

Newsletter

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Preliminary results show farmers can double cassava yield with improved weed control



A cassava plant yields 34 kg roots at Igbariam field

Preliminary results from experimental plots carried out by researchers working under the International Institute of Tropical Agriculture (IITA) led Cassava Weed Management Project show that by switching to improved weed management practices, Nigerian cassava farmers can double current national average yield of 12-13 tons per hectare.

The current national average yield of cassava puts the yield per stand of cassava plant at 1.2-1.3 kg.

However, recent harvest from trial plots recorded a breakthrough as a single cassava stand at Igbariam in Anambra State produced 34 kilograms roots.

"Elsewhere our preliminary results show that average national yield of 20-39 tons per hectare is achievable if farmers can simply adopt and use improved weed management practices," said Dr Alfred Dixon, Project Leader for the Cassava Weed Management Project.

"The results we are seeing in the field reinforce the fact that weeds are a major factor limiting yield and eliminating them

(weeds) from cassava can help African farmers benefit more from the investments in research," he added.

Researchers estimate that in uncontrolled fields, weeds wreak havoc on cassava pulling down about 80 per cent of cassava yield. Women farmers who bear the brunt of keeping cassava farms weed free in most cases end up with backaches.

Dr Adeyemi Olojede, who is the Coordinator from the National Root Crops Research Institute (NRCRI) Umudike, described the results as "great."

"Nothing special was done to the cassava fields. All we did was to ensure the fields were without weeds," he said.

Though weed control is a major bottleneck to cassava production, it has never gained desired attention as compared to pest and diseases of livestock.

Prof Friday Ekeleme, Principal Investigator, Cassava Weed Management Project observed that weed control in cassava is a major constraint to productivity because

the crop is left for a long time in the field usually 9-12 months before harvest. Farmers therefore have no other choice than to control weeds over this long period of time to keep the farms free of weeds.

"Also the spacing of cassava usually 1 meter by 1 meter leaves enough space for weeds to grow and compete with cassava for nutrients, water and light," he said.

The results of the harvest from the first year experiment have revved up excitement among the Project team members with strong indications that some of the technologies would be transferred to farmers next year.

"These results are promising. Similar experiments are being conducted this year for validity. Definitely we will be in the field next year working with our partners (the Agricultural Development Programs) to extend the knowledge on improved weed management," said Godwin Atser, Communication & Knowledge Exchange Expert for the Cassava Weed Management Project.

Steering Committee Project commends team

The second Annual Steering Committee Meeting of the Cassava Weed Management Project took place at the Conference room of the Weed Science Centre in the International Institute of Tropical Agriculture (IITA), Ibadan on May 4-5, 2015.

The meeting deliberated on several aspects of the Project and commended the Management Team for an excellent job.

Chairman of the Steering Committee, Dr

Julius Okonkwo, specifically lauded the progress made in the last one year and urged the team to sustain the momentum in the years ahead.

The SC while reiterating that the project is laudable and relevant to the Agricultural Transformation Agenda of Nigeria proposed recommendations that would ensure that the Project achieved its milestones in record time. Members of the SC also took opportunity to visit research fields.



Members of the SC on the field

Nigerian engineers make progress towards adaptation of motorized mechanical weeders in cassava farming systems

International and national engineers in Nigeria have made significant progress in the adaptation of motorized mechanical weeders for cassava farming systems in Nigeria.

The team of engineers met 18-22 May 2015 at the International Institute of Tropical Agriculture, Ibadan to brainstorm and modify motorized weeders recently imported by the IITA Cassava Weed Management Project for cassava farming systems.

Specifically, the team was mandated to:

- Evaluate the performance of the machines for general weeding and modify the machine as necessary with special focus on cassava farms.
- Establish performance and suitability of these machines for weeding generally with focus on cassava farms;
- Carry out any needed improvement to make the machines usable for cassava farms; and
- Modify all the available machines for demonstration.

Dr Alfred Dixon, Project Leader for the Cassava Weed Management Project said the motorised mechanical weeders were aimed at providing farmers with a basket of options so they could tackle weeds more efficiently.

He urged the engineers to look beyond adaptation, and conceive the idea of developing African made motorised weeders that could tackle the problem of weeds on the continent.

The one-week meeting was able to modify motorised mechanical weeders with a view to



Team of engineers testing the motorized mechanical weeder

addressing the challenges of frequent clogging and appropriate depth of cutting.

Professor Abdulganiyu Olayinka Raji of the University of Ibadan commended the Cassava Weed Management Project for involving national partners in the program.

He recalled that the Nigerian made Cassava flash dryer which has become a success story today also started with a similar invitation/convocation of experts by IITA.

"I am optimistic we will soon begin the fabrication of motorized mechanical weeders in Nigeria," he said.

