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CRIN Collaborates With FMARD On Skill Acquisition And Grafting Technology



“Our gates are continually opened for collaborations towards the empowerment of various stakeholders and the nation building.” These were the words of the Executive Director, Cocoa Research Institute of Nigeria (ED CRIN), Dr. Patrick Adebola, as he declared open the training workshop on skill acquisition for cocoa farmers and other stakeholders on best management practices and knowledge transfer on grafting for cocoa farmers organized by the Federal Ministry of Agriculture and Rural Development (FMARD) in collaboration with CRIN held on 24 – 26 February, 2021 at CRIN Headquarters, Ibadan. The ED CRIN appreciated the FMARD for collaborating with CRIN and encouraged the participants to avail themselves of the knowledge acquired during the training workshop to improve their cocoa productions and quality.

Knowledge Transfer: A Key to Sustainable Cocoa Production In Nigeria



In his keynote address, at the knowledge transfer on grafting technology and skills acquisition on cocoa drying platforms for cocoa farmers, processors, aggregators and marketers held on 24 – 26 February, 2021 at CRIN, the Permanent Secretary, Federal Ministry of Agriculture and Rural Development (FMARD), Mr Ernest Afolabi Umakhihe, ably represented by the FMARD Oyo State Director, Mr. Joseph Adeniyi, opined that the knowledge transfer is in line with the present administration’s policy on Diversification of Nigeria’s Economy to non-oil in which agriculture is playing an important role. The FMARD is focused on ensuring that cocoa farmers are trained and retrained so as to improve the current declining status of cocoa production and restore Nigeria as a major power player in the world cocoa industry. The skills acquired will enable farmers, processors, aggregators and marketers improve on their knowledge and enable them have quality products along the Value Chain.



FMARD Will Support Cocoa Farmers With Inputs' Distribution And Capacity Building



The Director, Federal Department of Agriculture, Mrs. Karima Babangida, in her welcome address at the training held at CRIN, ably represented by the Desk Officer, Cocoa Value Chain of the FMARD, Mr. Olutobaba Ajayi, revealed that FMARD is eager to support the farmers by distribution of inputs and also carry out trainings to enhance the capacity of farmers. She noted that Cocoa has been one of the major foreign exchange earners in Nigeria apart from Crude Oil. However, due to the declining price of Crude Oil as a result of COVID-19 pandemic, Cocoa is one of the commodities being promoted by the present Administration in its drive to diversify the economy. The Ministry will continue to support farmers with early bearing seedlings and cocoa pods with disease resistance to ensure replacement of old cocoa trees and guarantee the return of Nigeria as a major cocoa producer in the world. The Agricultural Policy put in place by the present Government is poised to build an agribusiness ecosystem that will solve the challenges in agricultural sector with the partnership of FMARD, CRIN, Cocoa Association of Nigeria (CAN), Cocoa Farmers Association of Nigeria (CFAN) and other relevant stakeholders.



The participants being trained on collapsible cocoa drying platform



Practical demonstrations on cocoa grafting technology



Certificate presentation by CRIN Director of Training, Dr. S.O. Agbeniyi, to one of the participants



Group photograph of the participants



CRIN Partners With NEPC On Value Addition



The news on Cashew, which is being harvested this season, will be incomplete without the mention of Cashew being processed into Juice at Yaku Village in Ogbomoso, Oyo State. Over the years, farmers are only interested in the sale of raw cashew nuts while the cashew apples rot away. To forestall this scenario, the Nigerian Export Promotion Council (NEPC), Ibadan Export Assistance Office, in collaboration with Cocoa Research Institute of Nigeria (CRIN) with research mandate for cashew, organized an on-the-spot capacity building on processing cashew apple into juice for Cashew Farmers/Processors in Oyo State on 8 March, 2021. The participatory training was facilitated by CRIN and Health Wise Resources Limited, a packaging and labelling company, which as well provide support for other startup businesses. There were demonstrations of the different Cashew value chain processes, requirements for labelling and packaging, how to obtain NAFDAC, Barcode and NEPC registration. The 70 participants from Ogbomoso, Saki, Kisi and some other Cashew producing Local Government Areas (LGAs) in Oyo State were encouraged to go into mass processing of Cashew apple into juice for sale at affordable prices all over Nigeria and for export.



