. Rooted shoots were acclimatized gradually in hormone free half strength MS medium, tap water, 1:1 soil: coir dust mixture. Acclimatized plants were established in soil.

Percentage bud break was not uniform during the period under investigation and ranged from zero to 50%. The sprouted nodes developed continuously proliferating axillary shoots on transfer to a liquid medium supplemented with BA. The mean rate of shoot proliferation was significantly lower in TDZ than in BA and ranged from 1.2 to 1.7-fold during a 14-day period. The shoots that developed in TDZ were thinner and shorter. The shoots in the three levels of TDZ and also in the highest level of 6 mg/L, turned brown on repeated subculture. The MS medium with 4 mg/L BA with the longest shoots (5.7 cm) and the highest rate of shoot proliferation (1.7-fold) is recommended for shoot proliferation. Percentage rooting in different IBA levels ranged from 20-40%. Survival of rooted shoots was 77% on transfer to soil. Further studies are needed to improve rooting and acclimatization.

* shantha@ifs.ac.lk Tele: 081 2232002