IITA news
No. 2659, 19 –23 September 2022

# Bunchy top disease emerges as new threat to East African bananas

*Bunchy top disease-affected bananas in Kigoma region in Tanzania; virus infection causes severe stunting and bunching of leaves, and the plants do not produce any fruit leading to 100% loss. Photo: IITA/G. Mahuku*

Africa's leading banana production region is threatened by the invasive spread of the banana bunchy top virus (BBTV). The virus occurrence in East African countries was recorded in 2021, and the virus spread is unabated in the region. Urgent regional action is required to halt the expansion of the most lethal banana virus spread to safeguard banana production and banana biodiversity.

to page 3

# Cameroon seeks to strengthen ties with IITA in cassava production

His Excellency Gabriel Mbairobe, Hon. Minister of Agriculture and Rural Development (MINADER) from the Republic of Cameroon, visited IITA headquarters on 14 September.

*Hon. Gabriel Mbairobe meeting with the IITA Management team.*

His visit aimed to strengthen collaboration with the Institute, mainly to increase the production of cassava, which is in high demand in Cameroon. He also discussed finding a solution to the cassava root disease in the country.

During a meeting with the Minister, IITA Deputy Director General, Corporate Services, Hilde Koper, highlighted the activities of IITA in various hubs. She also mentioned the agreement IITA has had with Cameroon for about 33 years, saying that the Cameroon Ministry of Agriculture is the main funder for this collaboration. "The government gave us land for research, and we have also had lots of projects from your Ministry. We are grateful," she said.

IITA-West Africa Director Michael Abberton affirmed this statement while speaking about IITA's activities in the various stations in Nigeria. He praised Hon. Mbairobe for being a great champion of IITA in Cameroon.

Chrys Akem, Coordinator, TAAT Program Management Unit, spoke about the projects in Cameroon and mentioned the challenges affecting one of the ENABLE Youth Cameroon (EYC) projects. He appealed to the Minister to assist in resolving these challenges for the smooth running of the project. He also appreciated the Minister and the Cameroon government for trusting IITA to handle projects in the country. "Thanks for the collaboration," he added.

Komi Fiaboe, IITA Senior Scientist and Officer in Charge of IITA Cameroon Station, thanked the Minister for his visit. He also highlighted the richness of human capacity in agricultural research and transformation at the headquarters that could join forces with the IITA Cameroon team to support MINADER.

Hon. Mbairobe expressed joy at finally being able to visit the IITA headquarters. He said that the Cameroon government trusts IITA's research and is satisfied with the Institute's work in Cameroon. "We work with the IITA-Cameroon team on soybean and potato and wish to have a seed farm to demonstrate the excellence of IITA planting materials. But I also want to see what the headquarters does with cassava and how we can collaborate on that to reduce the importation of wheat in our country," he said.

Following the meeting, Hon. Mbairobe went on a tour of the Institute, visiting the Virology Laboratory, Genetic Resources Center (GRC), Semi-Autotropic Hydroponics (SAH), Cassava Processing and Mechanization Center, and the Youth in Agribusiness Center. After the tour, he shared his interest in working with the Virology, GRC, SAH, and Cassava Mechanization teams. He added that there would be follow-up discussions with the IITA team by the Department of Quality Regulation and Quarantine in the Cameroon Ministry of Agriculture. *Contributed by Ochuwa Favour Daramola*

*The Cameroonian Minister visiting the Semi-Autotrophic Hydroponics (SAH) greenhouse. in IITA, Ibadan.*

**Take responsibility! Stop the spread of COVID-19!**

Always clean your hands; practice physical and social distancing; wear face masks properly; avoid crowds and public places; keep a 2-meter distance from the next person; and practice general sanitation and hygiene.

## 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).

Radio IITA
Knowledge for Agriculture

## Bunchy top disease emerges as new threat to East African bananas

continued from page 1

The emergence of the banana bunchy top virus (BBTV), responsible for the bunchy top disease, is causing havoc in the Kigoma region of Tanzania. The virus infection results in severe stunting and complete loss of fruit production. The infected plants degenerate in the field and eventually die due to extreme stress. BBTV spreads through vegetative propagation of banana as well as by the aphid, *Pentalonia nigronervosa*, which is known to occur in all banana production regions.

