



AfricaYam / RTBfoods Joint Training on Yam Quality Evaluation



22-26 November 2021 - Cotonou, Benin



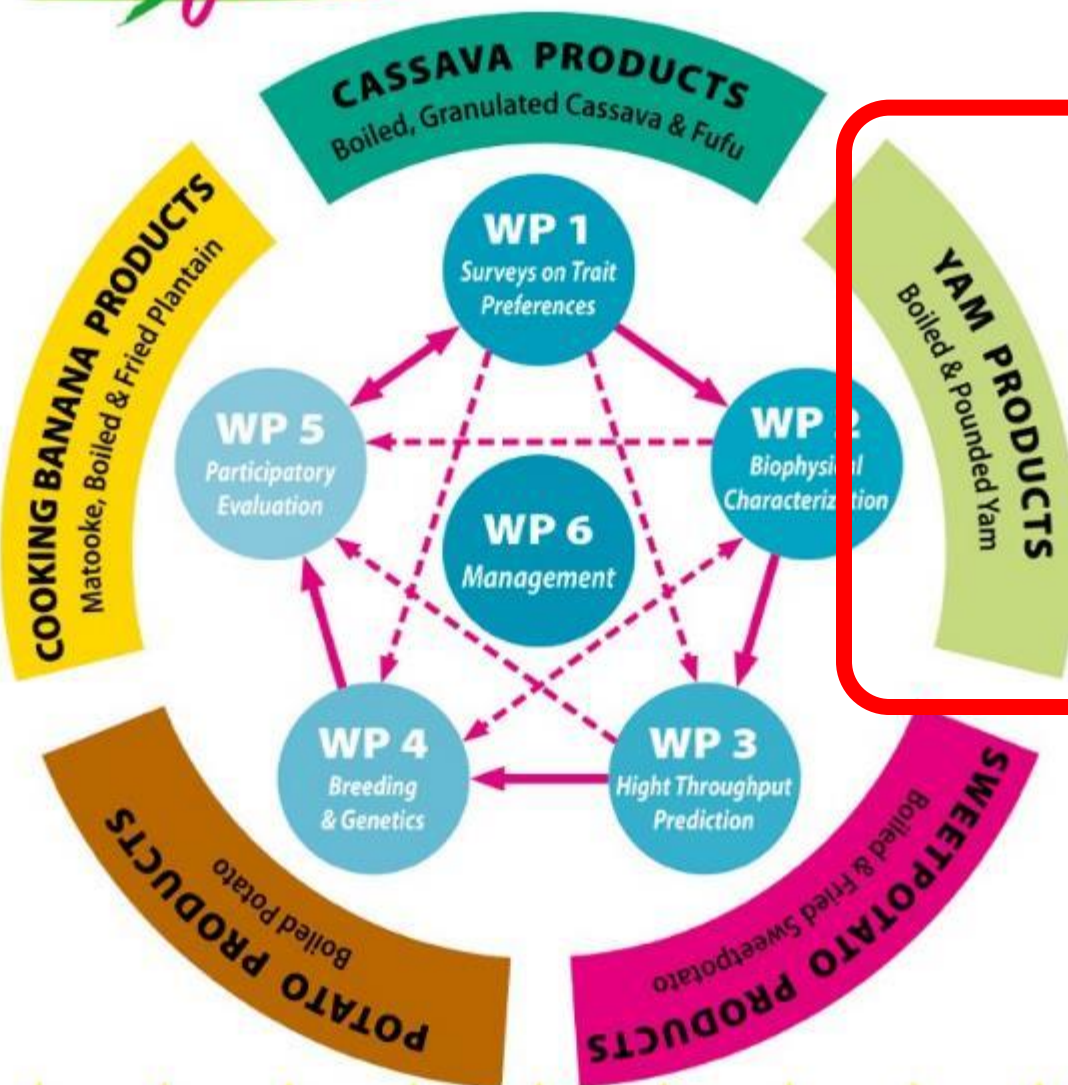
RTB foods in a Nutshell

Research Partners

- Nigeria**
 - NRCRI • IITA
 - Bowen University
- Uganda**
 - NaCRRI • NARL
 - Bioversity • CIP • IITA
- Benin**
 - UAC-FSA • IITA
- Cameroon**
 - CARBAP • IITA • ENSAI
- Côte d'Ivoire**
 - CNRA
- Colombia**
 - CIAT
- France**
 - CIRAD • INRAé • Bioversity
- USA**
 - Cornell University – BTI
- UK**
 - JHI • NRI

