

Southern Armyworm identified in West and Central Africa!

A new pest—southern armyworm, *Spodoptera eridania* (Stoll)—has been discovered in West and Central Africa!

This introduced second armyworm species from the Americas was first found in cassava fields in southeastern Nigeria in December 2016, reported [Georg Goergen](#), Entomologist/Biocontrol Specialist and Head of IITA's Biodiversity Center in Bénin, but its presence was only recently confirmed by DNA barcode analysis at [IITA](#) headquarters in Ibadan.

The recent introduction of the fall armyworm (FAW) into the African continent and its growing threat to agriculture and food security have caused great concern in many of the 44 countries of tropical Africa invaded by this pest. Originating from the tropical regions of the Americas the FAW adult has a remarkable capacity for long distance migration and high female fertility. Its crop-destroying caterpillars can cause serious damage to maize but also to other important crops such as sorghum, rice, and vegetables, making the control of FAW a challenging task. The development of management options adapted to Africa has mobilized international experts and the national capacities of affected countries and raised general attention to caterpillar attacks on various crops.

Farmers had first observed an outbreak of caterpillars that caused severe defoliation on cassava in a 450-hectare field near Ubiaja in southeastern Nigeria in late 2016. Alcohol-preserved samples of the larvae were sent for diagnosis to the Biodiversity Center at the IITA station in Bénin, which did not match the morphological characteristics of FAW caterpillars. The species, however, appeared to have



Southern armyworm attacking cassava in Nigeria. Photo by Andrew Ajetola.

related origins and resembled closely the African cotton leafworm (*S. littoralis* [Boisduval]). In the absence of adult moths, it was concluded that the latter species, widespread in tropical Africa and known to feed on various kinds of food, must have attacked some sweet varieties of cassava that are less toxic to potential insect pests.

Similar observations were made in early 2017, when farmers submitted alcohol-stored samples of immatures for identification following complaints about dense caterpillar colonies in their cassava fields in the areas surrounding Dasso, southern Bénin.

Moths were finally obtained from tomato fields attacked in Yaoundé, Cameroon, and samples of adults were obtained from a scientist-colleague based at the University of Masuku, in Franceville, Gabon. The examination of the outer features of the moths together with the genitalia of both sexes clearly

identified the pest as SAW. Larval and adult samples were also collected and sent to IITA headquarters in Ibadan to the germplasm health, virology, and diagnostics unit for DNA barcode analysis. Results confirmed these findings.

According to Goergen, SAW belongs to the cosmopolitan genus *Spodoptera* that encompasses 31 species worldwide including many of the most important agricultural armyworm caterpillars such as FAW. The detection of the new pest adds to the eight species already known to occur on the African continent. Caterpillars, particularly mature instars of the SAW, are extremely variable in their general appearance and can hardly be identified based on physical characters alone.

The southern armyworm is native to the Americas, occurring widely from southern USA to Argentina. In Africa,

spectacular outbreaks comparable to those caused by FAW have not been observed; however, preliminary data show that the species is present in at least four countries in West and Central Africa, where it can be found on cassava, tomato, amaranth, and maize.

It is uncertain how long the SAW has been present in West and Central Africa and its possible pathways of

introduction into the continent are also unclear. Since their identification is difficult, populations may have remained latent in the field and only been sporadically noticed especially when young caterpillars aggregate on individual host plants before they disperse upon maturation. An interesting circumstance is that the southern armyworm and the fall armyworm share many important natural enemy species in South

America. IITA's Deputy Director General for Research for Development, [May-Guri Saethre](#), said that while this trait may become a significant stabilizing factor for common natural enemy populations, more research is urgently needed to assess its effective pest status in tropical Africa.

From IITA media release: [New pest identified in West and Central Africa!](#)

IITA welcomes the official launch of new project in Great Lakes

The Integrated Project for Agricultural Growth in the Great Lakes (PICAGL) was officially launched on 7 May, in Kinshasa. Official launch ceremonies were led by His Excellency the National Minister of Finance, Mr. Henri Yav Mulung, with the National Minister of Agriculture.

