

SAH: Semi-Autotrophic Hydroponics for yam multiplication

Multiplying Seeds, Securing Harvests, Ensuring Food Security!

SAH is a low-cost licensed technology designed for mass multiplication of yam through leaf nodal cuttings, which are grown in a sterile planting medium such as peat moss, decomposed sawdust, rice husk, or cocopeat. These cuttings are placed in transparent plastic containers under controlled conditions, where they develop roots, shoots, and eventually tubers.



Commodities

Yam

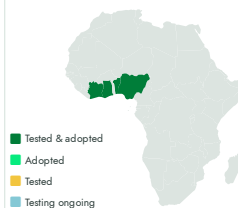
Sustainable Development Goals



Categories

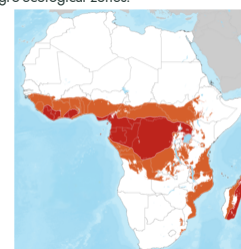
Production, Practices, Yield improvement, Seed system

Tested/adopted in



Where it can be used

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



Warning: This technology is **not yet validated**.

9:3



Scaling readiness: idea maturity 9/9; level of use 3/9

Gender assessment



Climate impact



Problem

- Insufficient Seed Supply:** The production of seed yam is inadequate to meet national food security needs.
- High Seed Costs:** Seed yam accounts for up to **50% of total production costs**, making it unaffordable for many farmers.
- High Seed Consumption from Previous Harvests:** Farmers typically **use up to 33% of their previous year's harvest** as seed, reducing food availability for consumption and sale.

Solution

- High Multiplication Rate:** A single box of **25 seedlings** can yield up to **500 plants in 90 days**, and over **1,000 plants** when transplanted into pots for further multiplication.
- Space Efficiency:** **1 million planting materials** can be produced within **60 square meters**, ensuring year-round supply.
- Scalability:** The technology is adaptable for **formal seed systems and commercial seed enterprises**, supporting the growth of the yam seed sector.

Key points to design your program

SAH Yam Technology ensures rapid, high-quality seed multiplication to tackle seed shortages and boost food security.

- Development partners should support training, infrastructure, and policy alignment.
- Collaboration with local stakeholders will scale the technology and enhance sustainable yam production.

2250 USD

Cost of producing 50,000 SAH seedling

33 %

Return on investment on seedling sales

60,000 USD

Construction or acquisition of the fixed assets

10,000—25,000 USD

Labor cost in West Africa per year

20,000 USD

Laboratory setup including shelving

15,000 USD

Consumables (Substrates, plastic box, nutrients and non-consumables and maintenance)



Open source / open access



SAH

<https://e-catalogs.taatafrica.org/org/technologies/sah-semi-autotrophic-hydroponics-for-yam-multiplication>

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