Partners Projects

- CRP-RTB
- NextGen
- AfricaYam
- SweetGains
- ABBB
- Harvest +



Stakeholders

- Consumers
- Processors
- Local Seed Providers

Countries

Target Countries

- Benin
- Côte d'Ivoire
- Cameroon
- Nigeria
- Uganda

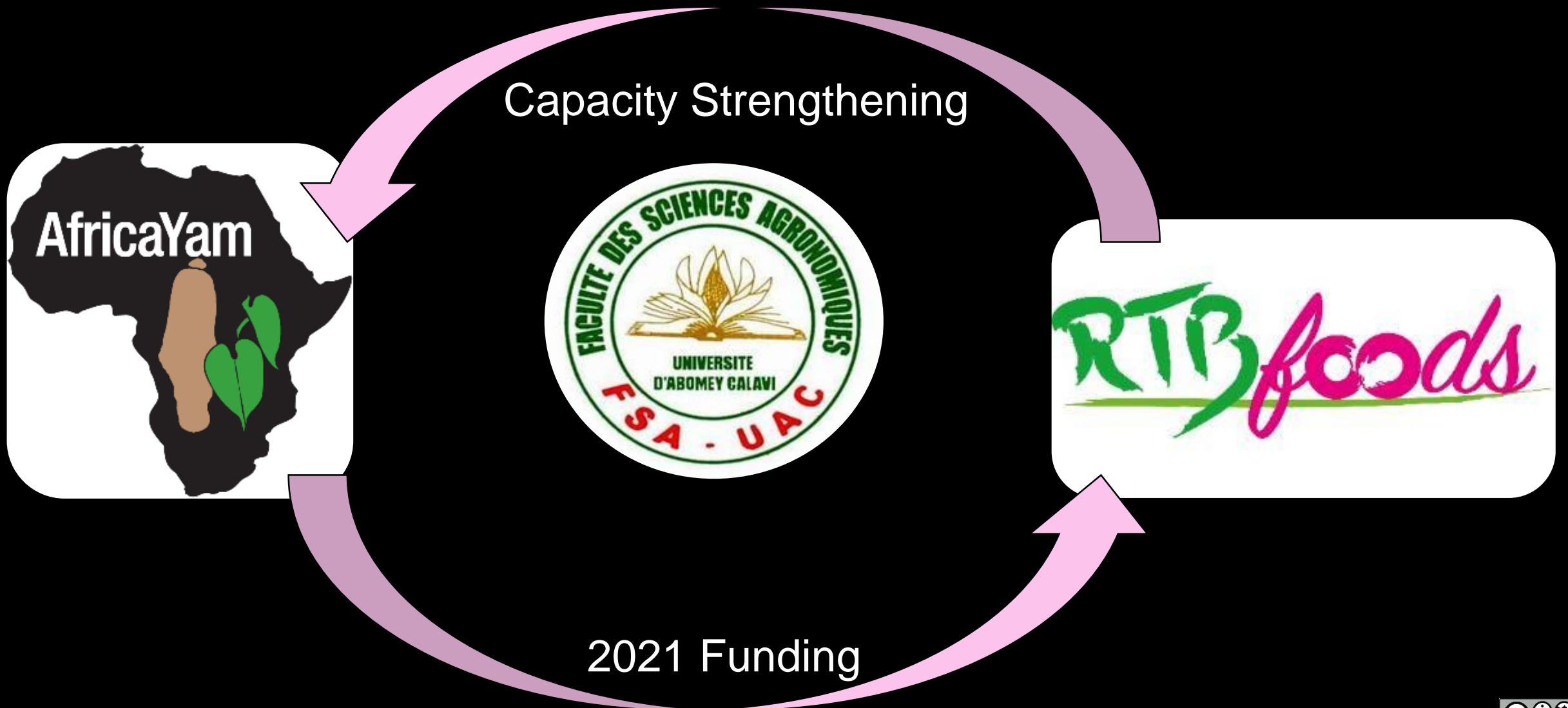
Spillover Countries

- Colombia
- Ghana
- Kenya
- Mozambique
- Tanzania



➔ Creating tools for breeders to better integrate quality traits as breeding priorities

