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IITA BIP team sets new production per hectare record for yam farmers in Nigeria

The Business Incubation Platform (BIP) of IITA has set a new record of 23 t/ha for yam production in Nigeria. This record, which was achieved through a controlled trial, has been set to guide farmers in achieving increased yields from their yam farms.

Yam is the common name for plant species of the genus *Dioscorea* and an annual root tuber-bearing plant with more than 600 species. Some of these species are water yam (*Dioscorea alata*), white yam (*D. rotundata*), yellow yam (*D. cayennensis*), lesser yam (*D. esculenta*) and three-leaf yam (*D. dumetorum*). Nigeria is the largest producer of yam in the world, followed by Ghana, Côte D'Ivoire, Benin, Togo, and Cameroon.

Traditional yam producing areas have been experiencing a decline in yam production due to declining soil fertility, poor yam plantlets, increasing pest pressures, and the high cost of labor. The IITA-BIP decided to work on a controlled trial with the aim of realizing higher yam yield and assist farmers in achieving the same in their farms.

The trial was handled by Paul Ajayi, Agronomist at IITA GoSeed, a unit that is focused on producing early generation seed in Nigeria, and supported by Ryo Matsumoto, IITA Yam Agronomist. The planting was done in April 2019 and harvested 8 months later, in November.

In an interview with Victor Saleh, Communication Executive at the IITA-BIP, Ajayi mentioned that they were able to harvest 23 t/ha, which is far higher than the average production of 13.1 t/ha in Nigeria. He went further to say that it's possible for farmers to harvest 18-20 t/ha on average if good agronomic practices are followed.

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Paul Ajayi and Ryo Matsumoto, showing off the harvested yam.

IITA celebrates all women on International Women's Day

On 9 March, IITA celebrated the International Women's Day (IWD) 2020, at the Institute's headquarters. The theme for this year's observance was "Generation Equality: Realizing equal rights for an equal future."

IWD is a day globally recognized to celebrate the achievements of women in various fields such as social, economic, cultural and political as well as science, technology, engineering, and mathematics (STEM).

As is the usual practice to recognize and appreciate women's valuable contributions to the Institute, IITA marked this important occasion by organizing a walk for staff and students of the IITA International school. A seminar also took place to discuss gender equality in the workplace and society.

During the seminar, Kenton Dashiell, Deputy Director-General, Partnerships for Delivery, encouraged staff to endeavor to continually promote gender equality in the workplace. "A gender-equal IITA can be healthier, wealthier, and more harmonious," he said. Dashiell further enjoined staff to do what they can to make a positive difference for women working in IITA and around the globe.

In achieving gender equality, Patricia Nanteza, IITA science writer, called for gender-insensitive behavior to be penalized. However, in a speech in a video clip at the Stockholm Forum on Gender Equality, Chimamanda Ngozi Adichie said that to establish gender equality, it is necessary to change laws that diminish women, but that it is more important to change the mindset of people.

Some of the IITA women also performed a short playlet to pass the message that men and women must work together for gender equity to be possible.

Group photograph of IITA staff and students after the seminar.

IITA staff trying out the equality sign during the gender equality seminar.

IITA Abuja staff also participated, showing the equality sign.

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During the interview, Matsumoto and Ajayi mentioned that farmers have low yield because they lack correct and adequate information about yam production. Issues of availability and accessibility to quality and improved seed yam as planting material; and lack of adequate knowledge on good agronomic practices involved in yam production have been a barrier to better production for farmers.

The agronomists also highlighted key pre-planting, planting, and post-planting measures that can help farmers achieve this great yield. They include proper land preparation, treatment of planting material, mulching, staking, timely and adequate fertilizer application, proper weed management, and other daily operational routines.

They further advised that yam farmers who intend to have a bumper harvest every season should go for training on yam production to acquire the right knowledge and skills in yam farming, get quality plantlets, and adopt good agronomic practices for maximum yield.

The BIP team is open to collaboration on projects that involve commercial yam production. Quality yam plantlets for seed production can be obtained from IITA-BIP-GoSeed.

