



CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.

ISSUE: 27 (May, 2023)

Hearty Felicitation with Muslim Faithful



The Executive Director and Chief Executive Officer of the Cocoa Research Institute of Nigeria (CRIN) has felicitated with Muslim faithfuls and other Nigerians on the occasion of Eid

al-Fitri celebration. Dr Patrick Adebola urged all Muslims to reflect the gains of Ramadan in their lives. The message read in part; "On behalf of Management and Staff of Cocoa Research Institute of Nigeria (CRIN), I heartily felicitate with the Muslim faithfuls on the successful completion of Ramadan Fast. I earnestly pray that the gains of the great spiritual exercise shall remain very visible in our individual and collective conducts. As we celebrate this season of renewal, let us continue to pray and work for togetherness of the country. We are stronger together. Best wishes from CRIN family. Eid Mubarak".

Plant Regeneration through Tissue Culture Techniques in CRIN Lab

This is based on the principle of totipotency; plantlet is generated from any part of the plant so far its undergoing meristematic process. Plant regeneration can be achieved by culturing explants to form organs (organogenesis), or by developing plant embryos. Explants are sourced from root, stem, leaf, flower and seeds. In CRIN biotechnology laboratory, research trials are being conducted on these explants for cocoa, cashew, tea, kola and coffee to develop a

best tissue culturing technology. Recently, with combined research efforts of Prof. Esan and Dr. Anna Muyiwa, the laboratory has succeeded in generating embryo and plantlets despite enormous challenges. These were gotten through embryogenesis and organogenesis.



Cocoa Plantlet



Tea Plantlet





CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.



Coffee Plantlet

Visit of the NRCRI Team to CRIN Mambilla Substation on the Potato CFT Project Site Inspection Tour

There was an official request by the National Root Crops Research Institute (NRCRI), Umudike, Abia State to establish a 'Confined Field Trial (CFT) of Biotech Potato' at CRIN Mambilla Substation, Taraba State. On behalf of the Executive Director (ED), NRCRI, the request was presented by Dr. Charles Amadi, the Principal Investigator of the project, and was received by the ED CRIN on 6th of February, 2023. The ED conveyed approval to this effect via the Director (Production and Substations), who also did the same via the Head of Station (HoS), CRIN Mambilla Substation. Among other things, the NRCRI requested for 0.3hectare plot within CRIN Mambilla Substation for the CFT which is intended to be set up in July 2023. This site has been provided by CRIN at the desired location. Being a Biotech plant material (being tested for the 'late blight' disease of potato), the experiment is being conducted with the supervision of the National Biosafety Management Agency (NBMA).

Sequel to the above, a team composed of NRCRI and NBMA officials visited the CRIN Mambilla Substation on Saturday, 22nd April, 2023 to confirm the suitability of the site provided by CRIN for the proposed CFT trial. They were introduced by the substation staff to the site provided for the proposed experiment. The NRCRI scientist confirmed the suitability of the site and land. The NBMA official also agreed with the suitability of the location, particularly as regards the biosafety issues bothering the handling of the plant material in question, given the eventual establishment of the CFT at the location.



The team in the field during inspection of chosen site.

From left to right: Mr. Kahya S. Shuaibu (The NRCRI Team Leader), Dr. O.O. Adenuga (The HoS, CRIN Mambilla Substation), Mr. Abisabo Adamu (National Biosafety Management Agency official), and Mr. F.N. Chila (Chief Agricultural Superintendent, CRIN Mambilla Substation)





CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.

FG to generate \$500m from cashew export in 2023



The Nigerian Export Promotion Council (NEPC) has planned to double the amount

of revenue generated from cashew exports in 2023 to \$500 million. Dr. Ezra Yakusak, Executive Director and Chief Executive Officer of NEPC made this known at the inauguration of the organic cashew certification programme for export. Yakusak said the programme is a five-year initiative between NEPC, Nicert Limited, Valency Limited, and PRO-Cashew, designed to accelerate growth in the non-oil export sector. The initiative, he said, would facilitate a gradual shift from conventional cashew to organic ones which guarantees a niche market and premium pricing. According to Yakusak, the aim of the project is to support the Nigeria cashew sector and increase productivity and efficiency, improve crop quality, harvest and post-harvest techniques in the industry. Emphasising the need for value-addition, he said Nigeria exported 315,677 metric tonnes of raw cashew nuts worth \$252 million, which accounts for 5.24 percent of the country's non-oil export portfolio in 2022.

