Nigeria commercializes its first GMO food crop

Nigeria has reached a major food security milestone with the commercial release of insect-resistant cowpea — its first genetically modified (GM) food crop.
Cowpea, also known as “poor man’s meat,” is an important staple food and source of protein for millions of people in Nigeria and West Africa. But cowpea farmers can lose up to 90 percent of their crop to the pod borer (*Maruca vitrata*) pest and typically apply pesticides six or seven times within a planting season in an attempt to control the destructive insect.

This new variety has been genetically engineered to provide built-in resistance to the insect and will significantly decrease pesticide use, researchers said.

The pod borer-resistant (PBR) variety will also increase yields by about 20 percent, helping Nigeria to reduce its reliance on imports and achieve food security. Nigeria, the world’s largest producer and consumer of cowpea, currently imports about 500,000 tonnes of cowpea annually to meet demand.

Earlier this year, the National Biosafety Management Agency (NBMA) issued a decision to allow the environmental release of GM cowpea, which affirmed the crop’s safety. Now that the National Varietal Release Committee has approved Sampea 20-T for registration and commercial release, the seeds can be made available to farmers.

Sampea 20-T — the world’s first GM cowpea variety — was developed after nearly a decade of research by Nigerian scientists who introduced a gene from *Bacillus thuringiensis* (Bt), a natural occurring, soil-borne bacteria long used in organic agriculture, into local varieties of cowpea. Their field studies confirmed it confers near complete protection against the pod borer.

Dr. Abdourhamane Issoufou, country director of the African Agricultural Technology Foundation (AATF), said Nigerian scientists worked with institutions in Ghana, Burkina Faso and Malawi to develop the Bt cowpea. Scientists in Ghana have **completed field trials** on PBR cowpea and are expected to soon seek commercialization of the crop.

With today’s announcement, however, Nigeria continued to display its regional leadership in agricultural biotechnology. Since it is the first African country to commercialize a GM variety of this important indigenous legume, Nigeria’s actions are likely to have an influential effect across the continent. It has also approved pest-resistant Bt cotton.

Prof. Mohammad Ishiyaku, principal investigator in the cowpea project at the Institute for Agricultural Research (IAR) at Ahmadu Bello University in Zaria, said that the GM cowpea tastes just the same as conventional varieties. The only distinguishing factor is its resistance to pod borer infestations, he said. “The legume does not have any killer gene,” he said, and farmers can replant the seeds if they wish.

Research also has determined that the Bt protein, which dwells freely in the soil, is harmless in the guts of humans and livestock, he said.

“The Bt cowpea has gone through the necessary, relevant, vigorous experimental confined field trials since 2009,” Ishiyaku said. “It has undergone multiplication trials for gene stability in other ecological zones, demonstration field trials for farmers to appreciate its performance and multilocational trials.”

Ishiyaku emphasized that Bt cowpea will provide farmers with an alternative to costly and hazardous insecticide spraying and reduce the expense of applying pesticides on their farms.

“In trying to deal with the maruca infestation, farmers are forced to use heavy doses of insecticides, which are expensive and come with myriad disadvantages, such as being unaffordable to resource poor farmers, using up precious foreign reserves, being unsafe to health and the environment, causing death, sickness, disability, killing beneficial organisms, leaving residues on crop, etc.”

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