The Cotonou Workshop = Output of a long-standing collaboration on yam



UNIVERSITE D'ABOMEY-CALAVI (UAC)
FACULTE DES SCIENCES AGRONOMIQUES (FSA)
HALL DE TECHNOLOGIE ALIMENTAIRE



AfricaYam / RTBfoods Training on Yam Quality Evaluation
INTERNATIONAL WORKSHOP
ORGANIZED BY AfricaYam & RTBfoods PROJECTS
November 22 -26, 2021
Hall de Technologie Alimentaire, Faculté des Sciences Agronomiques



Big Thanks to **Pr. Noël AKISSOE**
& Faculté des Sciences
Alimentaires (UAC)

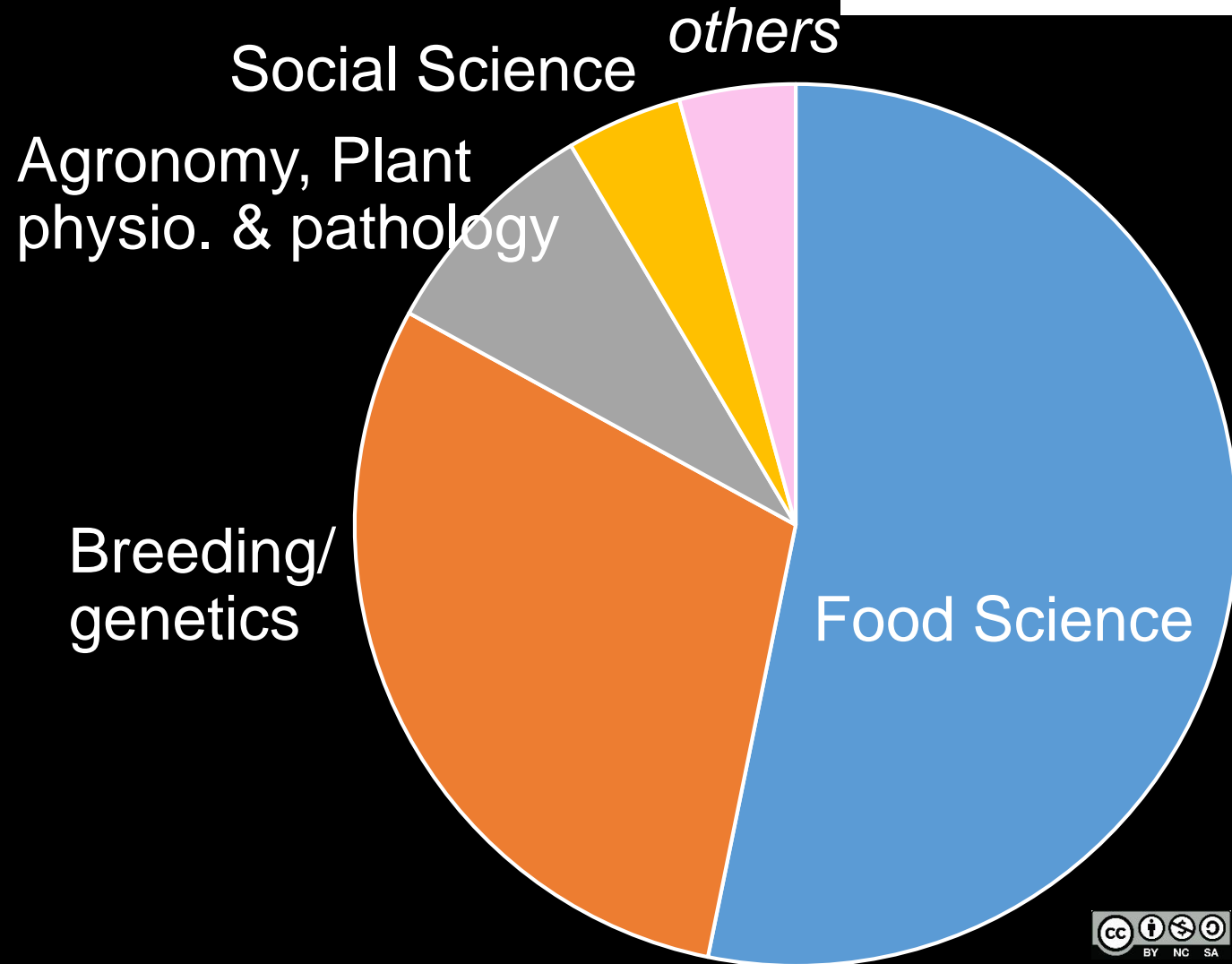


A training tailored to increase capacities of yam breeding programs



34 trainees: CSIR-SARI, Ghana
CSIR-CRI, Ghana
CNRA, Côte d'Ivoire
EBSU, Nigeria
NRCRI, Nigeria
IITA, Nigeria
UAC, Benin

33 RTBfoods speakers/trainers



