



Feed the Future Country Fact Sheet

Online Version: <https://www.feedthefuture.gov/article/promising-new-technologies-improve-cowpea-production-west-africa>

Promising New Technologies to Improve Cowpea Production in West Africa



USAID

Undamaged (left), superficially damaged (center), and severely damaged cowpea pods (right).

New insect-resistant varieties of the cowpea are helping to reduce significant losses in yield due to better technology to combat pest and diseases.

The cowpea (or black-eyed pea in the U.S.) is an important staple in the diet of more than 200 million households in sub-Saharan Africa. It is a robust plant able to withstand the low rainfall and poor soil conditions of the region, yielding protein-rich seed and providing valuable nutrition to its inhabitants, while also fixing nitrogen in the soil.

Unfortunately, African cowpea farmers suffer heavy yield losses (often over 80 percent) due to pests and diseases, and most significantly from an insect, *Maruca vitrata*, which destroys the seeds in the pods.

As conventional breeding has been unsuccessful in developing insect resistance in the cowpea, and smallholder farmers have limited access to costly insecticides, Feed the Future is working with partners to develop new approaches to manage maruca infestation. With support from Feed the Future, the African Agricultural Technology Foundation is developing an insect-resistant, bioengineered cowpea, and the [Dry Grain Pulses Collaborative Research Support Program](#), led by Michigan State University, is working on bio control agents (or natural enemies of insect pests).

The insect-resistant varieties were developed using the same "*Bacillus thuringiensis*" or Bt technology that has been applied broadly in other crops around the world. Recent field trials of the Bt Cowpea technology in Nigeria and Burkina Faso have shown significant promise in maintaining yields in the face of insect infestations. Two promising Bt Cowpea varieties exhibited double the yield of the non-Bt control variety under insect pressure. As a next step, cowpea breeders are working to integrate Bt technology into farmer-preferred varieties, potentially making the Bt Cowpea available for widespread use within the next five years, pending regulatory approvals.

The bio control technology involves introducing a virus that attacks *Maruca vitrata* larvae inside the cowpea. Field trials are currently underway in Burkina Faso and a commercialized version of the virus is expected to be authorized in two to three years once the government has approved its use.

Both of these technologies are novel solutions under Feed the Future to improve cowpea production and combat insect infestation more effectively using fewer chemical fertilizers.