

# FOOD & AGRICULTURE

Technologies for Better Quality of Life

## MICROPROPAGATION OF BANANA



*Various stages in the tissue culture production of Banana Plants*

Banana is an important fruit crop and one of the most valuable food sources in the developing world. Annual production of banana and plantains is estimated to be approximately 88 million tonnes making them the largest food crop in the world after the cereals. In India, banana is the largest fruit crop accounting for 32% of the total fruit production, yielding 13.9 million tonnes from 4.4 lakh hectare.

Micropropagation protocols have been standardized for the multiplication of various elite Indian cultivars. Several thousand plants have been regenerated and the plants have been evaluated at different locations by user agencies. Results have indicated that tissue culture developed plants are stable, uniform, early maturing and high yielding with good quality fruits. Experiments have also been designed for a simple low cost method for micropropagation of banana. A semi commercial tissue culture laboratory has been established at Maharashtra State Seed Corporation, Akola and Kamraj Krishi Vigyan Kendra, Pondicherry.

## MICROPROPAGATION OF PINEAPPLE

Pineapple is one of the important commercial fruits. Conventionally the average production is 4-5 prop-agules per year and it takes considerable time to produce enough planting material. Large scale production of planting material can be achieved by using *in vitro* micropropagation techniques. A protocol for large-scale multiplication has been established using dormant auxiliary buds from pineapple crowns with a capacity of producing 1000-1200 plants in a year from a single crown.



*Pineapple developed by tissue culture technique*

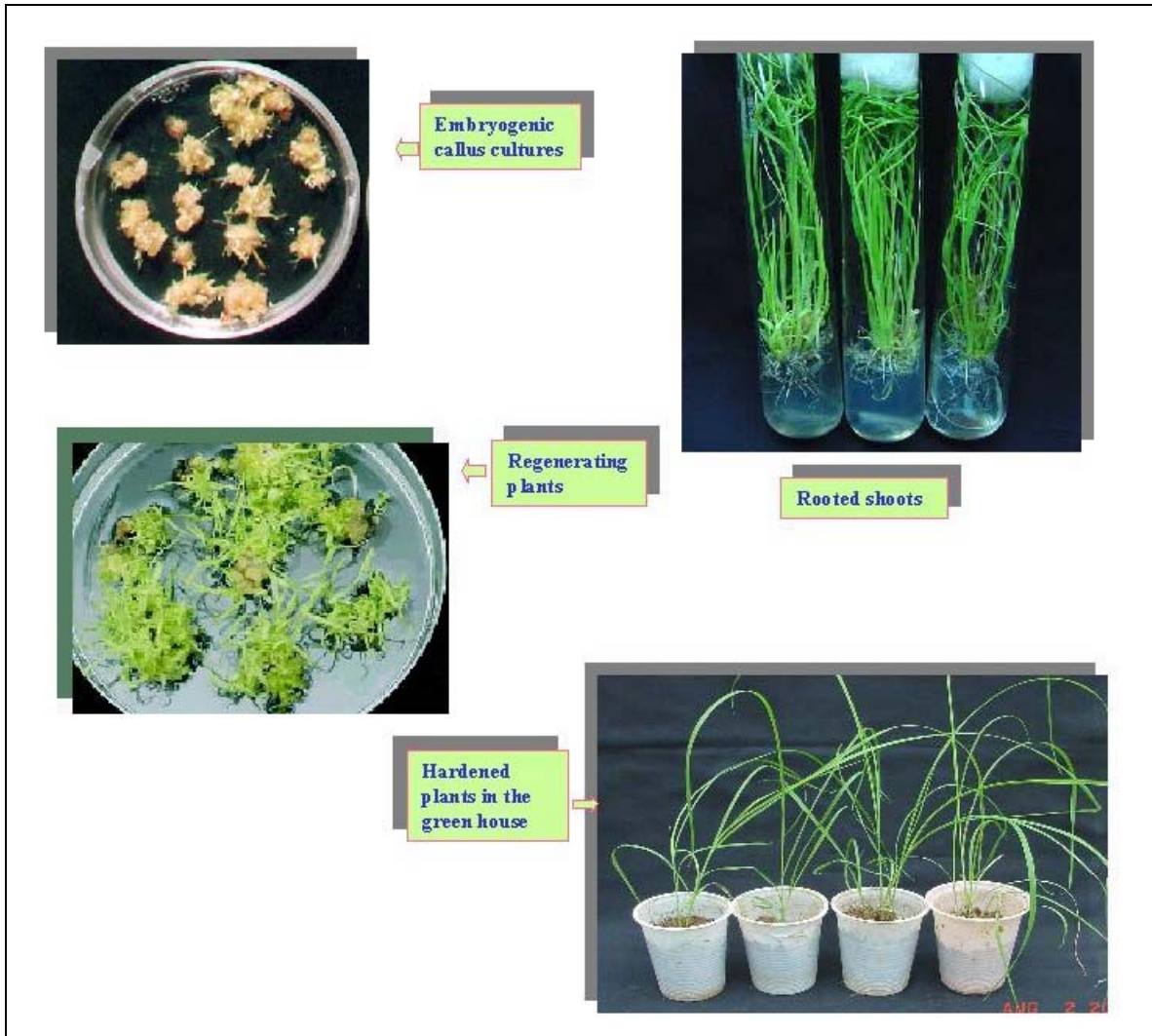
The protocol has been standardized for the establishment of cultures, multiplication, rooting and hardening of the plants in the field. Tissue cultured plants have been field planted at the BARC campus and the Rashtriya Chemicals Fertilizers (RCF) Experimental Field at Alibagh.

## MICROPROPAGATION OF SUGARCANE

Sugarcane is cultivated in more than 72 countries contributing to 60% of the world's sugar production. Sugarcane is propagated vegetatively by stem cuttings, which often lead to disease transmission to subsequent generations. Tissue culture techniques ensure the production of disease free planting material.

Protocols for the production of plants through micropropagation and somatic embryogenesis have been developed in three commercially important varieties of sugarcane, viz., Co-86032, Co-671 and Co-8014 using shoot apices. Shoot cultures have been provided to Krishi Vigyan Kendra,

Pondicherry and Marath-wada Agricultural University, Parbhani for further multiplication and field evaluation.



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