DG Nteranya Sanginga meets DRC President in Kinshasa

IITA Director General Nteranya Sanginga met with His Excellency Felix Tshisekedi, President of the Democratic Republic of Congo (DRC), this week in Kinshasa, the capital of DRC. Dr. Sanginga was part of the delegation led by President Akinwumi Adesina of the African Development Bank (AfDB) that went to DRC on a four-day official visit.

IITA-Bukavu is home to the second tissue culture laboratory for the production of healthy cassava seedlings using the innovative SAH technology. The first one in Ibadan, Nigeria, was inaugurated in November 2018.

According to Sanginga, the President is very excited about visiting the IITA Kalambo Station and was very impressed with the description of the semi-autotrophic hydroponics (SAH) technology. SAH is a low-cost licensed method for rapid propagation of virus-free cassava plants suitable for commercial cassava seed growing. Sanginga said, “The President wants to extend the technology to the whole of DRC to benefit the millions of cassava farmers.”

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Biocontrol solutions to “Fusarium wilt of banana” emerge

The banana crop and industry has experienced extreme losses due to an epidemic of Fusarium wilt of banana (FWB), caused by Fusarium oxysporum f. sp. cubense (Foc). This was described in the recently published article “Biological control agents against Fusarium wilt of banana.”

FWB, also known as Panama disease, has plagued countries in Africa, Asia, and Australia. The disease is particularly difficult to control for several reasons including being a soilborne fungus with a long survival rate in the soil (more than 20 years), even in the absence of plant hosts, or within alternate hosts, which do not necessarily show disease symptoms. Among other reasons, it is also a vascular pathogen, which escapes contact with control agents once it penetrates the plant.

Africa has had some cases of classical biocontrol successes, one of which was the use of biocontrol for cassava mealybug that reduced losses by over 90%. This
The initiative was led by IITA. Many interventions have been put in place by the Institute and partners, including Food and Agricultural Organization of the United Nations (FAO) and FAO’s World Banana Forum, to prevent the spread of FWB. These interventions include the Global Program on the Banana Fusarium Wilt Disease and ProMusa International Banana Symposium.

Plant diseases are usually managed by integrated frameworks with an emphasis on preventive measures, especially in the absence of highly effective control means. This is particularly true for soilborne diseases like FWB and Verticillium wilts, with causal pathogens that cannot be eradicated once they contaminate the soil.

A higher FWB incidence has been associated with low soil pH, but such an observation has not been reproduced experimentally. Also, ammonia fumigation and biofertilization have been reported to reduce FWB incidence in a pot experiment, with concurrent increases in soil pH, nutrient contents, and beneficial microbial community. Although no clear experimental evidence exists about the effectiveness against FWB of raising soil pH, it is known that Foc prefers low pH.

A suggested solution to the invasion of FWB is adequate irrigation and fertilization regimes, as well as monthly treatments with zinc sulfate. Waterlogging and acidification of nutritive solutions should be generally avoided.

Also, crop rotation has provided attractive results in some cases. Lower disease control levels have been obtained by using rotations with maize, sugarcane, sunflower, or eggplant.

Biological control and host genetic resistance have been considered the most important strategies for the management of FWB. Findings of this research suggest that biocontrol can greatly limit the damage caused by FWB. However, biocontrol should not be considered as an independent tool, but adequately implemented in an integrated management framework.

Studies have shown that combinations of biocontrol organisms with silicon and mulching, or with neem cake can be advantageous compared to the individual applications, and therefore can provide a better control option for banana growers who have to deal with FWB in their plantations.

The research recommends that more efforts be put in place to further validate currently available outcomes, to deepen the knowledge on the most valuable biological control agents, and to improve their efficacy by setting up effective formulations, application protocols, and integrated strategies.

