Biological control of the pod borer Maruca vitrata with exotic parasitoids

Low-cost natural pest control

The "Biological control of Maruca vitrata pod borer with parasitoids" technology uses specific parasitic wasps to naturally reduce the population of this destructive pest. Parasitoid wasps, sourced from labs in Taiwan, are reared in controlled settings and released onto cowpea fields or wild plants. The goal is to establish a self-sustaining population of parasitoids to control pod borer infestations. This approach, coupled with resistant cowpea varieties and eco-friendly products, minimizes the need for chemical pesticides and protects cowpe...

This technology is TAAT1 validated.

7·7 Scaling readiness: idea maturity: 7/9; level of use: 7/9

5,000 USD

To install an initial pilot colony of parasitoids

6,000 USD

Running costs

IP

Open source / open access

Problem

- **Damage from Maruca vitrata:** The pod borer Maruca vitrata causes substantial damage to cowpea crops, resulting in yield losses of up to 80%.
- **Reliance on Chemical Pesticides:** Farmers traditionally depend on chemical pesticides to combat Maruca vitrata and other pests like aphids and thrips in cowpea fields.
- **Environmental Impact:** Excessive use of chemical pesticides can lead to environmental consequences such as soil degradation and harm to beneficial insects.

Solution

- **Biological Control:** Parasitic wasps from Taiwan reduce Maruca vitrata population by over 85% in Benin and Burkina Faso.
- **Collaboration:** National agencies release parasitic wasps onto cowpea fields, reducing reliance on chemical pesticides.
- **Integrated Pest Management:** Parasitic wasps, resistant cowpea varieties, and biopesticides minimize environmental impact.
- **Awareness:** Educating farmers about biological control benefits and preserving host plants is crucial.

Key points to design your business plan

Manufacturers benefit from the rising demand for sustainable pest management, leveraging parasitic wasps to diminish pod borer populations. They serve a diverse clientele, including research institutions, government bodies, and seed companies.

Resellers offer eco-friendly pest solutions to cowpea farmers, cooperatives, and extension services. They rely on partnerships to distribute and promote adoption, needing access to products, training, and ongoing support, with costs covering procurement, training, and compliance.

Users reap the benefits of biocontrol agents, witnessing enhanced cowpea yields and reduced pesticide reliance. They gain from partnerships for adoption and support, with significant yield increase potential, lowering production costs.

Gender assessment 4

Climate impact 4

International Institute of Tropical Agriculture (IITA)
Manuele Tamo

Technology originally documented by

ProPAS

Commodities

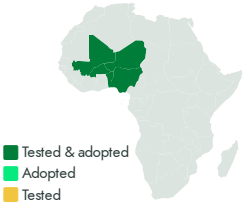
Cowpea

Sustainable Development Goals

Categories

Practices, Pest management

Tested/adopted in



Where it can be used

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