

Helping Local Farmers Combat Fall Armyworm with CornBot



Food insecurity is a major challenge in Africa. Food production is limited by several factors ranging from environmental factors like desert encroachment and flooding to conflict and the invasion of farm pests. One thing is certain, if urgent steps are not taken, Africa may be plunged into famine and severe malnutrition. Fall Armyworm (FAW) is a major farm pest capable of destroying 85 plant species including maize, sorghum, and tomato. Projections show that if FAW is not checked, sub-Saharan Africa could lose up to \$13bn worth of food, keeping 300 million people hungry. Fall Armyworm (FAW) was discovered in Nigeria in 2016 and has currently been reported in 22 states. For smallholder farmers like Muntari Gwazo of Dawakin Kudu Local Government Area (LGA), who rely on intercropping and crop rotation to maximize food output, FAW is a very real threat. Unfortunately, Muntari Gwazo and his fellow farmers do not have the required skill or knowledge to control or eliminate the pest from their farms.

"The worms attack the leaves and seeds of the maize plant. I see them during planting and after harvesting my maize. When I open the cob, I find that they have eaten through the cob and buried themselves under the seed. They also eat the leaves."
- Muntari Gwazo

eHealth Africa has joined the global effort to curtail the spread of crops and the resultant destruction of crops. In partnership with Washington State University, eHA created "CornBot" as an entry for the FAW Tech Prize competition instituted by the United States Agency for International Development (USAID), Nesta UK, Feed the Future Foundation and the Center for Agriculture and Biosciences International (CABI), to reward initiatives that provide the best tech-based solution to FAW.

CornBot is a mobile application equipped with audio-visual algorithms that help farmers to identify, detect, prevent, manage and control FAW on their farms and in their local languages. The application also provides handy information that allows the farmer to make a request for specialist's help where needed. CornBot also has a dashboard that provides real-time information and a heat map for CornBot-reported FAW diagnosis and detection to researchers, decision makers and other stakeholders for surveillance purposes and informed decision making. eHealth Africa tested CornBot among 44 local farmers in Dawakin Kudu LGA of Kano state, where the FAW is prevalent.

Farmers were taught to use and interact with the App and National Youth Service Corps (NYSC) members were trained to support the farmers who could neither read nor use the application.

The app was well- received by the farmers and the results have been positive. The most distinguishing feature for Muntari was that the app could communicate in his local language, Hausa.

"When the eHealth Africa team presented the application to us, I was very happy that it could communicate in Hausa. It makes it easier for me to understand and follow the instructions. The app shows you a picture so even if you have never seen the worm, you will know what to look for. "

- Muntari

The results of the testing showed that 100% of the farmers were able to identify FAW on the first attempt. Muntari and his colleagues look forward to using the app

'We hope the tool will be given to us permanently. It has already helped many of us to identify, prevent and control this pest or call for help from the government or other organizations. We can also use the knowledge we have gained from the application to assist our fellow farmers' says Muntari, who we met again during the final field testing.

Improving food production outputs is essential to alleviate food insecurity, hunger, and poverty globally. Muntari's story validates Cornbot as a giant step towards achieving this goal.

