

Cassava Matters

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Improved weed control help farmers to record 27tons/ha from on-farm demonstration farms



Farmers celebrating their cassava from a demonstration plot

On-farm demonstrations in Ogun state, Nigeria under the IITA Cassava Weed Management Project have produced average yields of 27 tons per hectare surpassing the national average of about 8 tons/ha.

The demos were conducted in 2016 in the three senatorial districts of Ogun states using an integrated weed control package developed by the IITA-CWMP.

Presenting the results during the Joint Quarterly Review Meeting of the project in Abeokuta, Dr Patience Olorunmaiye, a scientist at the Federal University of Agriculture Abeokuta (FUNAAB), said the yield from the demonstration plots were impressive and a proof of concept that if farmers adopted improved weed management practices, they would be better off.

The highest yield from the demonstration

farms was 32 tons/ha with 96 percent of the demonstration farms recording more than 20 tons/ha.

Prof Friday Ekeleme, Principal Investigator of the IITA-CWMP said the results clearly show that weeds were a major factor limiting the potential of cassava in Africa.

In the last four years, the IITA-CWMP with funds from the Bill & Melinda Gates Foundation made a bold decision to unravel the puzzle of weeds menace in cassava.

Working with a coalition of partners including the Federal University of Agriculture Abeokuta, University of Agriculture Makurdi, the National Root Crops Research Institute, and extension partners, the team set up trials in the three agroecological zones of the country including the humid forest, derived savannah and the southern guinea savannah. These trials led to the selection of safe and environmentally friendly herbicides

with other agronomic practices that formed the package that was used in setting up the demos in Ogun and other states of Nigeria (Abia, Benue, and Oyo). Results from the other states are also being compiled for analysis.

Prof. Ekeleme said the results from Ogun state was a thing of joy not only to the project team but also to the country at large.

He said the results indicated that the project was achieving one of its major objectives, which is to double the national average yield of cassava, generate wealth, and reduce the burden of weeding in cassava farming systems.

Grown by over 3 million people in Nigeria, cassava is a major staple contributing to food security and wealth of the nation. Although Nigeria is a major producer of the root crop accounting for over 54 million tons per annum, average yield per ha is low with weeds being fingered as a major block.

Researchers say farmers cannot grow cassava more than they can weed—a situation that limits farm size and subject farmers to perpetual penury.

Dr Alfred Dixon, a director with IITA and Project Leader for IITA-CWMP said the project would help Nigeria change the narrative of cassava production.

He called on the government of Nigeria to partner IITA in scaling up the findings of the project to millions of cassava farmers for national development and poverty reduction.

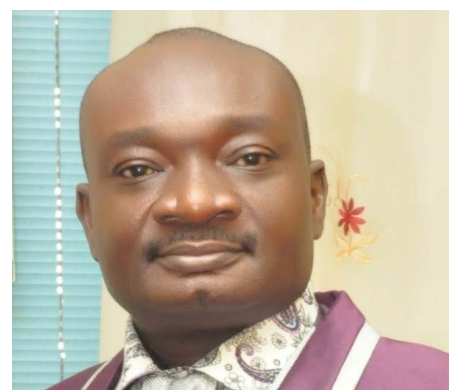
ACAI felicitates with the new Vice Chancellor of FUNAAB, Prof. Salako

The African Cassava Agronomy Initiative (ACAI) has congratulated Prof. Felix Kolawole Salako, leader of ACAI component in parts of South Western Nigeria, on his new appointment as the Vice Chancellor of the Federal University of Agriculture Abeokuta (FUNAAB), Nigeria.

Breaking the news of Prof. Salako's appointment to members of the Project Management Team, Dr. Abdulai Jalloh said the appointment of Prof. Salako reflected his hard work and commitment to excellence.

"This appointment is good especially for ACAI," Dr. Jalloh added.

Prof Salako started working in 1987 as a Consulting Soil Scientist in a private firm at Bodija, Ibadan, Nigeria. He was a Research Associate in the International Institute of Tropical Agriculture between 1989 and 2000. He later joined the Federal University of Agriculture, Abeokuta (FUNAAB) in 2000 as a Senior Lecturer in the Department of Soil Science and Land Management (then called Department of Soil Science and Agricultural Mechanization).



Prof. Salako

Soil sampling laboratory and equipment training for IITA-ACAI partners

The African Cassava Agronomy Initiative, ACAI, conducted a training workshop on Laboratory and Equipment Use in Soil and Plant Sampling, Handling, Storage and Analysis for 16 participants selected from the project's research partners and the national agricultural research systems (NARS) in Nigeria. The participants were PhD and MSc students from the Federal University of Agriculture Abeokuta (FUNAAB), National Root Crops Research Institute (NRCRI), Umudike, and technicians from FUNAAB, NRCRI and IITA.

IITA-ACAI's Senior Systems Agronomist, Dr. Stefan Hauser conducted the three-day event from 19 to 21 September 2017 at IITA Ibadan campus.