Last year, an inception workshop was organized by IITA Cassava Weed

Management Project for engineers for the same purpose. The second meeting this year built on the progress made last year.

Participants were drawn from the IITA, Federal Ministry of Agriculture and Rural Development, University of Ibadan, Federal University of Agriculture Abeokuta, Federal University of Technology Akure, National Center for Agricultural Mechanization, National Root Crops Research Institute, Umudike; Federal Institute of Industrial Research, Oshodi, Edo Agricultural Development Program and Niji Lukas (a private fabrication and agro allied firm).

Training of Trainers on mechanical weeders for cassava farms held at IITA



Training of Trainers on use of motorized weeders

Following the modification of the motorized mechanical weeders, 23 participants drawn from partner organizations participated in a three-day Training of Trainers (ToT) workshop on the use and maintenance of mechanical weeders in cassava farms.

The ToT, which was held 25 – 27 May 2015 at the International Institute of Tropical Agriculture (IITA) Ibadan, was coordinated by the IITA led Cassava Weed Management Project. Other equipment used for the training included manual

weeders acquired from AfricaRice Center.

The ToT will pave the way for extensive testing of the machines on farmers' fields billed to take place later this year across four states in Nigeria.

Engineer Thierno Diallo took both theoretical and practical sessions assisted by Godwin Atser, Communication & Knowledge Exchange Expert for the Cassava Weed Management Project.

Dr Alfred Dixon, Project Leader, Cassava Weed Management Project

commended the progress made in the modification and adaption of the mechanical weeders, noting that the equipment would alleviate the pains associated with manual weeding using hoes and cutlasses.

Participants were drawn from the Federal University of Agriculture Makurdi (UAM), Federal University of Agriculture Abeokuta (FUNAAB) and National Root Crops Research Institute (NRCRI), all of which are partner institutions of the Cassava Weed Management Project.

At the field, participants were given plots to identify and measure weeds before the weeding exercise began. Some of the participants expressed enthusiasm during the training and promised to put to use knowledge gained from the 3-day training.

Mr Osunleti Samuel, a participant from the Federal University of Agriculture Abeokuta (FUNAAB), said it was a great experience for him.

Prof Friday Ekeleme who addressed participants at the closing ceremony urged them to put to use the knowledge gained.

The ToT workshop was funded by IITA Cassava Breeding Unit, IFAD-High Quality Cassava Flour Project, HarvestPlus, Postharvest Utilization Unit headed by Dr Bussie Maziya-Dixon, Cassava Transformation Agenda project, and Cassava Weed Management Project.

AfricaRice shares technology on manual weeders with IITA Cassava Weed Management Project

AfricaRice Center has shared its manual weeders with the International Institute of Tropical Agriculture- led Cassava Weed Management Project. The weeders include Ring Hoe, Cono Weeder and Straight-spike Weeder.

AfricaRice whose farmers face the problem of weeds in rice fields has successfully used these machines in controlling weeds in smallholders' plots.

"The machines are cost effective and environmentally friendly," said Dr Francis Nwilene, Nigeria Country Representative for AfricaRice Center, while handing over the equipment to Dr Alfred Dixon, Project Leader for the Cassava Weed Management Project.

Though AfricaRice use the machines in the control of weeds in rice, the organization hopes that the equipment will also perform well in cassava farming systems.

"This kind of collaboration is good for international centers especially within CGIAR. We do not need to reinvent the wheel," Dr Nwilene added.

Dr Dixon thanked AfricaRice for sharing their expertise with the IITA Cassava Weed Management project.

"From my observation, these weeders are better than the hoe. I can see that women



L-R: Dr Nwilene handing over manual weeders to Dr Dixon in Ibadan

using these machines will need not to bend so much. So we will be saving them from backaches," he remarked.

Already, the IITA Cassava Weed Management Project has incorporated the

manual weeders for extensive testing this year. Their suitability in cassava farming systems will open another vista of opportunity for farmers in weed control, and market for local fabricators.

Cassava weed Management Project team attends GIS training



Cassava Weed Management Team at the GIS training

The Cassava Weed Management Project team joined several other participants to attend the 5-day Geographic Information Systems training course for Agricultural Research in Africa at IITA Ibadan in May.

The aim of the training was to expand participants' knowledge on easy and faster data analysis while making it readily available to various stakeholders and smallholder cassava farmers that are the major targets of the Cassava Weed Management Project.

Speaking during the certificate presentation, Dr Ken Dashiell, IITA Deputy Director General for Partnerships and Capacity Development expressed delight at the encouraging response of some of the participants in the course of the five-day

training.

Course participant, Dr Alfred Dixon said the training was an eye-opener to the possibilities that abound in the use of the GIS tool and promised to continue making use of the tool.

Another participant at the training, Prof Friday Ekeleme said that the training was a welcome development for the project in the area of data management.

