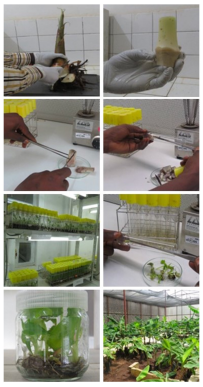
In-Vitro Tissue Culture Propagation In-Vitro Tissue Culture Propagation

A rapid quality plantlets delivery technology for banana

In-Vitro Tissue Culture Propagation involves a series of steps including initiation, multiplication, shooting and rooting, and hardening, all performed in controlled, sterile laboratory conditions to produce disease-free banana and plantain plantlets.



Steps of in-vitro tissue culture micro propagation: a) Removal of sheaths, b) Separated corm, c) Desinfection and segmentation of corm, d) Transferal to sterile tubes with growth media tubes, e) Culturing in climatized chamber, f and g) Transferal of propagules for proliferation of shoots by subculturing in jar, and h) Nursing of plantlets in screenhouse (Credit: B. Dhed'a)

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Technology originally documented by

ProPAS

Commodities

Banana/Plantain

Sustainable Development Goals

2 ZERO HUNGER

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

This technology is TAAT1 validated.

8·8 Scaling readiness: idea maturity 8/9; level of use 8/9

Gender assessment 4

Climate impact 7

Problem

- Traditional crops were more susceptible to extreme weather conditions, leading to significant crop damage and reduced yields.
- Traditional propagation methods were more susceptible to diseases, resulting in widespread outbreaks
- Natural disasters and disease outbreaks often led to slow recovery in agricultural systems

Solution

- In vitro micro-propagation eliminates all pests and diseases except for viruses.
- TC plants have the benefits of uniformity and fast propagation of large numbers of plantlets.
- These advantages enable marketing and more rapid recovery from broad-scale damage such as disease outbreak and extreme weather.

Cost: $$$ **1,3 USD**
Per plantlets

ROI: $$$ **40 %**
Profit

3000 Tissue Culture plantlets
A nursery business can produce 3,000 TC plantlets per cycle

IP
No formal IP rights

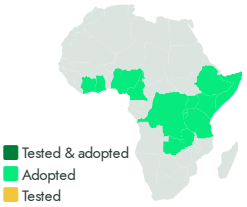
Categories

Production, Practices, Pest management, Yield improvement

Best used with

- Improved Varieties of Plantain for Tropical Lowlands ›
- Improved Varieties of Banana for the African Highlands ›
- Propagation of Disease-Cleaned Suckers ›

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.