

PICS: Hermetic Bags for Safe Storage of grain

Low cost storage technologies for grain

Hermetic bags are like super-sealed containers that stop air and moisture from reaching the grains inside. This way, farmers can store their grains for up to two years without them getting bad. This is good for farmers because it means they always have enough food and can sell their grains for better prices.



Alliance



The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)
Laurie Kitch

This technology is **TAAT1 validated**.

9-9



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

Cost: \$\$\$ **2—3 USD**

Bag cost for users

ROI: \$\$\$ **90 %**

Reduction of loss

50 or 100 kg

Bag capacity

2 year

Life span

IP

Trademark

Problem

- **Post-harvest losses:** Farmers in Sub-Saharan Africa lose over 25% of beans due to inadequate storage methods.
- **Pest infestations:** Weevils, moths, and mites damage stored beans, forcing farmers to sell at low prices immediately after harvest to minimize losses.
- **Fungal contamination:** Traditional storage can lead to fungal growth, such as aflatoxin, contaminating beans and reducing their quality.
- **Food security issues:** Ineffective storage hinders farmers' ability to keep enough beans for consumption between harvests, threatening food security and livelihoods.

Solution

- **Airtight sealing:** The multi-layer design blocks air and moisture, preventing pest infestations without chemicals.
- **Moisture control:** Hermetic bags maintain stable moisture levels, inhibiting fungal growth like aflatoxin.
- **Long-term preservation:** They preserve beans for up to two years, maintaining quality and cooking time.
- **High durability:** Made from strong, reusable materials, hermetic bags ensure reliable grain storage.

Key points to design your business plan

This technology is beneficial for three main groups: manufacturers, resellers, and farmers. The production of hermetic bags for grain preservation offers a cost-effective solution free from aflatoxin and storage insecticide residues for small-scale farmers. Selling these bags not only provides a valuable product but also reduces the need for insecticides during grain storage.

Gender assessment **4**

Climate impact **5**

Technology from

ProPAS

Commodities

Common bean, Rice, Wheat, Maize, Sorghum/Millet, Soybean

Sustainable Development Goals



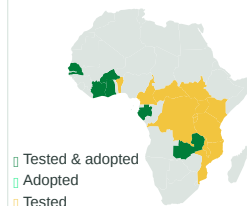
Categories

Prevention & storage, Equipment, Post-harvest handling

Best used with

- [Mechanized Threshing Operations >](#)

Tested/adopted in



Where it can be used

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



PICS

<http://taatdb-web.com/technologies/pics-hermetic-bags-for-safe-storage-of-grain>

Last updated on 1 October 2024, printed on 2 October 2024

Enquiries e-catalogs@taat.africa