Also taking part in the event were [World Bank](#) experts appointed in DRC, various national and provincial personalities, including both governors of the provinces targeted by the project (namely South-Kivu and Tanganyika), as well as their respective provincial ministers in charge of agriculture. "The government calls on all of the stakeholders to fully engage and support project-related tasks to be carried out by its partners," stated Minister Mulung, in his address to the many attending dignitaries.

It's worth recalling that the project, originally focusing on the Growth 'Axles' in South-Kivu, started as early as April 2010. Subsequently, several identification and assessment missions were carried out in collaboration with World Bank experts and the DRC Government, leading to the development of the project's first concept note. IITA had been actively involved in the planning and conduct of the said missions, going as far as providing much of the logistical requirements. The concept note was endorsed in January 2015 as a regional project and approved in favor of DRC on 21 June 2016 by the World Bank Board.

Meant to run for a 5-year period (from 2016 to 2021), PICAGL is a DRC Government-led and World Bank-funded project, amounting to



Hosts and guests of honor including the National Minister of Finance (4th from left), the World Bank Representative, Ms Nora Kouaess (leftmost), and Provincial Ministers during the launch ceremony.

US\$150 million and a \$2.7 million additional donation granted by the Japanese Government. The project's interventions target South-Kivu and Tanganyika provinces, specifically emphasizing the Bukavu-Uvira-Fizi-Kalemie corridor, to reach 200,000 households as direct beneficiaries. Given its predominantly development-oriented pattern, the Project aims to increase agricultural productivity and market opportunities across targeted areas in the DRC, to boost regional integration in the agricultural sector, and to provide a timely and effective response to arising crises or emergency.

To achieve the above objective, the project will focus on three agricultural value chains of cassava, rice, and livestock-cum-dairy, selected during various field assessment missions, with a cross-cutting component pertaining to infrastructure. With

regard to the implementation of the planned tasks, the project is split into four components, namely: Boosting the Productivity of Agricultural Value Chains, Support for the Development of 'Agro-Industrial Parks', Regional Integration, and Backstopping Support Services and Project Management. In line with these, four institutions were selected as key collaborators or key partners in the project: IITA for cassava value chain, [Vétérinaires Sans Frontières-Belgium](#) (VSF-B) for 'livestock cum dairy' value chain, VECO for rice value chain, and [United Nations Office for Project Services](#) (UNOPS) for infrastructure.

With the National Institute for Studies and Agricultural Research (INERA), IITA stands as the key technical partner for this project, making it the hub for other centers of CGIAR that will be involved in PICAGL. These centers include [International Food Policy Research Institute](#) (IFPRI) for agricultural

policies, [International Center for Tropical Agriculture](#) (CIAT) and [HarvestPlus](#) for nutritional matters, [AfricaRice](#) for Rice, [International Livestock Research Institute](#) (ILRI) for livestock, and [World Agroforestry](#)

[Center](#) (ICRAF) for natural resource management.

In his keynote address during the launching ceremony, the Project's National Coordinator, Mr Kibangula

Alfred, said "The launch of the Project today is a source of joy for all of us and of hope for the beneficiaries, as developing the agricultural sector will contribute to economic recovery and diversification in the DRC," he said.

IITA marks the 2018 World Migratory Bird Day

Migratory birds are a great illustration of global interconnectedness. Students, ornithologists, and bird lovers convened in the [IITA Tree Heritage Park](#) at Ibadan to celebrate the 2018 [World Migratory Bird Day](#) (WMBD) on 18 May—a global awareness-raising campaign highlighting the need for protecting migratory birds and their habitats.

This year's event tagged "IITA Forest Center plantathon: habitat restoration for migratory and resident birds," combined tree planting, environmental education, and bird watching.

