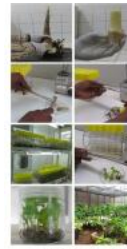


In-Vitro Banana Tissue Culture Propagation

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 propagation: a) Removal of shoot, b) Separation of shoot, c) Disinfection and sterilization of shoot, d) Transfer to sterile tubes with growth media tubes, e) Culturing in controlled chamber, f) Rooting in sterile tubes, g) Transfer of plantlets to pots, h) Hardening of plantlets in greenhouse (Droff & Shafiq)



This technology is **TAAT1 validated**.

8-8



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

Cost: \$\$\$ **1,3 USD**

Per plantlets

ROI: \$\$\$ **40 %**

Profit

3000 Tissue Culture plantlets

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



No formal IP rights

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.

Key points to design your business plan

Utilizing in-vitro tissue culture propagation enhances banana and plantain production by providing disease-free planting materials. To integrate this technology, consider steps such as:

- Business planning, obtaining financing for equipment, staff training, and farmer awareness campaigns.
- Source materials from countries with expertise in tissue culture propagation.
- Associate with other technologies like Improved Varieties of Plantain for Tropical Lowlands and Improved Varieties of Banana for the African Highlands, as well as Propagation of Disease-Cleaned Suckers, can maximize benefits.

Gender assessment

4

Climate impact

7

IITA
Transforming African Agriculture

International Institute of Tropical Agriculture (IITA)
Amah Delphine

Technology from

ProPAS

Commodities

Banana/Plantain

Sustainable Development Goals



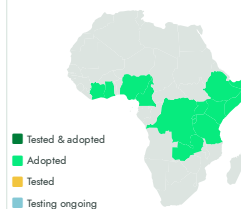
Categories

Production, Practices,
Pest control (excluding weeds),
Yield improvement

Best used with

- [Improved Varieties of Plantain for Tropical Lowlands >](#)
- [Improved Varieties of Banana for the African Highlands >](#)
- [Propagation of Banana and Plantain Disease-Cleaned Suckers >](#)

Tested/adopted in



Where it can be used

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



In-Vitro Banana Tissue Culture Propagation

<https://taat.africa/zqn>

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