The NEPC boss added that the federal government is committed to increasing cashew export revenue to \$500 million. "In 2022, our non-oil export performance indicated that cashew was the fifth leading non-oil exportable product in Nigeria," Yakusak said. "We felt that we need to encourage this product and ensure that the potential from cashew is better harnessed. "We exported cashew worth about \$252 million in 2022 and with the launch of the project, we hope to double it this year."

Yakusak, however, raised concerns that the full economic potential inherent in cashew export have not been harnessed, despite the product being the fifth leading non-oil exportable product in Nigeria in 2022. He expressed belief that the initiative would address issues plaguing the Nigeria cashew sector. According to him, "Nigeria's cashew export trade was largely hampered by non-adherence to food safety standards, lack of traceability, low yield per hectare, poor practices, and aging trees, among others," he added.

On her part, Annabel Kamuche, Group Managing Director, Nicert, a private organisation providing international certification for export products, said Nigeria could reduce reliance on harmful and toxic chemicals by choosing organic farming methods. Kamuche said the nation could also promote soil health, while creating a healthier and more resilient food system. "As we continue to face challenges related to climate change and environmental degradation, we must adopt sustainable practices that minimise harm to the planet and support local communities," she said. "It is a thing of pride for Nigeria that it has started making a mark in the usage of organic products where, apart from cashew, crops like turmeric, honey, sesame, soybean, and hibiscus are gaining substantial grounds. "Nicert is confident that in the coming years, Nigeria will be among the front runners in the global organic sector with more value chains participating in organic agriculture", she concluded. (Culled from: <https://www.thecable.ng/nepc-fg-to-generate-500m-from-cashew-export-in-2023>)



ARC News

Aptitude Test for the Appointment of Substantive Executive Directors

Recently, the Executive Secretary of Agricultural Research Council of Nigeria (ARC), Prof. Garba Hamidu Sharubutu mni, with the approval of the Honourable Minister, Federal Ministry of Agriculture and Rural Development (FMARD), Dr. Mohammad Mahmood Abubakar, conducted Aptitude Test for the appointment of substantive Executive Directors for the National Centre for Agricultural Mechanization (NCAM) and Nigerian Stored Products Research Institute (NSPRI) both in Ilorin. The exercise culminated in the marking of the scripts on the 27th March, 2023 by a team of very senior officers ably led by Mr. Nuhu Yusuf, Director, Knowledge Management and Communication and under the strict observance of the representative of the Hon. Minister of FMARD, Mr Raymond.



The exercise in progress

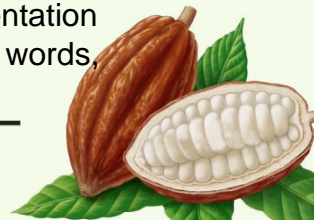
Courtesy visit by FASA

The Fish Feed for Resilient Aquatic Food System in Africa (FASA) paid courtesy visit to the Council in March 13, 2023. The team was led by Dr. Rodrigue Yossa, who is the Lead Scientist and Manager of Development and Scaling of FASA Project. He came on a courtesy visit all the way from the WorldFish Headquarters in Malaysia to assess the implementing institutions and their readiness for the project. FASA Project is funded by Norwegian Agency for Development Cooperation, coordinated by WorldFish and it is being implemented in 3 African Countries namely: Kenya, Nigeria, and Zambia. According to Mr. Yossa, the objective is to develop quality, highly nutritious and inexpensive fish feed using sustainable, novel, local ingredients and to help a minimum of 5000 farmers to test and adopt the feeds and ingredients for improved income, increased food security and reduced waste and pollution.

According to the Head, Department of Fisheries in ARC, Dr. Charity Obetta, the Council is leading the implementation of the project in Nigeria. In her words,



Collation of Scripts





CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.

"we are working with NIOMR, NIFFR, Fish Feed millers, fish farmer groups to achieve the objective". In his brief welcome remarks, the ES, Prof. Garba Hamidu Sharubutu mni, expressed deep satisfaction for the nobility of such project and further expressed appreciation for considering Nigeria worthy of siting it which is to be anchored by the ARCN.