In August, a team of scientists from IITA-CGIAR, Tanzania Plant Health and Pesticide Authority (TPHPA), and Tanzania Agricultural Research Institute (TARI) conducted a delimiting survey to assess the extent of BBTV spread in Kigoma and its impact on banana production. The ground situation suggests the unabated spread of the virus as farmers and local officials lack any knowledge about the new virus.

*Typical bacterial wilt symptoms—uneven and premature ripening of fruit that cannot be marketed or eaten. Photo: IITA/G. Mahuku*

"Farmers used to harvest 40 to 80 bunches per month from their 2.5-acre farm, worth 400,000 to 800,000 Tsh at an average cost of 10,000 to 20,000 Tsh per bunch, depending on the size. Since the BBTD outbreak about two years ago, bananas have become scarce, its selling price has doubled, making it unaffordable to most families in the district," said Mpoki Shimwela, a scientist from TARI.

Moreover, unaffected plants in the field are succumbing to another destructive disease, Banana Xanthomonas wilt (BXW), caused by the bacterium *Xanthomonas vasicola* pv. *musacearum*, which is endemic in the region and causing huge losses. This double challenge worries farmers as their banana plantations disappear and threaten their food and income security.

"Before the disease came, I used to harvest 60–80 banana bunches per month from my 2.5-acre land. I had enough money to pay for my son's education and employ people to work on my farm. Now, I must look for work to get money to buy bananas for my family," commented Alex Baletse. He has lost most of his banana crop to BBTD and BXW.

"From the interactions with farmers and extension officers, it is apparent there is a lack of awareness about the new virus, including symptoms, diagnosis, and control methods. We need to intensify efforts to disseminate information about disease symptoms and actions to prevent virus spread," commented George Mahuku, IITA Plant Pathologist and the survey team lead.

The disease is spreading over long distances through infected planting materials. Farmers source the planting material from their neighbors or their own farm. "Seemingly healthy plants might be infected, as it takes time for disease symptoms to manifest," said Lava Kumar, IITA Virologist who has been leading the BBTV ALLIANCE to contain the spread of the virus in sub-Saharan Africa. "This is why it is very important to test planting materials while multiplying to ensure that farmers are accessing only clean planting material," he added.

As part of the CGIAR Plant Health Initiative, the IITA team is working with national partners to contain the spread of BBTV and recover banana production.

# IITA Forest Center expands its species conservation bank

On 25 August, IITA Forest Center contributed to ecosystem restoration in a tree planting exercise sponsored by Botanic Gardens Conservation International (BGCI), with forest rangers from Okomu National Park, Edo State. Other participants included nature lovers from the Center for Sustainable Development, CESDEV-Ibadan, the Ibadan Bird Club, and the Sustainable Development Solutions Network.

The planting ceremony commenced with a brief indoor session, highlighting the conservation efforts of the Forest Center. Forest Center Field Supervisor Ademola Ajayi, who anchored the meeting, explained the vital link between IITA and Forest Center mandates. He said, "IITA promotes agricultural development through research and delivery. However, agriculture cannot thrive without a sustainable environment. This is where the Forest Center comes in."

In her opening remarks, IITA Deputy Director General (DDG) Corporate Services, Hilde Koper, congratulated everyone for participating in such a critical exercise. She said, "Planting trees is for the future of everybody. The trees you will be planting today are either rare, endangered, or threatened species. You would be contributing to preserving what matters to live sustainably with our environment." She was delighted to see young people from the Ibadan Bird Club show up to plant trees. She urged everyone to be good ambassadors of nature conservation.

*DDG Hilde Koper and Forest Center Manager Adewale Awoyemi planting a tree, closely watched by two-year-old nature ambassador, Jethro Awoyemi.*

She added, “People always want to do other things with the forest. So it is not easy to keep forests, but we have to keep maintaining forests. We can always spread the message. We can live together—trees, humans, animals, everyone, together.”

Forest Center Manager Adewale Awoyemi corroborated the need to preserve the species the attendees would plant. He enjoined all to see the ceremonial tree planting as a selfless service to nature. He said, “Some of the trees we will plant today will mature in the next 40 years when some of us will be long gone. But we would have put treasures down on earth for generations to come.” He acknowledged that most of the tree seedlings planted during the ceremony were sourced from the Okomu National Park, which had able representatives at the event.

