

GMO maize could halt devastating fall army worm invasion in Uganda—if it gets approved

Mary Yangi trekked a long journey from South Sudan to Uganda's West Nile region to settle as a refugee and, a few months later, into farming. Unlike others, who were reliant upon food rations from the United Nations High Commission for Refugees, the 59-year-old widow saw an opportunity when she settled in the Ngurua Village in the Arua District.

She befriended native Ugandans who were able to lend her land on which to grow maize.

"You know when one is watching news on Television or reading news on print media about the plight of refugees from South Sudan, the common thing you will see is families leading difficult life but coming from a family who treasured farming, I had to do what is right," Yangi said.

But now, Yangi and other maize farmers in the region are struggling to deal with a fall army worm invasion. The biggest hope for controlling the pests, which eat leaves and damage ears, may be found in new GMO seed varieties under development – but with no clear path to farmers. The nation is [still developing](#) its legal framework for the commercial release of GMO seeds, in the face of [opposition](#) from anti-GMO forces.

The jolly woman lives in a grass-thatched house on a homestead surrounded by a maize garden – though part of her small farm is some 200 meters away and suffering from a devastating fall army worm infestation.

Growing maize is nothing new for Yangi, whose family worked a small farm Nimule South Sudan before they were forced to flee the area. The army worms, however, are a new problem to face.

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Fall army worm

"Back home we used to grow a lot of maize and we experienced no insect infestation which is a different case here in Uganda," she said.

She said scientists from *Abi Zonal Agricultural Research and Development Institute (Abi ZARDI)* in Arua, located in the northwest part of the country, have visited on a number of occasions, advising farmers to spray a chemical called rocket to eliminate the army worms from their farms. But the team also promised that in the near future, farmers will be given a GMO maize variety that resists the fall army worm.

That farmers like Yangi are desperate for a solution is plain to see. Upon my arrival, the woman asked whether I might have thought to bring along a package of GMO maize seeds from Kampala.

Yangi now has a food security of sorts and has urged other refugees to take up agriculture to avoid being reliant upon UN aid. Still, there are challenges, including a prolonged drought, that makes plants more vulnerable to pests and disease. And many farmers in the area have given up on worm-threatened maize,

shifting to crops such as cassava.

GMO Maize breeding

There are a number of maize farmers in Africa who have faced the wrath of the fall army worm with some farmers experiencing 100 percent yield loss.

However scientists at the National Crop Resources Research Institute (NaCRRI) in Namulonge are working on a GMO varieties with both drought tolerance and resistance to the fall army worm.

An ongoing trial of the Water Efficient Maize for Africa (WEMA) have shown promising results for resistance against stem borers and fall army worms, said Dr. Godfrey Asea, director of the institute.

At the same time, scientists in several countries are testing GMO maize which can grow well in drought stricken condition and resist stem borer. The countries include Uganda, Kenya, Tanzania, Mozambique and South Africa, with farmers in the latter already growing the crop.

Uganda is in its fourth round of testing, with hopes that it could be released within two years.

[Dr Asea 3 23 18](#)

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Dr. Godfrey Asea explains the breeding process of GMO maize at a field trial site in Uganda. Image credit: Lominda Afedraru.

The GMO variety has shown considerable promise in field testing, Asea explained while taking visiting journalists on a tour. The GMO maize has stood successfully against infestations that have ravaged traditional varieties.

He believes that enough data has been collected by scientists involved in the research work. And he hopes that once the regulatory framework is finalized, farmers such as Yangi will see the benefits of these new seeds.

The conventional WEMA maize varieties bred for drought tolerance have already been released. But the

GMO maize variety is expected to improve yields if farmers follow solid agronomy practices.

On average farmers in Uganda using traditional hybrid varieties are able to harvest about 2.5 tons of maize per hectare. The hope is that the GMO varieties will boost that yield to 7 tons per hectare.

The case of Mozambique

Roseiro Moreira, social scientist heading the WEMA communications team in Mozambique notes that since scientists in Uganda have confirmed the GMO maize variety resists the fall army worm, this is good news for farmers in the southern part of the continent.

“In the case of Mozambique, there will be no problem in releasing the maize variety to farmers because the country has a biosafety law in place which allows release of GMO farm products,” Moreira said.

Mozambique passed its law in 2007, allowing scientists to conduct research and release products which have gone through final product development. The country is in its second stage of planting GMO maize.

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