

Malawi registers Aflasafe®—the cost-effective technology for aflatoxin management



Agricultural extension and development officer explaining how aflatoxin contamination occurs.

The long wait for registration of [Aflasafe](#) products in Malawi has finally ended as the Pesticides Control Board (PCB) has now given the approval. Earlier, the technology was given the green light by the Agricultural Technical Clearing Committee, a unit under the Department of Agricultural Research Services (DARS).

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Meet CGIAR-IITA's women fighting plant pests and diseases



The current COVID-19 pandemic is a heart-wrenching example of how viruses can quickly spread from one continent to the next.

The way human diseases spread is not any different from how plant pests and diseases spread. [Lava Kumar](#), a virologist and head of the Germplasm Health Unit (GHU) at CGIAR-IITA, said, "Humans are the number one cause of plant diseases." With no ill intention, people carry plants, flowers, and fruit from one destination to the next, thereby spreading diseases over the whole world. "That is why it is always wise to carry only certified plants or seed to prevent the spread of diseases," Kumar added.



If pests or diseases spread—which is inevitable—there is a team of foot soldiers who work tirelessly to curb the pest or disease. In human medicine, it is doctors; for plants, it is plant health scientists. Continuing from the women's month of March, we want to recognize the women scientists who ensure that our food does not succumb to epidemics that result in famine.

IITA, one of the centers in CGIAR, has a team of 38 plant health scientists dedicated to ensuring the safety of plants

under the Institute's mandate—banana/plantain, cassava, cowpea, maize, and yam. This is the largest institutional team of plant health scientists in Africa and CGIAR. Of these, over 20% are women.

As we continue to celebrate women beyond the month of March and the International Year of Plant Health, 2020, we shine the spotlight on these eight women who have dedicated their careers to ensuring the well-being of our plants, and by extension—our food and nutrition security.

Hats off to IITA's women plant health scientists: [Leena Tripathi](#), Biotechnologist and Deputy Director of IITA's Eastern Africa hub; Jane Wanza, Agribusiness Specialist; Livia Stabolone, Molecular Biologist; Olufisayo Kolade, Disease Phenotyping Specialist; [Everlyne Wosula](#), Vector Entomologist; [May-Guri Saethre](#), Deputy Director General, Research for Development; [Titilayo Falade](#), Associate Scientist, Pathology; and [Charity Mutegi](#), Food Safety Scientist.

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This registration paves the way for the local manufacture and commercialization of this natural, safe, and effective technology that reduces aflatoxin contamination in foods and feeds by over 80%.

Aflatoxin is associated with several health problems in humans and livestock. High concentrations of aflatoxin in food also have a negative impact on trade and incomes of smallholder farmers. In Malawi, aflatoxin contamination is widespread, especially in groundnut and maize, which are main staples. This naturally occurring poison compromises public health, causes liver cancer, and is associated with child stunting and weakened immunity resulting in more illness. Livestock fed with contaminated feed also suffer reduced growth and productivity. Economically, Malawi's lucrative groundnut export market has been compromised by high levels of aflatoxin in crops.

"This registration and future local manufacture, the technology will be available for adoption by large groups of farmers in the country," said [Joseph Atehnkeng](#), Aflasafe lead scientist in Malawi. [CGIAR-IITA](#), DARS, and the United States Department of Agriculture – Agricultural Research Service (USDA-ARS), developed two Aflasafe products with support from USAID-Malawi and and USDA – Foreign Agricultural Service. Each product contains atoxigenic strains of the fungus *Aspergillus flavus* as active ingredient, which competitively displaces aflatoxin producers. The two registered products—Aflasafe MWMZ01 (regional) and Aflasafe MW02 (country-specific)

underwent extensive testing in farmers' fields for three years, mainly in the maize and groundnut-growing areas in Southern Central and Northern Malawi in (11 Districts and 22 Expansion Planning Areas (EPAs). These trials demonstrated that Aflasafe successfully and safely reduced aflatoxin levels in maize and groundnut by more than 80% for both groundnut and maize, compared to those crops from untreated fields.