Participants proceeded to a cleared section of the Tree Heritage Park to plant seedlings in already dug holes marked with stakes. The Tree Heritage Park is the Forest Center’s Noah’s Ark to preserve ex-situ endangered, vulnerable, and threatened native trees. It serves as a live gene bank for native tree species. The species planted were *Sterculia oblonga, Khaya ivorensis, Entandrophragma candollei, Strombosia pustulata, and Pterocarpus erinaceus.*

The event witnessed the youngest nature ambassador, two-year-old Jethro Awoyemi, who eagerly volunteered to plant his tree seedling. It was a testament to how adults can cultivate children’s interest in nature and nature conservation very early in life. Ajayi took the opportunity to invite all to join the Ibadan Bird Club every last Saturday of the month, where nature lovers gather to enjoy nature at its best through bird watching. *Contributed by Folake Oduntan*

*Top: Eager IBC junior member, Jethro Awoyemi, participating in the tree planting ceremony. Center: Okomu National Park forest rangers planting a tree seedling. Bottom: Forest Center Field Supervisor Ademola Ajayi addressing participants at the BGCI-sponsored tree planting exercise.*

# IITA trains science messengers to promote agricultural research

In a virtual seminar organized by IITA-CGIAR on 12 September, Program Manager of Biotech and Genome Editing Communication based in IITA Nairobi, Patricia Nanteza, spoke about "Empowering effective science messengers through capacity building and communication." Nanteza highlighted her work in Science Communication over the last three years and its impact across Africa.

Nanteza shared her experience working with the IITA Communication Office in Ibadan as a Science Writer before taking on the Program Manager role. She explained how she amplified the work of scientists through print and video documentaries. Highlighting two major stories that showcased the excellent work of scientists over the years, she mentioned the IITA Insect Museum in Benin for pest control and advocacy for science-based guidelines for gene-edited products.

She also shared videos that showcased IITA's contributions to plant health during the International Year of Plant Health (IYPH) 2020. "This research has contributed to the greatness of the Institute," she said.

Nanteza said that she moved to Nairobi in 2021 to lead capacity building for biotech communication. Her primary role was empowering science communicators through training. To date, over 100 science messengers—scientists, journalists, and farmers—have been trained, with policymakers also involved as facilitators to enable participants to better understand what is expected of them in the policy making process. "We have trained 18 scientists in partnership with Science Stories Africa on storytelling and how to amplify their stories. We also trained farmers in Nigeria and Kenya to amplify their voices," she said.

To boost internal communication, Nanteza started a webinar series titled "Spotlight your research" to strengthen team cohesion, demystify science, and help staff members know whom to go to for help. The webinar series is for everyone, not just researchers.

Highlighting the future, she mentioned that more scientists, farmers, and journalists would be trained and empowered as science messengers for biotechnology products in their communities. She also stated plans to work with the Communication Office, to establish IITA as the African Science Communication center of excellence.

Nanteza appreciated all partners for their support, including the IITA Communication team in Ibadan and Nairobi, scientists, administrators, and external partners, especially the Alliance for Science. *Contributed by Ochuwa Favour Daramola*


*Science communicators visiting the biotechnology labs at ILRI-Nairobi during one of the training sessions.*

# National agency to collaborate with IITA on mandate crops

Another partner, the National Agency for the Great Green Walls (NAGGW), wants to partner with IITA to explore various areas of collaboration. The team was led by Executive Director, Dr Yusuf Bukar.

Kwame Akuffo-Akoto, IITA Deputy Director General, Special Duties, welcomed and introduced the team to the activities and different hubs of the Institute in sub-Saharan Africa. He said that IITA is ready to provide help in terms of linkages with scientists and is open to collaborating with NAGGW.