Demonstration by CRIN facilitator, Dr. C.O. Jayeola



Hands-on training of the participants



Participants in action: processing cashew apples into juice



'Seedlings, production techs impeding Nigeria's cocoa industry'

- Association calls for coordinating body
- Expert advises cocoa states to mobilise youths, forests for production

By Femi Ibirogbá, Head, Agro-Economy, The Guardian, 15 March 2021



Apart from neglect of agricultural infrastructure by the government, non-availability of improved high-yielding cocoa seedlings, scarcity of other inputs such as agro-chemicals, old production technologies and climate change have been identified as impediments to increasing cocoa productivity in the country. Production of cocoa beans was around 300,000 metric tonnes in 2013/2014, but reduced to about 245,000 metric tonnes in the 2019/2020 session.

However, in the 2019/2020 cocoa season, the Ghana Cocoa Board (COCOBOD) aggregated 742,725 tonnes as of June 4, according to International Cocoa Organisation (ICCO). And, Côte d'Ivoire, as of August 3, 2020, aggregated 2.043 million tonnes.

With 2.043 million tonnes of cocoa, Côte d'Ivoire produces about eight times of what Nigeria currently produces, while Ghana, with 742,725 tonnes, produces three times the Nigeria's cocoa output yearly.

Analysing the sector, stakeholders have X-rayed the challenges and suggested ways to maximise the economy of cash crops, especially, cocoa bean production and value chain.

Dr. Patrick Adebola, Executive Director, the Cocoa Research Institute of Nigeria (CRIN), Ibadan, Oyo State, said most of the cocoa trees in Nigeria had

been existing for about 40 to 60 years or more. He explained that those plantations had declined in productivity and therefore, there was a need for new ones or thorough rehabilitation of old plantations.

President of the Cocoa Farmers Association of Nigeria (CFAN), Mr Adeola Adegoke, said that the challenges in the cocoa industries were many, and concerted efforts and investments were needed to overcome them.

Various administrations in the cocoa-producing states had done little or nothing to assist farmers in the rehabilitation of old plantations, or in opening up land for younger generations of farmers to gradually expand hectares of cocoa land and replace the older farmers.

And, Nigeria, he added, is the only cocoa-producing country that has no coordinating board, and where different stakeholders go in different directions.

Adegoke argued that cocoa production had suffered neglect for over 50 years, and advocated strategic cocoa policies, management and support.

Pension scheme, rebate and other organised and government-enabled benefits for cocoa farmers are emplaced in Ghana, Cote d'Ivoire, Brazil and Cuba, but Nigerian cocoa farmers have not been socially, economically or structurally enabled to rev up production.

Climate change, he added, had aggravated the situation, as about 70 per cent of improved seedlings did die in the first three years of planting due to harsh climatic condition following global warming, at the point when they should significantly add to yearly production,

Fire disasters too, as recently recorded in two local government areas of Ekiti State, have wreaked destruction on cocoa plantations, while irrigation facilities are zero for cocoa farming.

Dr. Adebola, the CRIN boss, buttressed Adegoke's point on empowering youths with land, training and planting materials, saying: "There is the issue of the quality of planting materials.



Generally, farmers tend to harvest from their farms and produce seedlings themselves so that they can plant and they may not be able to get the maximum yields.”

“The Cocoa Research Institute of Nigeria (CRIN) implores farmers to come for improved planting materials that are high-yielding and will produce fruits early in about two years.”

