

## IITA DG reviews progress of construction of Aflasafe manufacturing plant in Kenya...

IITA Director General [Nteranya Sanginga](#) recently visited the Kenya Agriculture and Livestock Research Organization (KALRO) station at Katumani, Kenya, to assess the progress of the ongoing construction of a plant that would manufacture and supply AflasafeKE01 to smallholder farmers in the country.

[Aflasafe](#) Ke01™ is a revolutionary biocontrol product, which has been shown to consistently reduce aflatoxin in treated food and feed by 80–99% in Kenya. It was developed by IITA and the

United States Department of Agriculture-Agriculture Research Services ([USDA-ARS](#)) in partnership with KALRO and with the support of other local institutions and development partners.

During the visit, held on 24 August, the DG was accompanied by [Lawrence Kaptoge](#), General Technical Manager BIP/Aflasafe Engineer and [Charity Mutegi](#), the Aflasafe project's East Africa Coordinator, who updated him on the progress made so far and plans for the launch.

The DG was impressed with the quality of work and the progress made thus far. He also pointed out areas that can be improved to make sure that the commercialization efforts run optimally, such as establishing foreseen demand and involving key partners in the commercialization efforts.

The plant is the first of its kind in the world and will be the second Aflasafe production plant in Africa after the one at IITA, Ibadan, Nigeria. Its construction is almost finalized and its launch is scheduled to take place early next year, a date chosen considering the elections in Kenya.

Sanginga also met the KALRO Katumani management and toured the regional mycotoxin research facility where he met the staff and students on training and attachment.

The team also shared plans to expand the mycotoxin laboratory in partnership with KALRO. The laboratory's construction was supported by the World Bank which rehabilitated an existing building at the Katumani center while the equipment was provided by USAID through the Aflatoxin Policy and Program for East Africa ([APPEAR](#)) project, USDA-ARS, and the World Bank. The Lab is used to conduct mycotoxin research and monitoring and surveillance of aflatoxin contamination in the region and for building capacity.



DG accompanied by IITA and KALRO Katumani staff as he tours the center.



Charity Mutegi gives an update on ongoing work on aflatoxin management in Kenya and East Africa.

## ...and visits East Africa hub for meetings

DG Nteranya Sanginga was recently in Tanzania where he attended the third meeting of the Independent Steering Committee (ISC) of the CGIAR Research program on Roots, Tubers and Bananas (RTB) and held meetings with the Belgian Ambassador and the Institute's staff and youth Agripreneurs at the hub.

The aim of the ISC meeting held in Dar es Salaam, 6-8 September, was to review the program's progress and provide feedback on the new phase and flagship projects.

As is his tradition, Sanginga took the opportunity to meet all the staff at the hub as well as the Tanzania Youth Agripreneurs (TYA). While meeting the staff, Sanginga updated them on developments at the Institute including the current financial status. He said IITA along with other CGIAR centers was facing a cut in funding and therefore it was important for staff to

put more effort into resource mobilization, exploring alternative sources of funding for activities as well as utilizing the available resources wisely.

Singinga further said he was pleased with the efforts by the administration in maintaining the research facilities including the Science Building, which was inaugurated in 2013.

Singinga spent time with the TYA team at their center of excellence at Kwembe, 40 km from Dar es Salaam, where he toured the various agro-enterprises carried out by the youth and assessed their progress. These include cassava processing and production, poultry, rabbit keeping, and fish farming

While he acknowledged their efforts and promised more support from the Institute, he also challenged them to work extra hard



*DG and Lawrence Kaptoge discussing the progress of construction during the visit.*

to expand their businesses and transform them into profitable enterprises to attract more youth into agriculture.

Singinga also visited the Belgian Embassy and discussed with the ambassador on how to strengthen collaboration with the Institute.



*The DG and IITA staff at the East Africa hub office in Dar es Salaam, Tanzania.*

## Burundi government and IITA partner on PROMEDA project

The Agricultural Markets Productivity and Development Project (PRODEMA) commenced officially on 28 August. IITA is leading the project under the auspices of the Government of Burundi's Ministry of Agriculture as the donor.

PRODEMA seeks to improve the productivity of small producers and facilitate their access to markets for maize, milk, banana, cassava, and fruits and vegetables. IITA will be partnering with ISABU (Institute of Agronomic Sciences of Burundi) and AVRDC (World Vegetable Center) as subgrantees and CNTA (National Center for Food Processing) and ILRI (International

Livestock Research Institute) as project implementing partners.

IITA leading PRODEMA adds to the organization's growing portfolio in

Burundi after the highly successful CIALCA project under the Central Africa hub. The project is slated to run for 29 months ending in December 2020.



*PROMEDA will improve productivity of small producers and their access to markets.*

# ACAI harvests Cassava Intercropped with Sweet potato trials

Four months after planting 102 trials for the Cassava Intercropped with Sweet Potato (CIS) project in the Islands of Unguja and Pemba, Zanzibar in the United Republic of Tanzania, [ACAI](#) and implementing partners in Zanzibar, ZARI, has begun harvesting potatoes from the trial fields.