"One of the greatest challenges migratory birds face is habitat destruction, especially on their stopover and wintering grounds," said Adewale Awoyemi, [IITA Forest Center](#) Manager. "Habitat restoration is needed to reverse this trend, and in the rainforest zone of Nigeria, this implies tree planting, especially of native trees," he further explained. During the event, 360 seedlings of native trees were planted by 65 students from six schools that were members of the Forest Center's School Conservation Clubs: Ansar-Ud-Deen High School, Esther Foundation Girls School, Ibadan International School, IITA International School, and International School, Ibadan; and Olive Branches School, Osogbo. Fifteen staff from IITA also attended the event. All students participated in the tree planting (each school had a plot) and took biometrics data such as name and height of tree species and number of leaves.

Speaking at the opening ceremony, [Hilde Koper-Limbourg](#), [IITA](#) Deputy Director General for Corporate Services, commended Forest Center staff and other participants for their high level of enthusiasm in piloting conservation values among school children. "I believe this will help to develop their passion for nature in the near future," she added.

Out of excitement, Ebunoluwa Alao from the Olive Branches School said,



Hilde Koper-Limbourg addressing the participants during the WMBD celebration at the Tree Heritage Park, IITA Ibadan.



Students using binoculars to watch migratory birds during the bird watching session at IITA lake side.

"This is one of the special events I have ever attended. I had the opportunity to plant trees for the first time in my life and also see birds I never knew existed. I thank IITA for allowing us to witness this wonderful experience, which is a mixture of fun and science."

Awoyemi further energized the students saying, "I believe there are future scientists, ministers of environment, and policy makers, who will champion the cause of biodiversity conservation

in Nigeria, among you. So I encourage you to always remember the skills you acquired today and replicate them by establishing mini gardens and nurseries in your homes and schools." The students also had the opportunity of watching birds along the IITA main reservoir.

The IITA-Ibadan campus holds over 270 species of birds including migrants and residents, and is a globally important site for bird conservation.

IITA trains extension staff on aflatoxin as it prepares to scale out aflasafeTZ in Tanzania

As part of its push to ensure access to safe and aflatoxin-free food across Africa, IITA recently trained stakeholders in the governments' agricultural extension services in parts of Tanzania, on aflatoxin and on use of aflasafeTZ, the effective biocontrol product that reduces aflatoxin contamination consistently by more than 80% to safe levels.

Aflatoxin, a deadly chemical poison that can cause stunting in children, liver cancer, and even death in cases of severe poisoning, is produced by the greenish mold, *Aspergillus flavus*, which is commonly found in soils.

Aflatoxin contamination of major staple commodities including maize, groundnuts, and sorghum, and its negative impact on agriculture, trade, human and animal health is a major concern in Tanzania. In 2016, cases of acute aflatoxin poisoning that caused death were reported in three districts.

Studies also conducted in Morogoro district showed that aflatoxins are major contributors to the high stunting rate of 42% in the region. More than 99% of children who participated in the study were also found to have aflatoxin in their blood and urine, indicating chronic exposure to aflatoxins.

The innovative AflasafeTZ technology is also made with strains of *A. flavus* which do not produce aflatoxin but are instead able to displace those that do. AflasafeTZ was developed with *A. flavus* strains collected in Tanzania and is a result of collaboration between IITA, the U.S. Department of Agriculture-



Some of the participants at the Aflasafe trial fields where they were taught the practical application of the technology in the field.

Agricultural Research Services (USDA-ARS), and the Tanzania Ministry of Agriculture with financial support from [United States Agency for International Development](#) (USAID).

“Now that aflasafeTZ01 has been approved for registration we are preparing the country to receive and apply the technology by creating awareness. The product is safe. It is already in use in Nigeria, Kenya, Senegal, and The Gambia. We are excited that it will soon be available to smallholder farmers in Tanzania,” said [George Mahuku](#), IITA Plant Pathologist based in Tanzania, who led the training.