He added that technologies had emerged for mass-propagation of genetically improved materials. Of the propagation technologies, he listed manual, using seeds to propagate those seedlings (which had delayed progress so far), and other technologies such as semi-autotrophic hydroponics (SAH).

“The SAH process is easy,” he said, “having the substrates and parts of the planting materials, a part of the leaf or stem, which will be propagated using a special medium. We root and harden them and make them available for farmers. Seedlings can be produced in millions using the hydroponic technology.

“We are trying to see how this can be introduced to cocoa, although we have attempted that in an experimental trial,” he said. He advised cocoa-producing state governments to mobilise youths into groups, provide them with land, and inputs, while partnering with CRIN to provide technical know-hows for planting, maintenance, harvesting and marketing.

Meanwhile, Special Adviser to the Cross River State Governor Ben Ayade on Cocoa Development and Control, Dr Oscar Ofuka, has noted that cocoa is the major source of revenue generation in the state, trailing federal allocations from oil proceeds.

Ofuka disclosed this while addressing journalists during the Award and Magazine launch organised in commemoration of this year’s International Women’s Day, in Abuja, recently.

Cocoa had been completely forgotten in the state, he said, but during the administration of Governor Ben Ayade from 2015, Cross River State cocoa sector alone has offered employment opportunities to youths.

Listing some of the challenges, a former Provost of the Federal College of Agriculture, Kabba, Kogi State, Dr Akin Oloniruha, identified challenges in the cash crop production, especially cocoa, as negative climate change, unstable price, use of globally banned chemicals, pollination challenges, bush burning and plantation destruction, as well as adulteration of improved cocoa seedlings in circulation.

Climate change, he argued, had led to scanty rainfalls, elongated dry season, frequent dry spells, flooding, abnormal relative humidity and higher temperature fluctuations. All the effects of climate change have negative impacts on cash crops such as cocoa, palm oil, cashew and rubber.

Unstable prices of cash crop in the international markets have also affected morale, as lower prices and discrimination against certain producers have discouraged farmers, investors and aggregators from investing in dynamics that could boost production. Bush burning had also affected thousands of hectares of cocoa and cashew plantations, Oloniruha said.

Excessive dry season, hunting activities, activities of herders setting farms ablaze, and heat-induced fire disasters have compounded woes of cocoa production as productivity is hampered.

He also identified adulteration of improved cocoa seedlings as a barrier. Though the Cocoa Research Institute of Nigeria (CRIN) had developed early-maturing and high-yielding varieties of cocoa and cashew, multiplication and distribution of the varieties to farmers have remained difficult.

Unauthorised individuals have been reproducing old varieties and selling such to farmers as new, which further places limitation on productivity after two or more years of plantation rehabilitation and farm expansion.

Chemicals used by most farmers also kill cocoa pollinators, and hence limiting the number of pods per tree. The number of pods per tree of cocoa determines tonnage per hectare, hence, the more the pods, the higher the yield per hectare of cocoa.



Going forward, the former provost recommended that Nigeria should step up value addition by processing cocoa beans into chocolate products such as drinks, beverages and bars. Exporting such products, he added, would mean more foreign exchange and impetus for more investments in cocoa cultivation, production, and processing.

He also suggested licensing nursery operators by the government to produce seedlings from improved varieties that have been developed by CRIN. Higher productivity per hectare could be achieved if improved seedlings are planted on existing plantations or used for new ones. The same should be done for cashew, palm oil, and other economically viable cash crops so that farmers could have access to improved planting materials.

Other recommendations he included are advocating farm protection techniques against fire disasters, facilitating and using recommended chemicals so that Nigeria's cocoa beans would be acceptable with premium prices in the international markets, engaging younger farmers in cash crop production and deliberate government policies and support for the cocoa and cashew sector operators.

