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# *IN VITRO* GERMINATION OF HYBRID SEEDS OF BANANA

Embryo culture provides a way to get seed germination when it is not possible by ordinary methods. One of the major limitations of banana breeding is the low rate of germination of hybrid seeds (Rowe and Richardson, 1975). The erratic and generally low germination levels of seeds from many *Musa* clones has rendered the use of embryo culture a valuable technique in hybridization programme. Early studies in this field have given only two per cent germination of hybrid seeds (Simmonds, 1958). Cox *et al.* (1960) developed an *in vitro* technique for germinating seeds of *Musa balbisiana* and this was successfully tried by Rowe and Richardson (1975) in the Jamaican and Honduras banana breeding programmes.

Embryo culture technique was tried for the recovery of hybrid seedlings from the cross between *Musa* (AAB group) Mysore and *Musa* (AA group) Pisang Lilin in the College of Horticulture, Vellanikkara, Trichur, Kerala during 1987-89. The method standardised by Karmacharya (1984) and Krishnakumar (1987) was followed for hybridization. The fully mature bunches were harvested and ripened in the room. The ripe fingers were longitudinally cut with the help of a knife and the seeds extracted carefully, washed in tap water and rubbed with sand to remove the pulp. These seeds were surface-sterilized with 1.0 per cent silver nitrate for 10 min and washed with sterile distilled water three or four times. Sterilized seeds were then cut along the sides to remove the seed coat. The embryo embedded in the endosperm at the micropylar end was carefully removed without any damage and was inoculated into modified Knudson's medium (Rowe and Richardson, 1975). Both solid and liquid media were used. After inoculation, the culture tubes were incubated at 25°C in a culture room at 16 hours light and at an intensity of 2000 lux produced by cool white fluorescent tubes.

Germination occurred as a growth of white mass of callus. The callus tissue was covered with very small white hair like structures. From the callus, roots and shoots were produced. From 1 cm long tubular outgrowth, the first leaf separated. The embryos cultured in liquid medium grminated earlier than those cultured in solid medium. In solid medium, a slow rate of germination and growth was earlier reported (Stoltz, 1971) which might be due to the presence of agar which reduced the availability of water as a result of increased water binding by agar.

In liquid medium, 24 out of a total of 30 inoculated seeds, germinated recording a germination percentage of 80. Callus was produced within four days of culture, and roots and shoots were produced within seven and fourteen days of culturing, respectively.

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