The good strains contained in Aflasafe are native to the Malawi environment and, after field application, become dominant in the environment, thereby out-competing the bad strains from colonizing the crop. Each product is composed of four native-to-Malawi, non-poisonous types of the fungus *Aspergillus flavus*. Aflasafe controls the aflatoxins by outnumbering toxigenic strains. The products are applied 2 to 3 weeks before flowering.

[Ranjit Bandyopadhyay](#), Principal Scientist (Plant Pathology) and Leader of the Africa-wide Aflasafe Initiative at IITA, said, "With this, 14 Aflasafe products have now been registered for scale-up in Africa: one each in Senegal/The Gambia, Burkina Faso, Nigeria, and Kenya; and two products each in Ghana, Tanzania, Mozambique, Zambia, and Malawi."

The next steps are to finalize a commercialization strategy, currently being reviewed by GIZ, and involve the private sector in the production and distribution of the products. After a competitive selection process, IITA will license the products to a private sector



Joseph Atehnkeng talks to a farmer about how Aflasafe works on maize.

manufacturer and distributor to make the products available for farmers' use. IITA will also provide technical assistance to aid in the start-up manufacturing process for Aflasafe products. The Aflatoxin Laboratory at the Chitedze Research Station will continue testing future groundnut and maize crops to assist the key players in bringing Aflasafe to market in Malawi.

With all of this in place, Malawi will be ready to begin producing maize and groundnut crops that will both keep its people healthy and open up new and lucrative markets for Malawi's producers.

This milestone was achieved with the support of the Aflasafe team, especially [Lawrence Kaptoge](#), for helping set up the Aflatoxin Research and Training Laboratory; [Alejandro Ortega-Beltran](#), for reviewing the application dossier; and [Arega Alene](#) and [David Chikoye](#) for their administrative support.

Got a story to share?

Please send your story with photos and captions every Tuesday to iita-news@cgiar.org or Katherine Lopez (k.lopez@cgiar.org) and Uzoma Agha (u.agha@cgiar.org) for headquarters and Western Africa, Catherine Njuguna (c.njuguna@cgiar.org) for Eastern and Southern Africa, and David Ngome (d.ngome@cgiar.org) for Central Africa.



Biocontrol reduces Maruca pod borer population by 85%

Scientists based at [CGIAR-IITA's](#) climate change station in Benin are happy with the results of the just-concluded experimental release of wasps. These wasps, which are natural enemies of the Maruca pod borer, were released two years ago to go after the destructive cowpea insect. Results showed an 85% reduction in the population of the pod borers.

[Manuele Tamò](#), an insect ecologist and IITA's Benin country representative, was excited about the results, adding that the next stage is to release the wasps in Niger and Nigeria.

The Maruca pod borer is a pest that attacks cowpea leading to devastating losses of up to 80%. Farmers have resorted to spraying 6–8 times in

a season, which is harmful to both human and environmental health. The use of this biocontrol measure is another successful intervention in plant health as IITA and partners spearhead the move towards sustainable food systems. Watch Tamò explain more about this biocontrol method in [this video](https://youtu.be/MwTGcXSaWAU) (<https://youtu.be/MwTGcXSaWAU>).



Top: The wasps used for biocontrol in containment before release.
Bottom: Insect ecologist Manuele Tamò in an interview with Radio IITA.

Is agriculture a punishment or an opportunity?

It is no longer news that in Africa, agriculture is an occupation practiced by the aged in rural areas. African youth prefer migrating to urban areas in search of white-collar jobs to pursue a career in agriculture. This is because the youth have the mindset about agriculture being difficult and having little gains. The drudgery experienced in agricultural activities is also one of the reasons youth prefer white-collar jobs.

This used to be the scenario with a huge percentage of youth across Africa, but with the advent of technology, better and bigger

opportunities have opened up in agriculture, especially in agribusiness. However, Africans must have a change in mindset to access these opportunities.