Under the auspices of IITA, ZARI in collaboration with [Farm Concern International](#) (FCI) has been carrying out the potato harvests from 22 August until the second week of September. The successful harvest will be the first CIS trial harvest in Zanzibar since the project began. The initial 2016 trial harvest was not carried out after bad weather conditions resulted in stunted crop growth and hampered root and tuber formation.

ZARI's head of Roots and Tuber Research, Dr Haji Saleh says the 2017 season has shown robust growth developing under better weather conditions.

"We are expecting to harvest something this season based on visual evidence as opposed to the previous season," says Saleh.

The CIS trials were set up to evaluate performance of cassava when grown alongside sweet potatoes under different plant densities for the two crops to establish the optimum density for the intercropping, and to observe the effect of additional nutrients and different planting times in introduction of sweet potatoes.

The trials used varied densities of sweet potato at high to lower density (10,000, 20,000 and 33,000). Planting periods were also spaced between planting the two crops simultaneously, and introducing sweet potatoes at 2 weeks



*Khatib Haji and Seif Ali Masood from ZARI, collecting data from harvested samples at Matangatwani Trial Farm, Pemba Island, Zanzibar. Photo: Ngome – IITA.*

after planting (2WAP) cassava. Other treatments include fertilizer application and no fertilizer for other plots in the same trials.

ACAI in partnership with ZARI set up 102 CIS trials at ZARI stations in Kizimbani on Unguja Island and Matangatwani on Pemba Island and in selected farmers' field trials.

[Veronica NE Uzokwe](#), ACAI's agronomist in Tanzania, expressed optimism on the trial performance of the 2017 season trials.

"We are noticing that in cases where sweet potatoes were introduced later the plants look more robust and healthy than in cases where they were planted together," Uzokwe said.

Sweet potato is a key cash and food crop for smallholder farmers in Zanzibar. In both Unguja and Pemba districts of Zanzibar, sweet potato is most commonly intercropped with cassava according to ACAI. Farmers in Zanzibar face scarcity of arable land, unfavorable and unstable

weather conditions, and pests which result in poor yields.

ACAI is developing a cassava intercropping decision support tool to prescribe the best planting times, period of introducing sweet potatoes in cassava planted plots, optimal density of intercropping, and using appropriate fertilizer application.



*Ali Juma Haji, a farmer, displays harvested potatoes from his on-farm trial plots in Mitakawani, Unguja Zanzibar. Photo: Ngome – IITA*



*Mikakani Imara Women group members with ACAI team at the group's farm where ACAI is running CIS trials in Unguja, Zanzibar. Photo: Ngome – IITA.*

# Representatives of University of Hertfordshire, UK visit IITA-Abuja

On 31 August, a delegation from the University of Hertfordshire (UH), UK, comprising Stuart Smith, Head of International Affairs; Ave Vinick, Director of Development; and James Perrin, Regional Manager, Africa and Middle East, accompanied by Moyo Jolaoso, Former Director, Agriculture and Agro-allied Dept. of Nigeria Raw Materials Research and Development Council and Olusola Kayode, Consultant and Former Representative of Nigeria to UNIDO-France, visited the IITA-Abuja Station.

The visit aimed to explore possible areas of collaboration and partnership. The delegation held discussions with the Station Management, met with representatives of the Agripreneurs, and were led on a conducted tour of the Yam Tissue Culture facility. The delegation said they were impressed with ongoing programs and initiatives, particularly the IYA initiative.

Receiving the delegation, [Gbassey Tarawali](#), Head, IITA Abuja Station, apprised them about IITA and the strategic role the institution has played in the past 50 years, working with partners to help resource-poor farmers increase agricultural productivity. He talked about the IITA mandate crops including biofortification and the research hubs in West, Southern, East, and Central Africa. He also stressed Abuja Station's vital role in showcasing IITA's technologies to donors, embassies, development partners, and government agencies within Nigeria and beyond. Tarawali further explained about the efforts being made by IITA in addressing youth unemployment challenges in Africa. He also stressed the importance of collaboration in upscaling the IITA Youth in Agribusiness model and using it as a vehicle for addressing youth unemployment in Africa. He

mentioned that the model is currently being used in a youth program implemented in Nigeria and many other African countries.

Corroborating [Tarawali's](#) statements, [Richardson Okechukwu](#), Cassava Commodity Specialist and Officer-in-Charge of IITA-Onne Station, explained the importance of partnership to research and development in finding solutions to the problem of food and nutrition security. He gave a historical perspective on IITA's role in training postgraduate research students from across Africa. He pointed to available opportunities for partnership in research, breeding, yield and quality improvement, market linkages, extension, mechanization, livelihoods and resilience, food safety, and biofortification. He also emphasized the challenges of developing locally and environmentally adaptable motorized tools and machines that are portable, affordable, gender friendly, and available for the poor.