3 day workshop focused on yam quality



Day 1 & 2: plenary presentations
+ panel discussions



Day 3: hands-on workshops (5)

Yam sample preparation



1- Tuber sampling from different varieties



2- Determination of 3 tuber sections (proximal, central, distal)



3- Peeling & Dicing before steaming

Sensory QDA (Quantitative Descriptive Analysis) of boiled yam samples with panellists





Individual sensory box



Sample description using food-product descriptors previously generated
(*appearance, texture, smell, aroma, taste*)

Textural characterization of boiled yam with instrumental texture analyzer (compression & penetration)

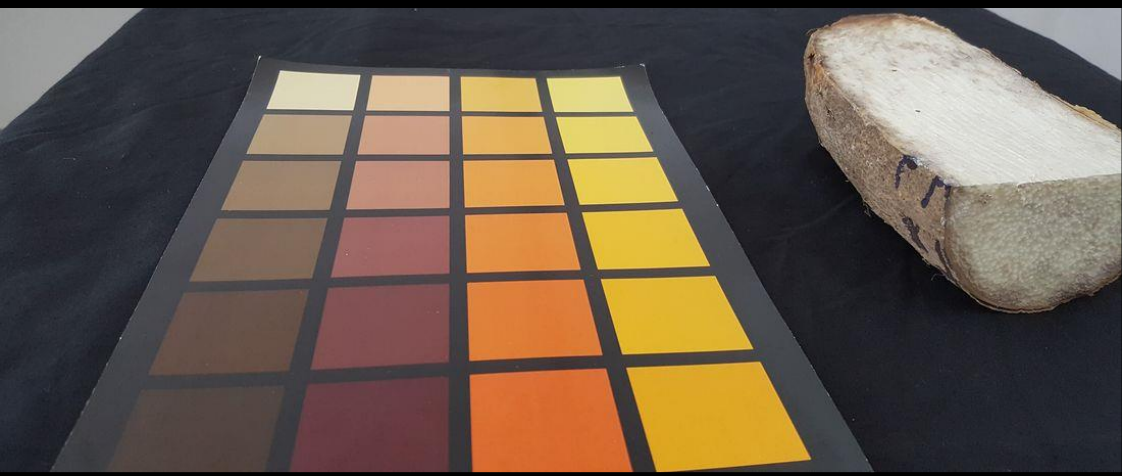


More info in
Dr. Oluwatoyin AYETIGBO's
presentation!