<https://guardian.ng/features/agro-care/seedlings-production-techs-impeding-nigerias-cocoa-industry/>

Efficiency And Performance Improvement Workshop For The Institute's CAFOs



A workshop on Efficiency and Performance Improvement was organised for forty (40) Chief Agricultural Field Officers (CAFOs) in the Institute from 4 - 5 March, 2021 at the Macpherson University, Ajebo, Ogun State. The training modules includes: Efficiency and Performance Improvement techniques, Effective Communication

Skill, Time Management and Personal Effectiveness, Attitudinal Transformation, Motivation and Productivity, Personal Finance Management Tips for Middle Income Earners and Healthy Living for Longevity and Career Success. The training workshop achieved the objectives of helping participants to recognize and eliminate obstructive career misconceptions, offered practical techniques, tools and strategies for overcoming the hindrances to personal effectiveness and career excellence. Also, their skills were enhanced to help them identify time wasters and manage their time better for productive outcomes. They also learnt how to maximize their strengths and develop their weaknesses while building strong alliances with colleagues to help them gain better results. The CAFOs were elated and appreciated the ED, Dr. Patrick Adebola, and the CRIN Management for the workshop, which was the first of its kind in the history of CRIN for this cadre of staff. The CAFOs that attended the workshop includes: Ejakpovi Felix, Onipe Abiodun, Atanda Tairu, Adeleke Olaoye Abiodun, Onwudi Mary, Salami Mufutau, Omogbehin Ayo, Lukman Fausat O., Fowosere Elizabeth F., Okere Florence F., Makinde Bunmi, Olaoye Atinuke, Nwaokolo Ruth, Akinlere Oluwakemi A., Ojo Omolabake E., Garba Idris Audu, Adetunji Esther O., Aribido Mary, Adetunji Titus A., Akinyomide Oriola A., Ilori Oluwole, Oladoja Olaolu, Makinde Kehinde O., Adepoju Oluranti K., Adeyemi Omoladun R., Emaku Mary, Alalade Olukemi Laifat, Adewunmi Abigail, Anikudi Fausat, Akele Oni, Oyintade Folake, Olaleye Oluseye, Adepoju Sola Muslim, Boi Benedict Agbe, Idowu Babatunde O., Gbadamosi Mufutau A., Afolabi Oyawale Gbeminiyi, Olawore Abosede Elizabeth, Jayeade Abass and Akinola Abiola Ann.



Group photograph of the participants





Certificate presentation by the facilitator to one of the participants

Staff of the Month: Mr. Julius Oyeneye



Mr. Julius Oyeneye is an Agricultural Field Assistant (AFA I) presently working in Zone 3 & 4 of CRIN Plantation. He is a punctual and hardworking person as attested to by the Plantation

Manager, Mrs. M. A. Akande. Mr. Oyeneye finished from All Saints Primary School, Otere Ikereku, Abeokuta, Ogun State in 1970. He also attended Egba-Odeda Grammar School in 1971/72, but couldn't finish due to higher fees of boarding school at that time. He started as a casual worker in 2001 and got staffed in 2009. His work schedule involves bush clearing, planting and harvesting of CRIN mandate crops like Cocoa, Cashew, Kola, Coffee and Tea. Mr. Oyeneye advised the management to engage more workforce to continue taking extra care of the mandate crops, like irrigation, weeding and pesticide applications against pests and diseases, to ensure good establishment, as they have been doing. He thanked the management for the supply of working tools in times past, but also urge the new management to make available new working implements like cutlasses, files, head

pans, ladders, hooks, wheelbarrows etc. He wished the ED a successful tenure in office.

