SOMATIC EMBRYOGENESIS IN TISSUE CULTURES OF BANANA AND PLANTAINS (*MUSU SPP.*)

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Banana and plantain (*Musa spp.*) are major important horticultural crops in Sri Lanka. Conventional breeding which is based on recombination and selection is difficult to apply for these crops as polyploidy and sterility are both serious handicaps to genetic improvement. Plant regenerated from a tissue culture are known to exhibit genetic variability (Somaclonal variation). Therefore callus and cell suspensions are potential tools for the improvement of banana and plantains. This study was conducted to develop culture media for somatic embryogenesis in tissue cultures of banana and plantains in the Plant Genetic Resources Centre, Gannoruwa.

Modified Schenk and Hildebrandt (1972) medium (SH) was supplemented with 2,4 - D (0.25 - 1.0 mg/1) or/and BAP (1.0mg/1). Each treatment was solidified with agar (0.8% W/V) for callus establishment. Both leaf base and meristem tissues of the selected cultivars were taken for culture. The treatments containing only 2,4 - D were used with explants of Kolikuttu (AAB), Binkehel (AAA), Sinikehel (ABB) and a tetroploid cultivar called IC2 (AAAA). For treatments containing both 2,4 - D and BAP, explants of Rathambala (AAA), Muwanethikehel (AAB) and Alukehel(ABB) were taken. All cultures were kept in dark at 26°1C.

Leaf base tissues were found to be better than meristem tissues for establishment of callus. In this regards the best concentration of 2,4 - D for leaf base tissues of Sinikehel and IC2 cultivar was 0.25 mg/1 and for Binkehel and Kolikuttu it was 0.5 and 1.0 mg/1 respectively. Callus formation was also observed with Rathambala, Muwanethikehel and Alukehel. The best concentration of 2,4 - d for these three cultivars was 0.25 mg/1. Somatic embryogenesis was observed in callus cultures of Binkehel, IC 2 cultivar, Muwanethikehel and Alukehel.

Seven weeks old embryogenic calli were transferred into liquid SH medium (modified) and half-strength Murashige and Skoog (1962) medium (MS) containing 2,4 - D or/and BAP (0.5 mg/1) and the cultures were agitated (40 rpm) in a shaker at 26° IC. Calli in liquid Ms (half - strength) medium with BAP 2,4 - D produced cell suspension with a large number of free floating embryoids. Calli in liquid SH medium produced cell suspensions without embroys.