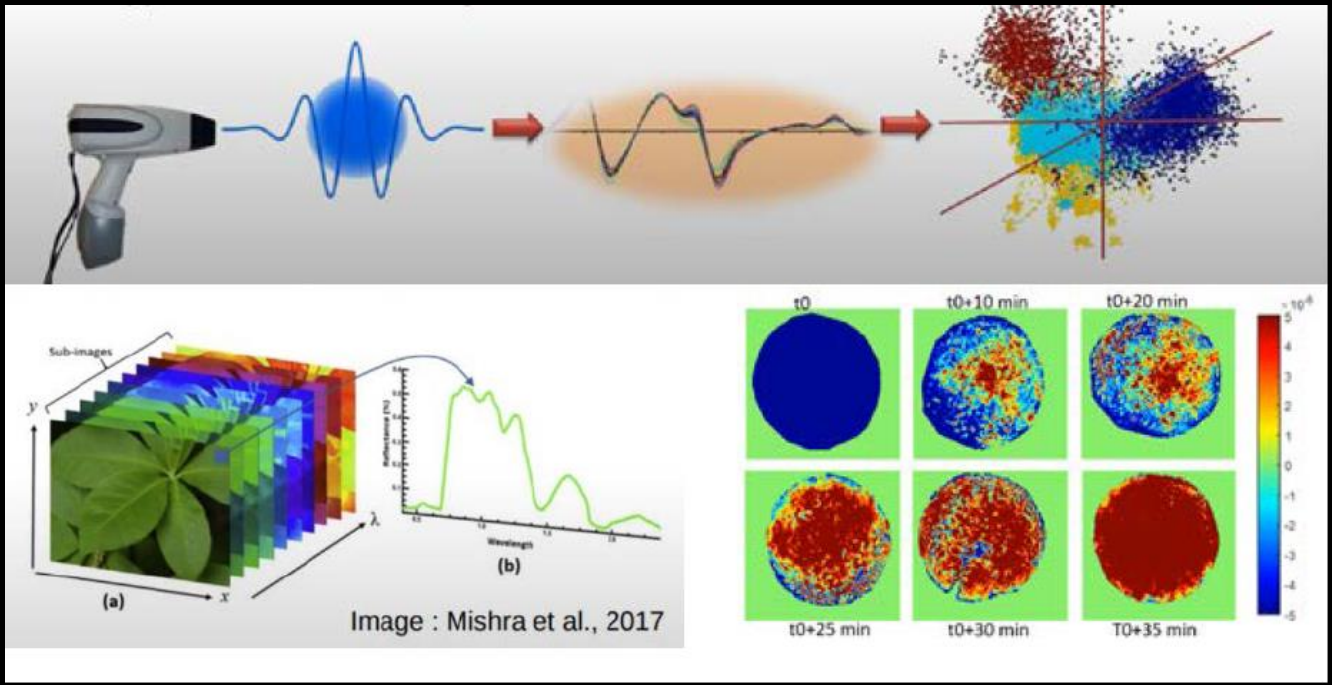
Texture analyzer (TAXT)

Principles of image analysis (colour) & NIRS acquisition on yam

More info in Dr. Denis CORNET's presentation!