ES, ARCN (left) with FASSA Delegation

Appointment of New Directors/CEOs

As what can be termed to be the climax of the recruitment exercise which commenced a few months ago, through a rigorous and thorough process, the Honourable Minister of Agriculture and Rural Development, Dr. Mohammad Mahmood Abubakar, graciously approved the appointment of the following with immediate effect: Prof. Lateef Sanni - ED NSPRI and Dr. Kamal Abdulgafar Rasheed - ED NCAM. On behalf of the Management and Staff of the Council, the ES, Prof. Garba Hamidu Sharubutu mni, expressed his sincere congratulations to the new appointees.



Prof. Sanni (left) receiving his letter of appointment from the ES



Dr. Rasheed (left) receiving his letter of appointment from the ES





CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.

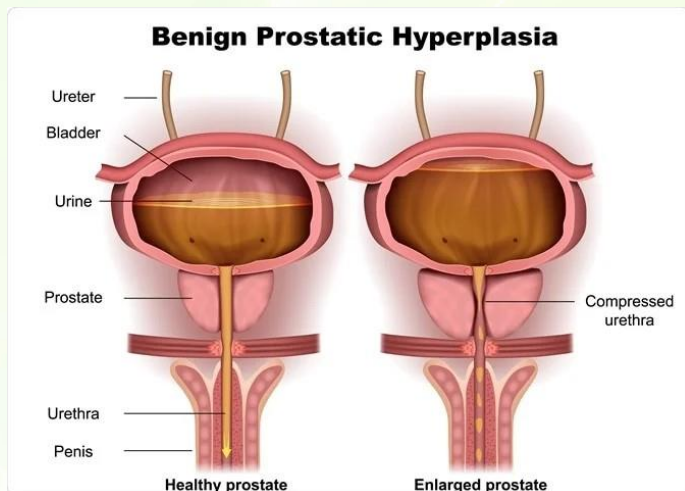
HEALTH NEWS

Prostate Enlargement – Mrs. Bosede Famaye



A man's prostate gland usually starts to enlarge after he reaches 40 years of age. This condition is called Benign Prostatic Hyperplasia (BPH). The condition has also been referred to as Benign

Prostatic Hypertrophy. The prostate gland secretes a fluid that helps to nourish sperm. The gland itself surrounds the urethra, which is the tube that carries urine from the bladder out through the tip of the penis. As the prostate grows larger, it may press on the urethra. This narrowing of the urethra can cause some men with prostate enlargement to have trouble with urination. Prostate enlargement may be the most common health problem in men older than 60 years of age.



The cause of prostate enlargement is unknown but it is believed to be linked to hormonal changes as a man gets older. It is a

natural part of aging but at some point, it can lead to a condition called Benign Prostatic Hyperplasia (BPH). BPH is not prostate cancer and does not make one likely to get it.

BPH affect urine flow such as: Dribbling after urinating, A hard time getting started, A weak stream, or one still have to pee even after one just finished urinating, Frequent urination - eight or more times a day, Incontinence (when one don't have control over when one pee), An urgent need to pee all of a sudden, waking up several times at night to pee, Burning or pain when one pee, Blood in urine, Reduction in urine volume and unable to urinate at all because urethral is blocked.

For diagnosis, the doctor will do a physical examination, Prostate-Specific Antigen (PSA) blood test and bladder ultrasound. As preventative means, do exercises to strengthen the pelvic floor muscles, drink less caffeine and alcohol. For mild to moderate BPH, doctor mightt suggest medication. Some medications work by relaxing the muscles in prostate and bladder. Others help shrink prostate.

Successful PhD Defense: Dr. Azuka Henry Otuonye



Congratulations to Dr. A. H. Otuonye for successfully defending his PhD thesis on: "Evaluation of the Morphological, Molecular and Pathogenic Variability of the Black Pod

Pathogen (*Phytophthora* species) of Cocoa (*Theobroma cacao* Linn.) in Nigeria" at the Federal University of Agriculture, Abeokuta (FUNAAB) on March 31, 2023.