For partnership in seed or tuber production, individuals and companies can reach Akinyemi Ibikunle (akinyemiibikunle@iiatgoseed.com) on +2348039784783 or Victor Saleh (victorsaleh@iitagoseed.com) on +2348039784176.

The controlled trial yam field.

Victor Saleh, Communication Executive of IITA-BIP post-interview with Paul Ajayi.

Dealing with malnutrition in poor rural communities? Growing your food is better than relying on markets

Think back over the last month. What types of food have you and your family consumed? Have you eaten a balanced and diversified diet? The answer may not matter; what matters is who or what influenced your food choices. These and more are the questions that researchers from IITA set to find out. The study was carried out in Uganda with rural households as the sample population. The researchers wanted to combat malnutrition, but before recommending policy options, they needed to understand how and why people eat what they eat. The study, titled Farm Production Diversity: Is it important for Dietary Diversity? Panel Evidence from Uganda was recently published in Sustainability.

The two existing hypotheses are: first, when rural communities grow a variety of crops on their farms, they

will have a balanced diet, thus solving malnutrition – especially undernutrition that is prevalent in most African rural communities. The other hypothesis points to markets as the more important determinant of a varied diet. Haruna Sekabira, a socioeconomist with IITA, together with other researchers, set out to study these hypotheses. Their results show that the better option for Uganda (where the market infrastructure is relatively weak, and the largest proportion of the population is dependent on agriculture) to combat rural hunger and malnutrition is via farm production diversity.

Moreover, merely having access to a market selling a variety of foods does not necessarily mean that households will consume a diversified diet. According to the researchers, "this is because access to food is dependent on income access." They further explain that "Chronic hunger has been attributed to food access being dependent on income access. Therefore, income inequality alienates poor households from food markets", i.e., if you do not have money, you will not purchase a variety of foodstuffs even though they are on sale. However, if one can grow a variety of food in their garden, they will enjoy a balanced diet.

With the right pathway to solving rural malnutrition resolved, the study unearthed some other interesting findings that influence food choice at the household level. For instance: Male-headed households have less diversity in their meals compared to female-headed households, i.e., members of a male-headed household are more likely to experience nutrition deficiencies than those in female-headed households. "This gender disparity may be explained by the fact that males control household incomes, yet females predominantly control feeding patterns and choices.

The head of the household owning a mobile phone also positively influenced household dietary diversity. Mobile phones enable access to information and knowledge about types, content, and quality of foods eaten. Mobile phones also enabled access to remittances (mobile money) which enables consumption.

Education level and adult age: With sufficient education, household heads can learn and understand feeding basics, thus enhancing nutrition knowledge.

Remoteness was associated with better dietary diversity since remoteness is linked to more land available for farming, allowing more crops/livestock to be produced on the home farm.

Indirectly, therefore, policies that promote farm production diversity in Uganda (and rural Africa) are more relevant in improving food and nutrition security. This is not to say that markets do not have a role to play in dietary diversity. They do; however, growing more crops/animals on a household farm has a larger associated positive impact on household dietary diversity than market access.

NIHORT evaluates IITA plantain hybrids for possible distribution to farmers

Following a call for stronger collaboration and partnership, the National Horticultural Research Institute (NIHORT) has embarked on the evaluation of hybrid plantain and banana germplasm from IITA and its partners, for possible distribution to farmers.

IITA Regional Breeding Manager for plantain/banana improvement in West and Central Africa, Delphine Amah, during an earlier visit to NIHORT, made the call for closer ties between IITA and the national institute, which has the mandate to work on banana and plantain in Nigeria.

In a recent interview, Amah recalled, "In the past, there really was not much collaboration between IITA and NIHORT on banana and plantain, but in recent years we have tried to bring that collaboration to life."

In response to that call, Plant Breeder and former Head of NIHORT Genetic Resources Unit, Dr Dorcas Olubunmi Ibitoye, followed up with a request for germplasm for test purposes with the understanding that successful evaluations may lead to the distribution of said germplasm to farmers/end users. IITA eventually delivered 35 varieties to NIHORT comprising plantain, dessert and cooking banana hybrids originating from the Brazilian Agricultural Research Corporation (EMBRPA) and the Honduras Foundation for Agricultural Research (FHIA).