The training introduced participants to proper sampling procedures and handling of soil and plant samples. It emphasized the importance of recording sample mass data in the field and correct packaging before analysis. The latter being of importance to avoid contamination of samples, as it would compromise the integrity of data.

The trainees were also introduced to equipment used for plant and soil analysis, especially equipment currently in use in the IITA-ACAI project research and experimental activities.

In his remarks after the training, Dr. Hauser highlighted the need to have technicians and students well trained and equipped to take, handle, store, and prepare samples for analyses, with a keen emphasis on adhering to protocols. He noted that some students



Dr. Hauser (right) discussing the correct harvesting and sampling procedure with NRCRI staff

in the field do not use proper equipment and in some cases equipment used are not calibrated.

A large portion of the training was interactive with practical demonstrations addressing the specific concerns, problems and challenges technicians and students encounter in the field and in laboratories. Several specific problems were addressed with hands-on exercises and data analyses to demonstrate the errors caused by deviating from the protocol procedures.

In a feedback session, participants said their knowledge and skills in soil sampling had been significantly improved, citing the practical sessions as being particularly

effective in helping them understand the processes.

For Akinsumbo Olayinka, an MSc student at FUNAAB, the training session demystified the previously complex soil sampling procedures into a task he can now handle with confidence.

"The field sessions where we actually did what we had discussed about soil sampling and harvesting as well as labelling were to me very useful because it was practical," he said.

The workshop is part of the IITA-ACAI's objective to build the capacity of NARS and partners in relevant skillsets that augment agronomy within host countries.

The ABC of Weed Management in Cassava Production in Nigeria records impressive downloads from the website

A training manual authored by researchers working under the IITA-Cassava Weed Management Project has been well received by farmers with more than 440 farmers downloading the publication from the web in the last one month.

The 29-page document details how weeds can be controlled in cassava using a combination of mechanical, cultural and environmentally friendly herbicides. The publication is a product of four-year work by researchers from IITA, Federal Universities of Agriculture Abeokuta, University of Agriculture Makurdi, and the National Root Crops Research Institute, Umudike.

Dr. Alfred Dixon, Project Leader of the Cassava Weed Management Project said the simple style used in capturing the information in the publication made the manual a choice material for every practicing and would-be farmer.

Godwin Atser, Communication and Knowledge Exchange Expert, who led the publication observed that the aim was to present research findings to the public in simple everyday language that would make farmers to adopt practices and recommendations in weed management.

For farmer Olufemi Yerokun, the publication would go a long way as a standard

reference for weed management in cassava production systems. Yet, farmer El Farouk commended the team for producing the publication, adding that "even an amateur would benefit so much from the clarity and extensive research.

The Executive Director for Dominican Center for Human Resources Development (DCHRD), Fr Fortunatus Okeke noted that with the publication, "the question of the impact of IITA research results on rural and small farmers is enhanced by this master piece."

The DCHRD has downloaded copies of the publication and is using them in training farmers on weed management.

As part of the project's planned dissemination strategy, the IITA-CWMP is sharing the publication electronically including via platforms such as WhatsApp, LinkedIn, and Facebook. A limited quantity is also being printed and shared to farmers during farmers' field days and other farmer meetings.



Copies of The ABC of Weed Management in Cassava Production in Nigeria being shared by Mr John Fakorede of the JDPM, Oyo during a farmers field day in Oyo state

First SAH originated cassava stems harvested in Nigeria



BASICS team in front of SAH originated cassava field shortly before harvest

Researchers working under the Building an Economically Sustainable Integrated Cassava Seed System (BASICS) project have harvested the first ever plots of cassava stems derived from a novel cassava propagation system, the Semi-Autotrophic Hydroponic (SAH). The historic harvest, the first of its kind in cassava, was done on 13 September 2017 from fields in IITA-Ibadan, Nigeria.

The planting material for the production plot originated from virus-free tissue culture plantlets, which was rapidly multiplied through the revolutionary SAH technology.

The SAH-derived cassava plants were

transplanted in fields and the stems were harvested from mature plants after 9 to 10 months of planting in 2017 season. The root and stem yield data is being collected for at least 5 varieties planted in 2016. A part of the field planted with SAH will be ratooned for multiplication and the stem cuttings will be planted in other locations for further multiplication of the planting material.

The study of field data and financial analysis of these pilots will offer more clues about the commercial potential of SAH technology in helping the larger cause of developing a sustainable seed system for cassava in

Nigeria. Based on these learnings, BASICS project aims at appropriately positioning this technology in the seed value chain.

The SAH technology which was developed by SAHTECHNO Ltd., USA, for the production of potato seeds was adapted for cassava propagation by IITA. Currently, three SAH labs are in operation in Nigeria: one each at IITA, National Roots Crops Research Institute (NRCRI) Umudike, and Context Global Development. Establishment of additional SAH laboratories requires an agreement between the new laboratories and SAHTECHNO Ltd.

