



PEST RESISTANT Bt COWPEA: W. AFRICA

NIGERIAN COWPEAS

Cowpeas are considered to be the most important food crop in dry areas of tropical Africa. The value of the cowpea to certain regions of Africa is underscored as

- Cowpeas are rich in protein and energy content, much like grains
- Cowpeas are a good source of animal fodder
- Cowpeas can be a source of cash income.

As a result, cowpeas are cultivated on more than 12.5 million hectares of land throughout Africa and consumed in some form or another by 200 million Africans citizens. Nigeria, in particular, consumes and produces more cowpeas than any other country in the world, about 75% of the total cowpea production in West/Central Africa.

BIOTECHNOLOGY

The most significant obstacle in high yield cowpea production is a pest called the *Maruca vitrata* pod borer. These pests reduce cowpea yields from 50-70% or even up to 80% in severe infestations. Laboratory work has shown that specific proteins derived from soil bacterium *Bacillus thuringiensis* (Bt), which can be genetically inserted into cowpea, kill *Maruca* pod borers without harming other non-target plants/animals. Bt proteins have been widely tested for safety, exist in many commercially available bioengineered foods in the U.S. and beyond, and are an organically derived pesticide used in the organic farming industry.



Source: John McMurdy

Maruca affected cowpea flowers



Source: Larry Beach

Maruca pod borer at work

REGIONAL IMPACT

The current annual production value of cowpea in Nigeria is approximately \$870M while the projected increased value of the Bt cowpea over 20 years is \$141M per year. Bt cowpeas also eliminate much of the small-scale farmers need to work with costly and potentially hazardous pesticides.

PROJECT STATUS

This USAID and Rockefeller Foundation funded program is being primarily led by the African Agricultural Technology Foundation (AATF) and others listed below. Confined field trials have been conducted in Puerto Rico (2008, 2009) and the first bioengineered crop field trial in Nigeria was completed in October, 2009. Authorization for confined field trials has been requested in Burkina Faso and Ghana.

USAID Partner Organizations: African Agricultural Technology Foundation (Nigeria), National Agricultural Research Institutes (Nigeria, Burkina Faso, Ghana), Commonwealth Scientific and Industrial Research Organization (Australia), Network for Genetic Improvement of Cowpea in Africa, Rockefeller Foundation, PBS (USA), Monsanto (USA)