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(57) Abstract :

The present invention relates to a tissue culture-based crop production system designed for large-scale propagation of genetically uniform, disease-free, and high-yielding plants. The method involves (i) sterilization of equipment and preparation of culture media, (ii) selection and sterilization of healthy plant material, (iii) initiation and inoculation of explants onto nutrient-rich media under aseptic conditions, (iv) incubation in controlled environmental conditions, (v) subculturing for mass multiplication, (vi) rooting and hardening of plantlets, and (vii) acclimatization for field transfer. The invention ensures rapid multiplication, year-round production, reduced labor, and minimal land usage, making it suitable for commercial propagation of crops such as Banana, Orchids, Gerbera, Anthurium, Bhiringraj, Pudina, and Strawberry. This system enhances sustainability, efficiency, and profitability in modern agriculture and horticulture.

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