On the visitors' part, Perrin appreciated IITA on behalf of the team and thanked the Abuja Station management for the warm reception while expressing deep satisfaction with the work that IITA is doing especially in exploring options for attaining



James Perrin, Regional Manager, Africa and Middle East receives gift from IYA member, Adetola Oladini.

employment creation for youth across Africa. He mentioned a similar concern that had been raised about youth unemployment challenges during their earlier meeting with the Hon. Minister of Agriculture and Rural Development, Chief Audu Ogbah.

He said that from the discussions he sees several areas for potential partnership with IITA. These include training and support to education whereby UH can support research students by funding a percentage of their research costs and offering internship and exchange program opportunities; development of a pathway program that will enable students to commence research at IITA and transfer to UH for agricultural education programs; and UH sponsorship of research geared towards finding solutions to agricultural mechanization challenges. He therefore proposed an MoU on mutual areas of interest and partnership between the two institutions as a first step.

The visitors presented a gift to IITA Management, which was received by Tarawali on their behalf. In return, members of the Abuja youth also gave a present to the delegation, which was highly appreciated.



Group photograph during the visit to IITA-Abuja.

## Researchers solve mystery of how “Namikonga” withstands devastating effects of deadly viral cassava disease

Scientists have now shed more light on how a farmers’ variety in Tanzania is able to tolerate the deadly viral Cassava Brown Streak Disease (CBSD) after infection, showing limited symptoms and impact on yield.



A team of scientists has established that plants of the farmers’ variety Namikonga have a complex line of defense involving many biochemical pathways and genes that are able to limit the virus multiplication in their systems once infected. This in turn limits disease progression, restricting infection symptoms to the leaves only while allowing the normal root growth

without the necrosis—the dry brown rot associated with CBSD.

They have shared their findings in a paper [“A time series transcriptome analysis of cassava \(\*Manihot esculenta\* Crantz\) varieties challenged with Ugandan cassava brown streak virus,”](#) published recently in *Scientific Reports*, a journal of the Nature group.

CBSD is currently a major threat to the production of cassava in East, Central, and Southern Africa as it results in a dry brown rot in the roots making them unsuitable for any use and can cause yield losses of nearly 100%.

“Our findings show that Namikonga resists the virus by restricting its multiplication in the plant. This gives us new hope in our efforts to control the disease and revive cassava production,” says Teddy Amuge, a Plant Scientist, the lead researcher who worked with IITA, the Ugandan National Crop Resources Research Institute (NaCRRI), New York University, and the University of Pretoria, South Africa.

The team has for years been studying two Tanzanian cassava varieties—Namikonga and Albert—that are resistant and susceptible to CBSD, respectively. In Albert, the viral loads were higher and infection with the virus caused substantial leaf chlorosis and root necrosis. The study generated massive data that is now being mined further by several other research groups.

“We are very excited by these results, and are now working on approaches to allow plant breeders to quickly transfer this resistance into other, high-yielding cassava varieties,” says Morag Ferguson, corresponding author and principal investigator of this research.

This is the first large-scale study of how some cassava varieties are able to resist pests and disease, and this will help scientists to better control these pathogens.

“A better understanding of this effect may help scientists plan more successful strategies for breeding CBSD-resistant cassava in the future,” says Dave Berger, a vital collaborator from the University of Pretoria.

First reported in Tanzania, CBSD previously occurred at low levels primarily in coastal East Africa, Mozambique, and around Lake Malawi and was thought to be restricted by altitude. However, in the early 2000s, CBSD began to spread around Lake Victoria, and by 2004, typical CBSD symptoms were widespread in farmers’ fields in central Uganda. The disease has spread steadily since then as far as DR Congo and South Sudan and now, together with cassava mosaic disease, causes over US\$1 billion losses in production annually in Africa.

The findings complement a similar study that identified markers associated with genes of resistance to both CBSD and CMD in Namikonga and Albert varieties, published in the [journal \*Theoretical and Applied Genetics\*](#).

### Announcements

- **Africa RISING ESA Project Review and Planning Meeting**, Zanzibar, Tanzania, 11–15 September
- **Hands-on Basic Molecular Biology Techniques**, IITA, Ibadan, Nigeria, 11–15 September
- **International Workshop on Measures to Control the Spread of Maize Lethal Necrosis in Africa**, IITA, Ibadan, Nigeria, 25–28 September
- **Modeling under Climate Change Scenarios Hands-on Training**, Abomey-Calavi, Benin, 16-20 October
- **Basic Bioinformatics Workshop**, IITA, Ibadan, Nigeria, 23–25 October
- **R4D Week**, IITA, Ibadan, Nigeria, 20–24 November
- **Board Meeting**, IITA, Ibadan, Nigeria, 20–24 November
- **Science Conference on Food and Nutrition Security: Foresight and Futures**, IITA, Ibadan, Nigeria, 24-25 November
- **Open Day**, IITA, Ibadan, Nigeria, 25 November

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