

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 involves releasing lab-reared parasitic wasps to naturally control pod borer pests in cowpea fields. By establishing a self-sustaining wasp population, it reduces the need for chemical pesticides. Combined with pest-resistant cowpea varieties and eco-friendly products, this approach offers sustainable crop protection.



IITA
Transforming African Agriculture

International Institute of Tropical Agriculture (IITA)
Manuele Tamo

Technology from

ProPAS

Commodities

Cowpea

Sustainable Development Goals



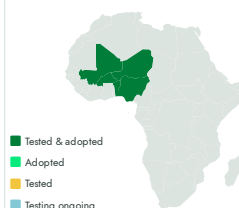
Categories

Production, Inputs, Natural Enemies

Best used with

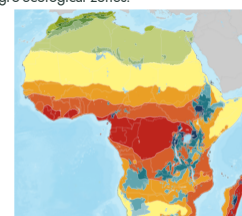
- [Integrated Management of Insects, Diseases and Weeds in common bean](#)

Tested/adopted in



Where it can be used

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



✓ This technology is **TAAT1 validated**.

7/7



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

Gender assessment

4

Climate impact

7

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 program

This innovative technology addresses the *Maruca vitrata* pest in cowpea farming, which causes significant yield losses in Africa. By introducing biological control agents like *Trichogramma chilonis* and *Telenomus remus*, it offers an eco-friendly alternative to chemical pesticides, leading to improved cowpea productivity. In Ghana and other West African countries, the technology has resulted in higher yields, healthier crops, and reduced pest damage.

For smallholder farmers, the technology boosts income, reduces input costs, and encourages sustainable farming practices. It is part of the Integrated Pest Management (IPM) Toolkit, working alongside other innovations such as pest-resistant cowpea varieties. Collaboration with organizations like IITA and national agricultural research systems ensures effective implementation and technical expertise.

5,000 USD

To install an initial pilot colony of parasitoids

6,000 USD

Running costs



Open source / open access



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<https://e-catalogs.taatafrica.org/org/technologies/biological-control-of-the-pod-borer-maruca-vitrata-with-exotic-parasitoids>

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