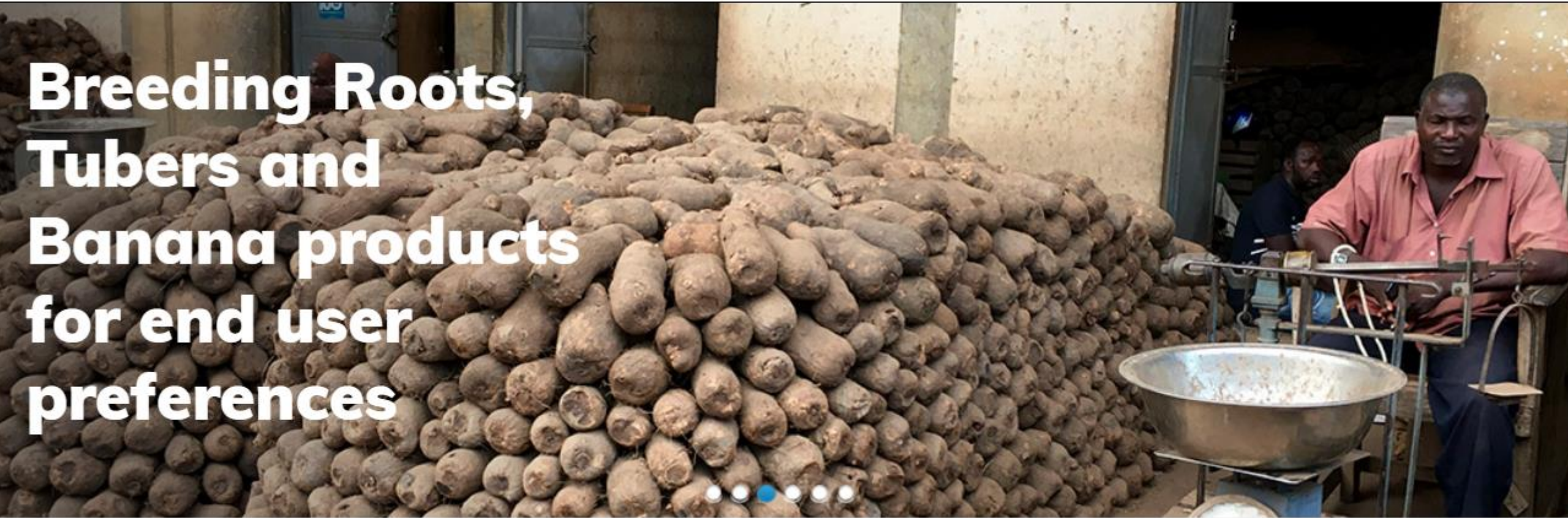
Colour chart to characterize yam browning with camera



Main steps in the acquisition of spectra using handheld Near Infrared Spectrometer

Boat trip to Ganvié island village





**Breeding Roots,
Tubers and
Banana products
for end user
preferences**

Project

- ▶ RTBfoods description
- ▶ RTBfoods Team
 - Product Champions
 - Focal points of our Partner Institutes
 - Workpackage Coordinators
- ▶ Funders & Partners

RTBfoods Products

- ▶ Cassava Products
 - Boiled Cassava
 - Gari-Eba
 - Fufu
 - Gari
 - Attiéké
- ▶ Cooking Banana Products
 - Boiled Plantain
 - Matooke
 - Fried Plantain
- ▶ Sweetpotato Products

Deliverables

- ▶ Annual Project Reports
- ▶ Scientific Cross-Cutting Activities
 - Reports on Trait Preferences
 - Gender Mainstreaming & Lessons Learnt
 - Laboratory Reports & Standard Operating Procedures
 - HTP & MTP Prediction Models & Proofs of Concepts
 - Methodological Manuals & Training Material
 - Ontologies for Food Quality Traits
 - RTB Food Product Profiles (FPP)
- ▶ Annual Thematic Reports
- ▶ Partner Activity Reports

Resources

- ▶ Newsletters
- ▶ Youtube Channel
- ▶ Annual Meetings
 - 2021 Virtual Annual Meeting
 - 2020 Annual Meeting
 - 2019 Annual Meeting
- ▶ Training on Yam Quality Evaluation (AfricaYam/RTBfoods)
- ▶ Papers of interest

Newsletters

Youtube Channel

Annual Meetings

Training on Yam
Quality Evaluation
(AfricaYam/RTBfoods)

Papers of interest

Training on Yam Quality Evaluation (AfricaYam/RTBfoods)

▶ Day 1 - Monday 22 November

▶ Day 2 - Tuesday 23 November

▶ Day 3 - Field Trip

▶ Day 5 - Friday 26 November

▶ Resources on Yam

Day 1 - Monday 22 November

09:20 - Overview of Projects on Yam at UAC-FSA

Report

[RTBfoods Training Report AfricaYam \(3 Mo\)](#)

Program

Day 1 - Monday 22 November

09:20 - Overview of Projects on Yam at UAC-FSA (N.Akissoe)

INCOYAM PROJECT in 1998

1 AfricaYamRTBfoods Yam Quality T...

YAM POST-HARVEST & CONSUMPTION to decrease losses and improve quality of yam tubers stored and that of dried products for african market

Drying of yam chips

Yam flour

AMALA

(FSA/CI, NRCRI/Nig, Cirad/CHZ/Suisse, K,U Leven/Bel)

European Union/INCO

11:20 - AfricaYam & RTBfoods Overview (P. Adebola & D. Dufour)

3 AfricaYamRTBfoods Yam Quality T...

Consumers have their say: assessing preferred yam quality traits, and implications for breeding.