The training which was organized by the Capacity Development Office (CDO) was facilitated by Mr Tunrayo Alabi and Michael Haertel (both from the GIS Unit).

GIS has the capacity to transform and combine large amounts of data into a set and it is being used by so many organizations to protect crops, solve crop

issues, and investigate crop damage as well as give farmers an easy way to access information about their crops season by season.

Obituary

Dr Moses Onyilo Egbe, Project Team Leader for Cassava Weed Management Project at the University of Agriculture, Makurdi has passed on.

Dr Egbe died after a brief illness on 20 May 2015, the family said.

The late Egbe was a Systems Agronomist and he obtained his PhD from the University of Agriculture, Makurdi.

He had worked as the Zonal Research Officer, Benue Agricultural and Rural Development Authority, BNARDA, (1986-1991); Subject Matter Specialist, BNARDA (1991-1998); and Zonal Manager, BNARDA (1998-May, 2006).

Dr Egbe's research focus include: Intercropping studies involving legumes, root and tubers; and systems designs and biological nitrogen fixation.

The Cassava Weed Science team extends their sympathy to the family.



Late Dr Egbe

Annual Review & Work Planning meeting has come and gone but memories still linger



Participants at the Annual Review & Work Planning meeting in Ibadan

The 2015 Annual Review and Work Planning Meeting has come and gone but the memories of the event still linger as researchers are deeply engaged in meeting up with commitments made at the meeting. For farmers, the meeting provided an opportunity for better understanding of the contribution of research to agriculture. Farmers were also privileged to share their concerns with researchers and extension staff. “We are excited to be part of this meeting. It helps us to understand what researchers are doing to address the problem of weeds in cassava farms,” said Mrs Mobolanle Olufunwa who represented the Nigerian Cassava Growers Association. She commended the IITA Cassava Weed Management Project for addressing the problem of weeds in cassava in a holistic

approach using best practices. The Annual Review & Work Planning meeting held 29-30 April 2015 provided opportunity for researchers, policymakers and farmers working under the Cassava Weed Management Project to review achievements made by the project in 2014, and to plan for 2015. The meeting which had eleven presentations covering the activities of the project in 2014, provided a platform for stakeholders to compare notes and share lessons learnt. Declaring the meeting open, Deputy Director General (Partnerships & Capacity Development), IITA, Dr Kenton Dashiell commended the project for its excellent implementation, and encouraged partners to sustain the momentum and work together for the task ahead. Earlier, Dr Alfred Dixon, Project Leader of

the Cassava Weed Management Project, in his remarks noted that the importance of the meeting could not be overemphasized because of several reasons cutting across crop losses, low yield and the negative health impact of weeds on farm families.

He said, “As we speak, there is high probability that a child between the age 5 and 14 years old is withdrawn from school to assist in weeding a cassava farm. If this is not happening, I can bet that many women are weeding cassava fields under duress. Because of prolong bending to carryout hand weeding with hoes and cutlasses, most of these women end up having back aches. Also as we speak, several cassava farms are being abandoned because of weeds.” He called on the team to redouble efforts to help solve the menace of weeds in Africa. For activities marked for 2015, participants at the meeting broke into four groups: Agronomy, Communication & Knowledge Exchange, Mechanical, and Herbicides Screening. The four groups developed work plans which were carefully reviewed during plenary sessions and adopted.

The meeting had 64 participants in attendance drawn from IITA, National Root Crops Research Institute (NRCRI), Federal University of Agriculture Abeokuta (FUNAAB), University of Agriculture Makurdi (UAM), Bill & Melinda Gates Foundation, chemical companies (Bayer Crop Science, Syngenta), Federal Ministry of Agriculture and Rural Development (FMARD), regulators – Standards Organization of Nigeria (SON), National Environmental Standards Regulatory Enforcement Agency (NESREA), National Agency for Food and Drug Administration and Control (NAFDAC), Nigerian Cassava Growers Association, Agricultural Development Programs (ADPs), and the private sector.



Lawrence Kent speaks at the Annual Review & Work Planning Meeting



Dr Dashiell

IITA Cassava Weed Management Project Leader cited in The Economist

The Project Leader for the Cassava Weed Management Project, Dr Alfred Dixon has been featured in The Economist—A United Kingdom highly respected magazine.

In an encounter with the magazine, Dr Dixon popularly known as “Dr Cassava” shared results from research farms on-station. His views were expressed in the article titled: “After Oil”. The article highlighted the importance of agriculture in the midst of falling oil prices for a country like Nigeria, and the efforts by IITA and Nestle in sourcing raw materials locally. Read article on this link: [http://](http://www.economist.com/news/special-report/21654361-oil-shock-has-left-deep-hole-governments-finances-economy)

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Dr Dixon popularly called “Dr Cassava”

Cassava Weed Management Project Partners