Top: Lorraine Mutinda on STEP agribusiness talk session with students in Kenya.

Bottom: Small-scale agricultural mechanization training at Mwiki Secondary School in Kenya.

With the understanding that mindset change is easier to address at the early stages of growing among young Africans, CGIAR-IITA initiated the Start Them Early Program (STEP) in 2019 to redirect the aspirations of young people in secondary schools towards careers in modern agriculture by exposing them to viable opportunities in agribusiness at an early stage.

To determine the appropriate intervention strategy suitable for each country and school, the STEP team conducted a standard survey for 1264 students in eight secondary schools, in the Democratic Republic of Congo (DRC), Kenya, and Nigeria. The survey was carried out to better understand the mindset of young people towards a career in agriculture.

The survey had five categories:

1. School and student characteristics
2. Career pathway ambitions
3. Enrollment in and perceptions of agricultural coursework and practicals
4. Membership and participation in extracurricular young farmers' clubs
5. Engagement within home agricultural enterprises.

Many of the students revealed that they consider field practicals a punishment rather than a complement to the knowledge passed in the classroom. A few girls that seemed attracted to careers in agriculture had their focus on food processing and marketing, rather than on field cropping, animal rearing, and fish farming. Farming was perceived to require excessive labor with unfavorable results.

Following the result of the survey, training programs and practical tools were provided for students and teachers. In DRC, workstations were provided in schools to give young people the opportunity to develop their ICT entrepreneurship and innovations.

A small-scale farm machinery package was provided in Mwiki and Muongoiya secondary schools in Kenya. In Nigeria, training on the use of ICT in agriculture commenced for teachers and students.

This, according to the team, will create a mindset change towards agriculture among youths in schools in Africa, as plans are in process to extend the program to other schools soon.

IITA commissions new meeting facility at HQ in Ibadan

A new meeting facility was commissioned at [IITA](#) headquarters recently. The meeting room, based at the Facilities Management Services (FMS), is called the Savanna Room. It is an ultra-modern facility suitable for teleconferencing and online forums designed and built internally by the FMS team led by Waheed Quader.

“The room was named after the beautiful and vast plains of Africa—the savannas, which cover about 60% of the continent,” said Quader, who designed the facility, which used to be a refrigeration workshop. The brown and green color scheme used represents the stark beauty of the savannas, he added.

IITA Director General [Nteranya Sanginga](#) was on hand to inaugurate the meeting facility in late March. He declared the room “open for business” in a ribbon-cutting ceremony.

The function room provides a much-needed addition to meeting facilities in IITA, which are rented out at nominal prices for official events, workshops, and meetings. The room is insulated and sound-proof, boasts of Wi-Fi and online facilities, and is suitable for virtual meetings and teleconferences. It can accommodate some 40 to 45 people at any one time.

Already, the Management Team used the room early this month for one of its regular weekly Senior Management Team online meetings, discussing guidelines on preventing the spread of COVID-19 in IITA, among other things.

At the inauguration, Sanginga also advised Quader and his team to come up with a plan for maintaining the aesthetics in IITA and refurbishing and building up IITA’s meeting and office facilities, not just at headquarters but also in the hubs and stations where the Institute is building infrastructure to better serve partners in research in those locations.

In the recent past, FMS has helped build scientific and production facilities, laboratories, workshops, meeting venues, sheds, training rooms, and offices in various locations, including the Southern African hub offices in Zambia; The Pres. Olusegun Obasanjo Research and Development Center in Bukavu, DR Congo; the country offices in Mozambique; and offices and facilities in Abuja, Nigeria.

The major expense in refurbishing the room was erecting the wall panels and installing double glazed windows to provide better sound insulation. Some of the items in the room were contributed by staff.

Top right: The new Savanna Room in FMS. Right: DG Sanginga cutting the ribbon during the inauguration with Acting DDG-CS and Head of HR Lilian Mendoza; Below: DG Sanginga speaking to the audience.