PhD Defense: Dr. Bunmi O. Olorundare



Congratulations to Dr. B. O. Olorundare for successfully defending her PhD thesis on "Molecular Basis for the Observed Mechanistic Switching of Diphenyl Diselenide from

its Classical Glutathione Peroxidase Mimicry *in-vivo*" at the Federal University of Technology, Akure (FUTA) on February 9, 2021. In her submission, she noted that the paradox of life is such that oxygen which is important for living is inherently dangerous to human existence. This deleterious potential of oxygen is attributed to the induction of free radical-linked oxidative stress related diseases. Consequently, the search for more potent antioxidants reveals the fact that selenium-containing molecules are better nucleophiles than classical antioxidants thus leading to synthesis of organoselenium compounds especially diphenyl diselenide (DPDSe), a potent antioxidant. Overtime, the antioxidant mechanism of DPDSe has been fundamentally linked to its glutathione peroxidase-like activity *in vitro*. However, this thiol- dependent *in vitro* antioxidant mechanism of DPDSe was observed to be in sharp contrast with its thiol-independent antioxidant mechanism *in vivo*. Thus, the molecular dynamics underlying the disparity in *in vitro* and *in vivo* antioxidant mechanisms of DPDSe has remained unexplained and that serves as the impetus for her present study. Dr. Olorundare's results markedly revealed that thiol availability is key to the antioxidant property of DPDSe either in chemical model or simple biological model *in vitro*. However, the observed antioxidant activity of DPDSe *in vivo* was characterized by elevated level of



thiols rather than the observed depleted level of thiols *in vitro*. At the molecular level, the expression of the genes of enzymes [glutamate-cysteine ligase catalytic (GCLC), glutamate-cysteine ligase modifier (GCLM) and glutathione synthetase (GS)] involved in the biosynthesis of GSH were significantly increased by DPDS_e. Logically, this could be a reason for the increased level of thiols accompanying the antioxidant action of the selenium-containing compound *in vivo*. Apparently, the elevated level of GSH will enhance antioxidant status of organism by triggering increased activities of GSH-dependent antioxidant enzymes thereby relieving oxidant-imposed diseases in such animals. Dr. Olorundare is a CRIN Research Officer 1 (RO1)

PhD Defense: Dr. Idrisu Mohammed



Congratulations to Dr. Idrisu Mohammed for successfully defending his PhD thesis on "Effects of Weeding Regime on Seedling Growth Performance of Three Cocoa (*Theobroma cacao* L.) Varieties in Two Contrasting Ecologies

of Nigeria" at the Federal University of Technology, Akure (FUTA) on February 24, 2021. Dr. Mohammed reported from his thesis that *Chromolaena odorata*, *Desmodium scorpiurus*, *Pouzolzia guineensis*, *Cyathula prostrata*, *Oplismenus burmanii* and *Commelina diffusa* were the most prevalent weeds across the cocoa varieties and locations. Cocoa hybrids Tc-1 and Tc-2 severely suppressed weed flora diversity at Ibadan and Owena compared to F₃ Amazon. Also, Tc-1 and Tc-2 produced more vigorous seedlings than F₃ Amazon, despite higher weed density and weed covers. Plots unweeded for initial 1 month after transplanting (UW1) and thereafter weeded for 4 months (WA4) were most efficient in weed suppressions, thus resulting in better seedlings' growth than other weeding regimes. He recommended UW1 + WA4 as the most effective weeding regime for cocoa seedlings establishment,

especially for Tc-2 at both Owena and Ibadan. Dr. Mohammed is a CRIN Principal Research Officer (PRO).

Staff Retirement: Mrs. E.O. Adewumi Bows Out From CRIN After A Meritorious Service

Mrs. Esther Oluwawemimo Adewumi was born on 10 March, 1961.



She joined the service of CRIN in 1987. On her assumption of duty, she was posted to Library division as Library Attendant. She was promoted to Library Assistant in 1995, Library

Technician in training in 2000 and Library Technician in 2002. She did inter-cadre transfer to Library Officer in 2008, after obtaining diploma in library study from the Federal Polytechnic Offa, Kwara State. She became Higher Library Officer in 2011 as well as Senior Library Officer in 2014. She was promoted to the grade of Principal Library Officer in 2017 and finally Assistant Chief Library Officer in 2020. She left the service of CRIN on 10 March, 2021 at mandatory age of 60. We wish her a blissful retirement.