In the last two decades, IITA and partners developed 46 improved varieties, which have been released in Nigeria, but one of the major bottlenecks in enhancing wider adoption of improved varieties has been the inability to make available enough quantities of breeder seeds to feed through the seed production system. The SAH propagation is expected to overcome this critical shortcoming.

Besides, the National Agricultural Seed Council (NASC), IITA, NRCRI and Fera Science Ltd, UK, are developing appropriate protocols and systems for certification of cassava seeds at breeder, foundation, and commercial classes of seeds.

BASICS is a four-year (2016-2019) project that is funded by the Bill & Melinda Gates Foundation, and is led by the CGIAR Research Program on Roots, Tubers and Bananas (RTB).

At JQRM, Dr Dixon urged partners to redouble efforts

Dr Alfred Dixon, Project Leader for the IITA-CWMP has urged partners and staff working under the project to redouble their efforts and ensure that all the key milestones for the year are met.

Dr Dixon, who is also the IITA Director for Development & Delivery made this appeal at the Joint Quarterly Review Meeting (JQRM) of the project, which was held in Abeokuta Ogun State.

He called for a stronger team spirit among partners and enjoined staff to submit all data already collected for analysis.

The project leader emphasised the need for partners to keep to deadlines and reiterated the commitment of the Project Coordinating Unit to backstop project activities at all times.

The JQRM, which was held on 19 September, provides opportunity for partners to review work done, identify challenges, proffer solutions, and plan for the next quarter.

The September JQRM was followed by a meeting of the Communication Focal Persons who took a deeper dive into the

knowledge sharing activities of the project. The team explored ways on how to get

messages across to farmers using the radio and other innovative methods.



Participants at the Joint Quarterly Review Meeting of IITA-CWMP in Abeokuta, Ogun State, Nigeria

IITA-CWMP farmers' field days attract massive turnout of farmers

The ongoing farmers' field days being conducted by IITA-CWMP have continued to attract massive turnout of farmers across states in Nigeria.

The healthy cassava plants coupled with clean fields have kept thousands of farmers in awe as many keep wondering the science behind the weed control.

In Iwerele Local Government, more than a hundred farmers defied early morning rains to participate in the farmers' field day. Large turnout has also been reported in Abia, Benue, and Ogun state with 2650 farmers reached so far. A target of 10,000 is planned to be reached via farmers' field days for 2017.

Among participants attending the farmers' field days were men and women, youth, religious leaders, and other local leaders at the community level.

During the field days, farmers were given the opportunity to assess the plots and to express their willingness to adopt the technology.

Farmer Mathew Oloye said the field day had brought IITA's research closer to the people.

"Before now, I used to receive your (IITA) journal papers but I later found they were of no use to me. I find more value in what you

are doing in the field now. With this, IITA will make more impact," he said.

The farmers' field days also provide opportunity for researchers to explain the research process to farmers.

Across the different states, the Communication Focal Persons with partners from the state Agricultural Development

programs and nongovernmental organisations—KOLPING in Abia, JDPM Oyo, and JDPM Abeokuta facilitated the organisation and coordination of the field days.

Godwin Atser, Communication & Knowledge Exchange Expert, commended the implementation of the field days.



Farmers during a farmers' field day facilitated by IITA-CWMP and JDPM Oyo

In Burleigh Dodds Series in Agricultural Science, Dr. Hauser and Prof. Ekeleme review weed control in cassava cropping systems

Researchers working with the IITA-CWMP have published a chapter in one of a series of books published by Burleigh Dodds Publishing. The researchers—Dr. Stefan Hauser, IITA Senior Systems Agronomist; and Prof. Friday Ekeleme, Principal Investigator, IITA-CWMP—extensively discussed the effects of weeds on cassava

cropping systems, farmers' perception of the importance of weed control, and the control methods used in different cropping systems. The book chapter focused primarily on weed control in cassava cropping systems in Africa but also drew inferences from other continents such as Asia and Latin America.

The book titled: "Achieving Sustainable

Cultivation of Cassava. Volume 2: Genetics, Breeding, Pests and Diseases" is edited by Clair Hershey, a former scientist with the International Center for Tropical Agriculture (CIAT), Colombia. For a personal copy of the book chapter and further information, please contact: Dr. Stefan Hauser, s.hauser@cgiar.org



Godwin Atser, Communication & Knowledge Exchange Expert, (left) training farmers on the field on best weed control practices in cassava cropping systems

Breaking!!!

1) The Global Cassava Partnerships for the 21st Century (GCP21) will hold its fourth International Cassava Conference

Date: June 11-15, 2018

Venue: Cotonou, Benin

Pre-registration opens on 1st September, 2017

Please check out <http://www.gcp21.org/beninconference/index.html> for all other information

2) ACAI holds Annual Review & Work Planning meeting

Date: 11 – 15 December 2017

Venue: Mwanza, Tanzania

This newsletter is produced by the Cassava Weed Management Project in collaboration with the ACAI and the BASICS projects. **Advisers:** Drs Bernard Vanlauwe, Alfred Dixon, Abdulai Jalloh, Hemant Nitturkar, and Friday Ekeleme.

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