The research focused on black pod





CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.

of cocoa caused by *Phytophthora* species which reduces cocoa production in Nigeria by 80%. Frequent resistance breakdown in cocoa genotypes is attributed to genetic diversity of the pathogen, a fact that needs to be ascertained in order to proffer an effective management strategy for the disease. A total of 152 isolates of *Phytophthora* species were collected from infected cocoa pods in 5 cocoa producing states of Nigeria in 2012/2013 and 2014/2015 cropping seasons. Samples were evaluated using morphological, molecular and pathogenic variability techniques. Morphological characterization consisted of visual and microscopic examinations of 4- and 10-day old axenic cultures of the isolates on carrot and potato dextrose agar media to determine colony and sporangia characteristics. Molecular characterizations were done by amplification of Polymerase Chain Reaction (PCR) products of the *Phytophthora* isolates and sequencing of the Internal Transcribed Spacer (ITS) region of Ribosomal Deoxyribonucleic acid. Pathogenic variability was evaluated on two susceptible cocoa clones (N38 and ICS1) and two resistant cocoa clones (PA150 and IMC47) using the Leaf Discs (LD) test method in a Completely Randomized Design with three replications. Data were obtained on pedicel length, sporangia length-breadth ratio, lesion score and disease incidence (DI; %) on LD and subjected to Analysis of Variance. Mean values were separated using Duncan Multiple Range Test. Morphological studies revealed that three *Phytophthora* species (*P. megakarya* (Pm), *P. palmivora* (Pp) and *P. capsici* (Pc)) were associated with black pod symptoms. Five groups of colony patterns formed by the isolates of Pm and Pp discriminated the *Phytophthora* species. Mean pedicel length ranged from 0.25 - 3.00 μm (Pp), 5.35 - 10.00 μm (Pm), and 12.50 - 18.75 μm (Pc) in 2012/2013 collections. In 2014/2015, pedicel length ranged from 1.10 - 4.80 μm (Pp), 5.00 - 29.60 μm (Pm) and 31.43 - 94.22 μm (Pc). Length-breadth ratio ranged from 1.3 to 1.8 (Pp), 1.1 to 1.6 (Pm) and 1.8 to 1.9 (Pc) in 2012/2013 collections.

In 2014/2015 collections, the length-breadth ratio ranged from 1.4 to 1.9 (Pp), 1.1 to 1.6 (Pm) and 1.5 to 1.9 (Pc). Principal component and Single linkage cluster analysis of the morphometric sporangia characters, colony diameter (4 days after plating) and disease severity differentiated a distinct species, Pc. Molecular analysis identified 58 of the 60 *Phytophthora* isolates as Pm. Mean lesion scores on LD showed that the reactions of the *Phytophthora* isolates differed significantly, with isolate PNON008 inducing highest lesion score of 2.40 and 48.0% DI in 2012/2013 collections. *Phytophthora* isolate PNOY071 induced the highest lesion score 4.84 and DI of 96.8% in 2014/2015 collections. Two *P. megakarya* isolates (PNCR015 and PNOY071) were highly virulent as they produced 97% DI on Leaf Discs of cacao genotypes. Of the 152 isolates, 107 and 34 were Pm and Pp, respectively, while 11 belongs to a new species (Pc) found to be associated with cocoa in Nigeria. This study concluded that diversity exists in the *Phytophthora* population in Nigeria. Further studies should be devoted to elucidate the impact of the new species on cocoa. Hearty congratulations to the awardee!

Staff of the Month: Mrs. Nya Emem Okon



Mrs. Nya Emem Okon hails from Ini Local Government Area of Akwa Ibom State. She was born on December 17, 1990 in Calabar, Cross River State. She attended Mercy International

Christian School, Uyo for her Primary Education. She later proceeded to Secondary Commercial School, Mbiabong Ikot Udofia Ikono L.G.A Akwa Ibom State.





CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.

In pursuance of higher education, she has Bachelor of Science degree in Agribusiness and Management from Michael Okpara University Umudike, Abia State. Mrs Okon was employed by CRIN in March 24, 2020 as Higher Agricultural Superintendent. She belongs to the Association of Agricultural Technologists of Nigeria (AATON). She is happily married.