April Birthday Galore

Hearty birthday celebrations to the staff members that will be celebrating their birthdays this month. Wishing you all the very best in your life endeavours. Congratulations!



Emmanuel Tolulope Angela	01-Apr	Idowu Omoleke	20-Apr
Gbalajobi Kehinde	01-Apr	Iruobe Elizebeth	20-Apr
Olabiyi Bosede Mojisola	01-Apr	Oni Nike	20-Apr
Adesoji Ronke	02-Apr	Agboola Lydia Ololade	21-Apr
Bakare Adeyemi	02-Apr	Fadahunsi Fatai Salami	22-Apr
Patrick Caroline	02-Apr	Imade Charles Osa	22-Apr
Fawusi Oluwatobi Amoo	03-Apr	Ojewale Oluwafemi Ezekiel	22-Apr
Rabiu Akeem Adekunle	03-Apr	Oyelowo Bankole Gbenga	22-Apr
Ariyibi Esther Olayemi	04-Apr	Adedire Roseline Adekemi	24-Apr
Bakare Mary Abike	04-Apr	Ademola Sunday	24-Apr
Farinola Patrick Adekunle	04-Apr	Lawal Kafayat	24-Apr
Obi Esther Ogom	04-Apr	Nweke Paul Chukwu	24-Apr
Osasona Abiodun Saliu	04-Apr	Onifade Ayuba Olatunde	24-Apr
Duruaku Ogochukwu Maureen	06-Apr	Samuel Ladi Esther	24-Apr
Gimba David Augustine	06-Apr	Babalola Remi	25-Apr
Ishola Ropo	07-Apr	Oyawale Muniru Babatunde	25-Apr
Ismaila Tajudeen	07-Apr	Babatunde Adeyinka Sherifat	26-Apr
Ajinisi Mary Oluwaponmile	08-Apr	Dahiru Adamu Tanko	26-Apr
Isaac Emmanuel	08-Apr	Dare Ayo Omokore	26-Apr
Abdulrazak Monsurat	09-Apr	Edeh Tochukwu	26-Apr
Adebayo Olusola	09-Apr	Onyemachi Oyinyechi Fidelia	26-Apr
Isong Ekama Blessing	09-Apr	Akinrelere Oluwakemi Abosedo	27-Apr
Okontah Kehinde	09-Apr	Ifidon Ikhusho	27-Apr
Agbongiarhuoyi Eghe Anthony	10-Apr	Agbebaku Halima Caroline	28-Apr
Akinsola Kabir	10-Apr	Matthews Dare Feyisayo	28-Apr
Olawole Florence Olufunmilola	10-Apr	Wakaps Francis John	28-Apr
Onifade Adebisi	10-Apr	Oyinlade Folake Banke	28-Apr
Akinola Wasiu	11-Apr	Ikokoh Loveth Ufuoma	29-Apr
Ehidiamen Joseph	11-Apr	Amosu Sunday	29-Apr
Alawode Suleman Adewale	12-Apr	Salami Kamoru	29-Apr
Oyekunle Emmanuel	13-Apr	Ola Olanike	30-Apr
Adewoye Gabriel Adebowale	14-Apr	Sekoni Olaide Sakirat	30-Apr
Lawal Dorcas Oyinyechi	15-Apr		
Okpanachi Nda	15-Apr		
Abdullahi Olasunkanmi	17-Apr		
Anijese Funmilayo	17-Apr		
Huseini Usman Dang	17-Apr		
Olorungbami Nike	17-Apr		
Adeyanju Kehinde Hussain	18-Apr		
Ibitoye Folake	18-Apr		
Ogunde Oluwatosin Ajoke	18-Apr		
Ojo Olawale	19-Apr		
Ologunwa Tope C.	19-Apr		
Adeyemo Samuel Ayofe	20-Apr		
Ajewole Bamidele	20-Apr		
Akinyode Olubisi Emily	20-Apr		
Aransi Ramoni	20-Apr		