Dominique Dufour

Yam Quality Training
V171121 (137 Ko)



RTBfoods



Home

Explore

Sports

Descriptions

Library



0:01 / 21:37

Lab Applications and Major Results on Quality Evaluation of Yam at Bowen University

AfricaYam/RTBfoods Training on Yam Quality Evaluation
22-26 November, 2021 - Cotonou, Benin

Speaker: Prof. OTEGBAYO Bolanle
Bowen University, Iwo, Osun State

Contributors

Bowen: ORONIRAN Oluyinka

TAN WOLA A

BO... Oluw

ilola

Training on Yam Quality Evaluation (AfricaYam/RTBfoods)

AfricaYamRTBfoods Yam Quality Training OTEGBAYO 23112021

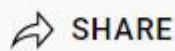
6 views...



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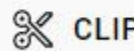
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RTBfoods

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Training on Yam Quality Evaluation (AfricaYam/RTBfoods) - 7/26

RTBfoods - 7/26



- 23 7 AfricaYamRTBfoods Yam Quality Training CHAMBA... RTBfoods 1:53
- 24 1 AfricaYamRTBfoods Yam Quality Training NAKISSOE RTBfoods 3:35
- 25 4B AfricaYamRTBfoods Yam Quality Training... RTBfoods 12:51
- 26 3 AfricaYamRTBfoods Yam Quality Training DUFOUR... RTBfoods 1:03

- All
- Recently uploaded
- Watched

Video removed

UNDO

All RTBfoods documentation is available on open access!

- **RTBfoods Yam Biochemistry Standard of operation (SOP)**

- 1 SOP for Analysis of Cell Wall Polysaccharides from Yam

- **RTBfoods Yam textural Standard of operation (SOP)**

- 1 SOP for Texture Analysis of Boiled Yam through TPA & compression
- 1 SOP for texture analysis of pounded yam through TPA

- **RTBfoods Yam sensorial analysis Standard of operation (SOP)**

- 2 SOP for Product preparation & sensory analyses on Boiled & Pounded Yam
- 1 training course on sensorial evaluation.

- **RTBfoods Yam spectral & image measurements (SOP)**

- Influence Fresh Yam Preparation on NIRS Prediction <https://doi.org/10.3390/app10176035>
- Review of NIRS applications in cassava and yam <https://doi.org/10.1111/ijfs.14773>
- 2 SOPs for Sampling, Codification & NIRS measurement on fresh yam
- 1 SOP for NIRS Measurement on Blended Cassava and Yam
- SOP for Hyperspectral imaging analysis of fresh RTB crops
- SOP for Feasibility of Bad-Good Genotypes Screening using NIRS
- SOP for Calibrated Color measurements of RTB foods using image analysis
- SOP for Characterization of RTB Product Color Change During Time



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Annual Project Reports

Scientific Cross-Cutting Activities

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- **Laboratory Reports & Standard Operating Procedures**
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Laboratory Reports & Standard Operating Procedures

- ▶ **SOPs Sensory**
- ▶ SOPs Texture
- ▶ SOPs Biochemistry
- ▶ SOPs Other biophysics
- ▶ SOPs Spectroscopy & Imaging
- ▶ Proofs of concept & other reports

SOPs Sensory

SOPs sensory

[RTBfoods_SOP_Sensory_Matooke_Uganda.pdf](#) 827.67 Ko

SOPs sensory

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Annual Thematic Reports

Laboratory Reports & Standard Operating Procedures

- ▶ SOPs Sensory
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SOPs Texture