May Birthday Galore

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



Fajutu Kayode Samuel	02-May
Adejoro Matilda Ozemwogie	03-May
Dogo Genesis	03-May
Nwaolise Felicia	03-May
Oludayo Gbolagade	04-May
Agboluaje Ganiyu Ojo	05-May
Apanisile Olusola	05-May
Daniel Mezack Andrew	05-May
John Muo	05-May
Oguntoyinbo Waheed	05-May
Oladejo Adeleke Omineye	05-May
Oladimeji Lynda Taye	05-May
Orisasona Taye Matthew	05-May

Taiwo Banke Motunrayo	05-May
Ayidu Temitope	06-May
Olaniran Omolara Caroline	06-May
Oluyole Kayode Akanji	07-May
Ogundeji Adekunle Kayode	08-May
Adekanbi Aderemi Adeniyi	09-May
Asunbo Oluwadamilola	09-May
Buari Rasheed	09-May
Alih Mohammed	10-May
Imumolen Jeffery	10-May
Makinde Bunmi	10-May
Atanda Jamiu Folorunsho	11-May
Adeoye Stella Abosede	12-May
Dada Olayinka Alfred	12-May
Osinowo Oluwabukola Fadekemi	12-May
Falana Maria	13-May
Owolabi Iyabo Olufunke	13-May
Oyeniran Adejoke	13-May
Wada Sunday	13-May
Oyeledun Ibukun Olanike	14-May
Sobowale Ibrahim Olalekan	14-May
Boluwade Sunday	15-May
Ehimme Charles	15-May
Eubodaghe Monday	15-May
Oyemuwa John	15-May
Solomon Oluremi	15-May
deyemo Stephen	16-May
Ajayi Aremu John	16-May
Odugbela Oluwasina	16-May
Onanuga Odutola	16-May
Salami Mufutau	16-May
Adeleke Sunday Akanji	17-May
Dauda Oluwatoyin	17-May
Omoriegie Osayawe Martins	17-May
Orimiloye Philo Olotie	17-May
Asogwa Evaretus Uche	18-May





CRIN Herald

A MONTHLY PUBLICATION OF COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN), IBADAN.

Nome Peter	20-May	Ndah Alfa	25-May
Oshodi Veronica	20-May	Ogunkunle Gbadebo	25-May
Ayegboyin Kayode Olufemi	21-May	Oladipupo Olabisi	25-May
Bello Jelili Ademola	21-May	Yahaya Lateef Eugene	25-May
Ganiyu Bolanle Risikat	21-May	Adenuga Omotayo	26-May
Irouna Samuel Uchechukwu	21-May	Ogunjobi Taiwo Elizabeth	26-May
Onatunde-Onanuga Joseph O.	21-May	Olayiwola Iyabo	26-May
Nduka Beatrice Abanum	22-May	Olubisaye Dare Joshua	26-May
Nweke Nwankwo	22-May	Shittu Abu Sadik	26-May
Ogunwolu Qudus	22-May	Agbor Charles Eyang	27-May
Oyebanjo Temitope Omotayo	22-May	Akanji Azeez Abiodun	27-May
Okunade Oluwasegun Olufemi	23-May	Olorunmota Rosemary Temilade	27-May
Onojo Joseph	23-May	Magaji Jonathan Danladi	27-May
Ene Amaka Perpetua	24-May	Bakare Abibat	28-May
Awe Funke Christiana	25-May	Ganiyu Olubode	28-May
Muritala Wasiu	25-May	Oloyede Amos Adegbola	28-May
		Adewale Temilade Olujope	30-May
		Adio Stephen	30-May



COCOA RESEARCH INSTITUTE OF NIGERIA (CRIN)

High-end AGRICULTURE for all

* High yielding, disease resistant, early maturing and improved *cocoa pods*, *cocoa seedlings*, *cashew nuts* and *seedlings* are available for planting at affordable price.

* Also, we offer training on:

- good agricultural practices for cocoa, cashew, kola, coffee and tea
- coffee processing,
- cashew juice processing,
- best practices for cocoa nursery operators,
- fertilizer from cocoa pod husk,
- field establishment for cocoa etc.

CONTACT:

CRIN Headquarters, Idi-Ayunre, KM 14 Ibadan/Ijebu-Ode Road, P.M.B. 5244, Ibadan, Nigeria

☎ 07010513188
 ✉ directorcrin@yahoo.com
 🌐 <https://crin.gov.ng>

CRIN SUBSTATIONS

- CRIN Owena Substation, Idanre LGA, Ondo State.
- CRIN Ajassor Substation, Etung LGA, Cross River State
- CRIN Ibeku Substation, Bende LGA, Abia State
- CRIN Uhonmora Substation, Owan West LGA, Edo State
- CRIN Ochaja Substation, Dekina LGA, Kogi State
- CRIN Mambilla Substation, Sardauna LGA, Taraba State

