

# 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 cowpea...

This technology is **TAAT1 validated**.
 
 7-7
 
 Scaling readiness: idea maturity 7/9; level of use 7/9

Gender assessment

Climate impact

### 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 project

This approach enhances cowpea yields, reduces crop losses, and promotes food security and sustainable agriculture by reducing reliance on chemical pesticides and targeting key agricultural pests. To successfully incorporate Biological control of the pod borer Maruca vitrata with exotic parasitoids into a project, the following activities and requirements should be considered:

- Mapping cowpea yield losses due to pod borer.
- Raising awareness in national agricultural systems.
- Establishing national policies for the import and release of biological control agents.
- Training farmers in integrated pest management practices and the use of biopesticides, including costs for training and post-training support.

Accompanying solutions include:

- Using resistant/tolerant cowpea varieties against pests such as aphids, thrips, and pod bugs.
- Utilizing biopesticides such as 'neem tea bags,' which can be produced and sold as a community-based enterprise, such as by women's groups in Niger.

**5,000 USD**  
To install an initial pilot colony of parasitoids

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**6,000 USD**  
Running costs
 IP  
Open source / open access



**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

■ Tested & adopted  
■ Adopted  
■ Tested

Where it can be used

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



## parasitoids

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

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