SOPs texture


RTBfoods_SOP_Texture_Boiled cassava_Colombia.pdf  1.47 Mo

RTBfoods_SOP_Texture_Matooke_Uganda.pdf  690.63 Ko


SOPs texture


RTBfoods_SOP_Texture-TPA & Penetrometry_Boiled yam_Benin.pdf  968.58 Ko

SOPs texture

RTBfoods_SOP_Texture-TPA_Pounded yam_Nigeria.pdf  1.11 Mo

RTBfoods_SOP_Texture_Boiled sweetpotato_Uganda.pdf  1.30 Mo

RTBfoods_SOP_Texture_Eba_Nigeria.pdf  640.75 Ko

RTBfoods_SOP_Texture_Fufu_Nigeria.pdf  646.10 Ko

Annual Project Reports

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Annual Thematic Reports

Partner Activity Reports

Methodological Manuals & Training Material

- ▶ Surveys on trait preferences
- ▶ Sensory
- ▶ **Texture**
- ▶ High-throughput phenotyping
- ▶ Ontologies for data Management
- ▶ Quality assessment of new varieties
- ▶ Others

Texture

Texture

[RTBfoods_Support mission report_Textural characterization_Boiled cassava_Benin 2019.pdf](#) 7.61

Mo

[RTBfoods_Support mission report_Textural characterization_Boiled cassava_Uganda 2019.pdf](#)

203.77 Ko

[RTBfoods_Support mission report_Textural characterization_Matooke_Uganda 2019.pdf](#) 360.11 Ko

Texture

[RTBfoods_Support mission report_Textural characterization_Eba_Nigeria_2021.pdf](#) 860.11 Ko

[RTBfoods_Support mission report_Textural characterization_Fufu_Nigeria_2021.pdf](#) 794.57 Ko

[RTBfoods_Support mission report_Textural characterization_Pounded yam_Nigeria_2021.pdf](#)

930.70 Ko

2021 RTBfoods Special Issue!



Consumers have their say: assessing preferred quality traits of roots, tubers and cooking bananas, and implications for breeding

<https://ifst.onlinelibrary.wiley.com/toc/13652621/2021/56/3>

→ 9 Yam related papers (out of 36)

12 New Papers on Phenotyping Methods & Genetics of Yam Quality are coming in

Volume 56, Issue 3
Pages: i-iv, 1071-1501
March 2021

STAY TUNED!



RTBfoods chefs
<https://rtbfoods.cirad.fr/>



BILL & MELINDA GATES foundation

First author	Corresponding author	Crop	Institution	Draft Title
Otegbayo Bolanle	Otegbayo Bolanle	yam	Bowen U.	Food quality profile of pounded yam and Implications for yam breeding
Honfozo Lorenda	Akissoé Noël	yam	UAC/FSA	Characterising quality traits of boiled yam : texture, colour and taste for yam breeding improvement
Ayetigbo Oluwatoyin	Arufe Vilas Santiago	Yam	CIRAD	Relation between Instrumental and Sensory Extensional Properties and Consumer Preferences for Strechability of Pounded yam
Cornet Denis	Cornet Denis	Yam	CIRAD	Color characterization of RTB product using image analysis
Houngbo Mahugnon Ezekiel	Cornet Denis	Yam	CIRAD	Starch granule size and shape characterization of RTB flour using automated image analysis
Houngbo Mahugnon Ezekiel	Cornet Denis	Yam	CIRAD	Deep learning allows amylose content prediction in <i>Dioscorea alata</i> L. flour using NIRS
Otegbayo Bolanle	Gibert Olivier	Yam	Bowen U.	In situ dynamic rheological evaluation of raw yam tuber : a potential phenotyping tool for quality evaluation
Rinaldo Dominique	Rinaldo Dominique	Yam	INRAé	Organoleptic quality and processing ability in yam (<i>Dioscorea alata</i>)
Zhang Xiaofei	Xiaofei Zhang	Yam	CIAT	Genetic Architecture of Quality Traits of Boiled Cassava for Human Consumption
Arnau Gemma	Gemma Arnau	Yam	CIRAD	Identification of QTLs and candidate genes for physicochemical traits related to tuber quality in <i>D.alata</i>
Dossa komivi	Chair hana	Yam	CIRAD	Genome wide association study for tuber color and oxidative browning in <i>Dioscorea alata</i> l.
Asfaw Amele Asrat	Asfaw Amele Asrat	Yam	IITA	Molecular markers associated with pounding quality attributes in white yam