The training took place 14-15 May, in Kilosa, Morogoro, Tanzania, and brought together 37 participants drawn from Morogoro, Manyara, Dodoma, and Singida regions. The objectives of the

training were to update stakeholders on the progress made in the development and registration of AflasafeTZ; review strategies for creating awareness; and develop a road map for scaling out the product across the country for aflatoxin prevention.

Despite its threat to health, more than 75% of the people in Tanzania are not aware of aflatoxins and their health effects and continue to unknowingly put their lives and those of their families at risk from consumption of contaminated products. IITA has therefore been conducting a lot of awareness creation exercises to reverse this situation. The participants are expected to go back to their districts and disseminate information to farmers and other stakeholders along the maize and groundnut value chains.

N2Africa's technology helping kick out hunger in Kongwa District, Tanzania

Legumes such as cowpea, beans, and groundnuts are not only beneficial to human health as they are a rich and affordable source of protein; they are also beneficial to the soil. They fix nitrogen from the air into the soil improving its fertility thus, increasing the yield of other crops such as maize and sorghum when they are intercropped or in rotation.

IITA has partnered with Kongwa District in their initiative dubbed “Eradicate hunger in Kongwa” (*Ondoa Njaa Kongwa in Kiswahili*) and are promoting legume production to not only improve the nutrition of the people but also boost overall farm productivity. This is through N2Africa, a large-scale, science-based “research-in-development” project focused on

putting nitrogen fixation to work for smallholder farmers growing legume crops in Africa.

In collaboration with Kongwa District authorities, [N2Africa](#) has established at least 150 pilot large-scale fields of about one acre each in 15 villages with lead farmers. In 10 villages, the lead farmers are demonstrating intercropping of

improved varieties of cowpea (Vuli and Raha) and sorghum (Nako), whereas in the other five villages, the improved variety of groundnuts (Pendo) is being intercropped with an improved sorghum variety. The project is also demonstrating improved agronomy practices such as application of phosphorus fertilizers and use of herbicides for weed control.

According to Mr Jackson Shija, the District Agriculture, Irrigation and Cooperative Officer (DAICO)—the district is expecting a good crop this year due to the use of improved varieties and intercropping with legumes and use of good agronomic practices.

He said that farmers' perception toward the intercropping of staple crops with legumes is positive following the good yield they are getting.

"We need to continue training farmers to improve production and productivity," said Shija.

On the other hand, he said there is a need to continue ensuring consistent availability of seeds of the new improved varieties, building on the community seed growers approach that N2Africa has initiated in the area.

From the farmers' mouth: Benefits of intercropping with legumes

Silvanus Andrews was happy with the intercropping system as it allowed him to harvest different crops at the same time. This was echoed by Jane Diamon, a groundnuts and sorghum farmer from Sagara B village: "The improved farming methods we are learning are far much better compared to the traditional ways we have been using. For example, I grew groundnuts using the new ways I was taught on a small area and I harvested a lot more compared to previous years. I expect to harvest even more in this coming season," she said.

Christina Madege from Mlanga village tried the cowpea and



Bilha Mtembozi from Sagara A, grows groundnuts and sorghum.



Silvanus Andrew, a groundnut and sorghum farmer from Iduo village, shows off his intercrop.

sorghum intercropping and was quite impressed. "This is a good farming approach and has the potential to increase our income and empower us. Last year I had planted in a small land, and I harvested a lot of produce. This year, I have faith that I will get a good harvest as well." A notable result is that cowpea gives them an early crop and shortens the period of food scarcity.

She identified some of her major concerns as pest attack on cowpea and sorghum but said the project has

supported them in knowing the right pesticide to use.

Bilha Mtembozi, groundnuts and sorghum farmer from Sagara said, "When you mix sorghum and groundnut, you will gain from harvesting both crops. However, the challenge we are facing is the type of soils that we have that is highly exhausted of nutrients." She acknowledged learning different ways to restore soil fertility including use of legumes, animal manure, and mineral fertilizers but points out availability and high prices of fertilizers as big limitations in their use.

Got a story to share?