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Typical symptoms of Fusarium wilt on a banana plant.
TAAT collaborates with CORAF on implementation assessment of Harmonized Regional Seed Regulation

Major actors of the seed industry in West Africa met in the Senegalese capital, Dakar, on 11-12 June to assess progress made in implementing the harmonized regional seed regulation.

The Harmonized Regional Seed Regulation was adopted in 2008 by the Economic Community of West African States (ECOWAS) and in 2009 by the West African Economic and Monetary Union (WAEMU).

The primary goal is to create a favorable environment for the growth of the seed industry. All ECOWAS member countries, including Chad and Mauritania, have adopted the law.

The meeting was organized jointly by the Policy Enabler Compact of the Technologies for African Agricultural Transformation (TAAT) and the West and Central African Council for Agricultural Research and Development (CORAF). Sponsored by the African Development Bank (AfDB) as part of its Feed Africa initiative, TAAT’s main objective is to improve the business of agriculture across Africa by raising agricultural productivity, mitigating risks, and promoting diversification and processing in 18 agricultural value chains within eight Priority Intervention Areas.

The TAAT Policy Enabler Compact is led by the African Agricultural Technology Foundation (AATF). The compact operates to strengthen economic, trade, and institutional policies that contribute to higher productivity, competitiveness, and processing intensity across value chains and agroecological zones by working closely with national and regional partners.

The Dakar meeting assessed the state of implementation, identifying bottlenecks as well as developing a road map to speed up implementation.

Specifically, the discussions addressed five broad areas namely certification for variety dissemination, quality control and certification of seeds, phytosanitary certification of seeds, institutional arrangements for the implementation of the seed policy, and private sector participation in the implementation of seed policy.

The close to 50 participants at the workshop were drawn from the national seed systems of the 17 participating countries, the regional economic communities, smallholder farmer organizations, research institutions, and funding partners.

Representatives from the Common Market for Eastern and Southern Africa (COMESA), the Southern African Development Community (SADC), and the East African Community (EAC) were also invited to share their experiences.

As a key technical partner of ECOWAS and other regional economic commissions, ECOWAS designated CORAF in 2013 to facilitate and coordinate the implementation of the harmonized regional regulation for seeds and seedlings in the Member States.

AATF, on the other hand, was founded in 2003 to address Africa’s food security outlook through agricultural technology. AATF responds to the need for an effective mechanism that would facilitate and support negotiation for access to technologies and the provision of appropriate partnerships to manage the development and deployment of innovative technologies for smallholder farmers in sub-Saharan Africa.
AfricaYam visits BTI and NextGen ahead of the project’s proposed second phase

The AfricaYam Project Leader, Patrick Adebola and IITA Yam Breeder, Asrat Amele recently visited Boyce Thompson Institute (BTI) and NextGen Cassava team in Ithaca, USA.

BTI is an independent research institute, which uses plant sciences to improve agriculture and has been involved in the AfricaYam project from inception. They created a database called YamBase that hosts pedigree data, phenotypic data from field trials, genomic resources and laboratory assays, as well as assemblage of curated historical phenotypic data from IITA and partner programs for analysis.

The Institute has also conducted numerous training for the user groups in both IITA and the breeding programs of the four target countries. YamBase so far counts over 54,000 accessions with over 1,500 genotypes, 7 breeding programs, 197 assayed traits, about 414,000 phenotype scores, and over 325 trials.

Adebola said the one-week visit was aimed at meeting with the BTI YamBase development team to review the progress made so far and to suggest areas of improvement and plans for AfricaYam phase 2.

He also noted that during the meetings with the BTI group, they made useful suggestions on how to improve the usability of the database and suggested additional traits to be added to yam ontology. “It is our hope that YamBase will be a one-stop-shop for farmers,” he said.

They also met with the NextGen Cassava team in Cornell and explored areas of possible collaboration in preparation for AfricaYam phase 2. NextGen Cassava is a Breeding project that works with a number of institutional partners and collaborators for efficient delivery of improved varieties of cassava.

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.