After a more recent visit, Amah expressed delight with the level of progress made and the professionalism and seriousness the NIHORT team exhibited as they had gone ahead to plant the materials and begin the evaluation process immediately after receiving the materials. She described how, despite the adverse weather conditions and budgetary constraints, they had shown strong commitment by planting and taking the extra step of installing an irrigation system to supply water to the farm.

In a paper, Promising High-Yielding Tetraploid Plantain-Bred Hybrids in West

Delphine Amah (second right) during a revist to the evaluation field at NIHORT.

Top: The NIHORT/IITA banana germplasm collection. Right: The planted materials being maintained at NIHORT.

Africa, published in the International Journal of Agronomy, the authors noted: "Despite the economic importance of plantains in the humid lowlands of West and Central Africa, the sustainable production is threatened by pathogens and pests, posing a risk to household income generation and food security."

The NIHORT team will maintain the high-yielding disease-resistant plantain and banana hybrids to multiply and evaluate with farmers. Farmers are always requesting improved varieties from IITA and NIHORT and the expectation is that this evaluation will deliver some productive results for them.

How wasps are used to control the destructive cowpea pest—*Maruca vitrata*

Maruca vitrata, also known as Maruca pod borer, is one of the most devastating insect pests of cowpea in Africa. Its larvae stage, the caterpillar, is the most destructive and attacks flowers and pods of various legumes causing up to 80% yield loss.

Farmers resort to inappropriate pesticide applications with some spraying the legume as many as six times in a planting season, which is two months. Extensive pesticide use is harmful to humans and the environment because the beans have pesticide residues, which affect human health when consumed. Also, extensive pesticide application discriminately kills other beneficial insects.

IITA scientists based in Cotonou, Benin, led by Manuele Tamò, an insect ecologist, are using biocontrol to deal with this destructive pest. Biocontrol is the use of natural enemies to fight a pest.

In this video, Tamò explains the process of using a natural enemy—the wasp—to fight the destructive *Maruca vitrata* pest in cowpea: https://www.youtube.com/watch?v=FpPL15lUbUY.

Video explaining how wasps are used to control Maruca vitrata.

US Consul General visits IITA for collaboration on advocacy matters

On 11 March, the US Consul General, Ms Claire Pierangelo and her team visited IITA Ibadan campus. The purpose of the visit was for the Consul General to understand the activities of IITA and help in areas of advocacy and partnership with international organizations.

After giving the team a warm welcome, Kwame Akuffo-Akoto, Acting Director-General gave a brief introduction of IITA and a video was shown giving an overview of the Institute's activities. "We are always happy to welcome our partners," Akuffo-Akoto said.

Explaining the purpose of their visit, Ms Pierangelo, mentioned that the team is interested in knowing areas where the US Consul can advocate for IITA and Nigerian policy that can help farmers and boost the activities of IITA. "At the end of the day, we want to see your research put into action with better funding," she added.

The team was also taken on a tour of the Institute, focusing on the units under the Business Incubation Platform including Aflasafe and Nodumax.

After a brief lecture on the benefits of Nodumax to soybean by Ayodele Alonge, Nodumax and GoSeed Plant Manager, Gerald Smith, Regional Counsellor for USDA Agriculture, advised that IITA reach out to soybean farmers in Osun State to encourage increased soybean production through the application of Nodumax. "Visiting Osun State, I realized that they are looking to scale up in soybean production. Let them know about Nodumax," Smith said.

Above: The team on a tour, visits Aflasafe unit under the IITA Business Incubation Platform. Below: The US Consul General, Ms Claire Pierangelo, explaining the purpose of their visit.

At the end of the tour, Ms Pierangelo promised to revisit IITA with her public affairs team, to get more information and highlight the activities of IITA on their information page.

A group photo: IITA staff with the US Consul General and her team.

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.