Please email it with photos and captions every Wednesday to iita-news@cgiar.org or Katherine Lopez (k.lopez@cgiar.org) and Uzoma Agha (u.gha@cgiar.org) for headquarters and Western Africa, Jeffrey T. Oliver (j.oliver@cgiar.org) for Southern Africa, Catherine Njuguna (c.njuguna@cgiar.org) for Eastern Africa, and David Ngome (d.ngome@cgiar.org) for Central Africa.

TAAT Program Steering Committee leads path to further progress

The Technologies for African Agricultural Transformation (TAAT) program has made further progress in the development of its Enabler Compacts, with the Program Steering Committee's (PSC) decisions, based on which Enabler Compacts are well geared to receive funding and immediately start up their operations.

Aiming for progress, Dr Mpoko Bokanga, the head of the TAAT Clearinghouse based in the IITA station in Cotonou, Bénin, has developed a document for the TAAT Program Steering Committee's use in considering and making decisions based on the recommendations over the 15 recently reviewed TAAT Compact Proposals. The document contained the recommendations on the restructuring of the TAAT Program delivery architecture to enhance focus on the objectives and targets of TAAT and facilitate follow-up of activities and monitoring of progress towards goals.

In April 2018, the second TAAT PSC meeting was held. An email was then sent on 20 April by Bokanga, with general feedback on the second

meeting of the TAAT PSC. The email briefly stated the decisions made by the PSC, while waiting for the Clearinghouse to send the PSC's final decisions to the Executing Agency for implementation.

From the nine Value Chain Compacts, eight were cleared for funding and immediate implementation. With very minor modifications that could be handled during implementation, the Clearinghouse was asked to ensure that the recommended modifications are implemented as well as to keep the PSC updated throughout the implementation. The work plan of the Livestock Compact is still being revised for assessment and presentation at the next PSC meeting.

Secondly, among the Enabler Compacts, only the Youth Compact was cleared for funding and implementation. The other Enabler Compacts were recommended for review and resubmission to the Clearinghouse for assessment. The Clearinghouse is working closely with the compact leaders and their partners to fine-tune their workplans and



Head of the TAAT Clearinghouse, Dr Mpoko Bokanga.

organize their compact launch events.

Bokanga said that "the TAAT PMU should expedite the signing of agreements between IITA and the other implementing agencies ([AATF](#), [CIAT](#), [ICARDA](#), [ICRISAT](#), and [WorldFish](#)) so that they can receive funds from the TAAT grant." AfricaRice has already signed and [IITA](#) leads the Cassava and ENABLE-TAAT Compacts.

The Visionaries profiles IITA on public TV

The national documentary series The Visionaries is profiling IITA in its current season.

The Visionaries is produced through a non-profit television production company that creates documentaries about individuals and organizations working to establish positive social change throughout the world. Last year, the production staff at Visionaries received hundreds of applications, and

IITA was selected to be profiled.

In all, 12 documentaries were produced, featuring topics on food sustainability, medical missions, the environment, domestic abuse survivors, and many other inspiring stories.

The program is hosted by acclaimed actor Sam Waterston of HBO's The Newsroom and Grace and Frankie and formerly of Law & Order. It is distributed through

an ACCESS feed through National Educational Telecommunications Association (NETA), and WGBY in Springfield, Massachusetts is the series' presenting station.

The full documentary will be shown to IITA audiences at a scheduled date. The documentary was shot on location in Tanzania, Kenya, and Nigeria.

You can also view the video [here](#).

Events

- **Enhancing Results-Based Management in RTB and program participants by harmonizing and strengthening ME&L systems**, 22–25 May, Ibadan, Nigeria.
- **N2Africa Annual Review and Planning Meeting**, 24–25 May, Kano, Nigeria.
- **GCP21 IVth International Cassava Conference: Cassava Transformation in Africa**, 11–15 June, Cotonou, Benin.
- **Africa RISING West Africa Project Review and Planning Meeting**, 6–8 June, Accra, Ghana.