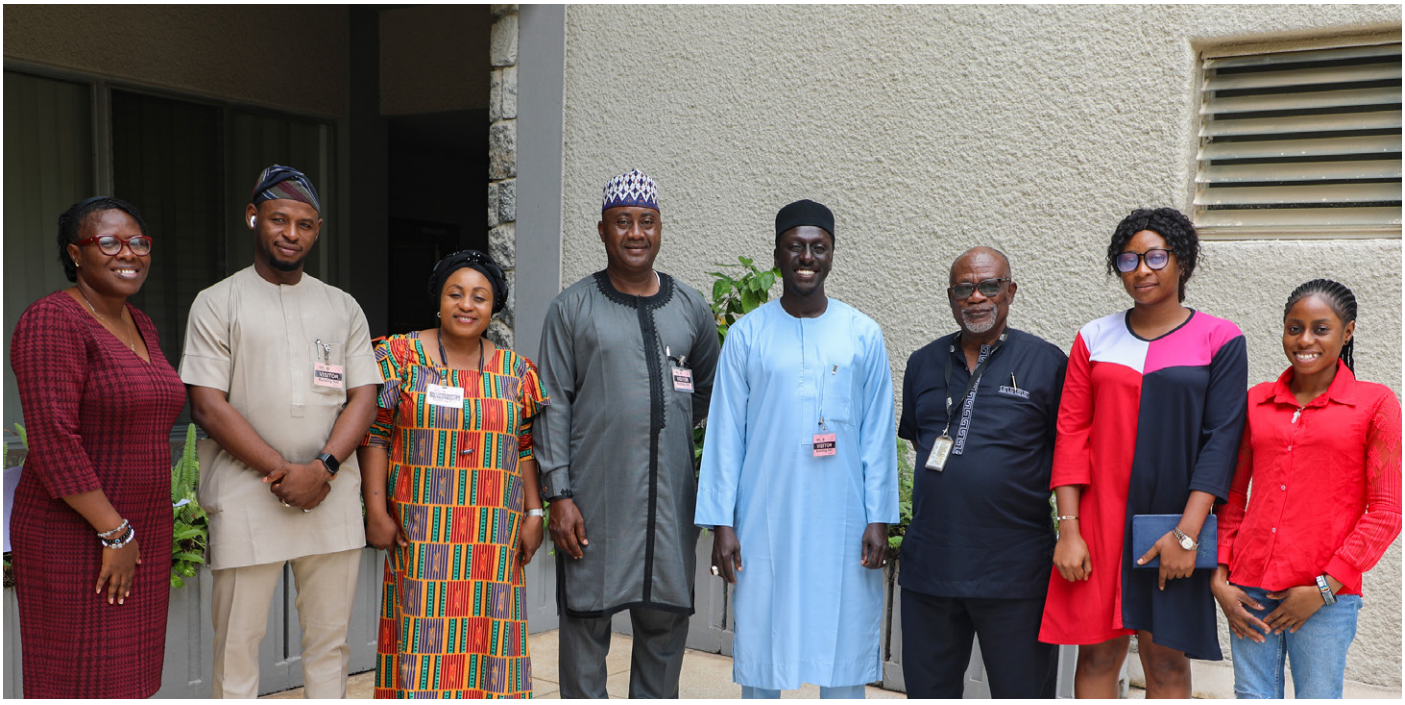
NAGGW was established to combat desertification and land degradation and improve food security and human livelihood. It also provides essential support for communities to adapt to climate change in the Sahel and Sahara region of Africa.

Bukar commended IITA for its boundless work in improving the agricultural sector across Africa. "NAGGW has a lot of potentials, and we look forward to the collaboration between both organizations," he said. In addition, the Executive Director mentioned that NAGGW is particularly interested in agroforestry in IITA and mandate crops such as cassava, cowpea, plantain and banana, and rice. He showed interest in these crops because they would benefit vulnerable communities, and the drought-resistant varieties can be planted with trees in the northern areas. He also mentioned that they have a special interest in trees and grasses.

Alice Kano, NAGGW Senior Forest Officer, added that NAGGW would also want to collaborate with the IITA Youth Agripreneurs (IYA) in the youth empowerment program, focusing on value addition.

In response, Akuffo-Akoto said the team would be linked with the scientists responsible for the crops. He added that both organizations share the same mission, which is the sustainability of the environment. An official partnership agreement would serve as a framework for working together.

The team visited the Germplasm Health and Virology Unit, cowpea, plantain and banana units, and Forest Center to explore some indigenous trees that can be adapted to the NAGGW program. *Contributed by Anita Akinyomade*



*Top: NAGGW Executive Director Dr Yusuf Bukar (left) discussing with IITA DDG-Special Duties Dr Kwame Akuffo-Akoto*
*Bottom: The NAGGW team with IITA representatives.*