WORKSHOP REPORT

Title: Diagnosis for better plant disease management in Benin Republic: "Transform farmers' conversations into communication"

Date: 30 and 31 Oct. 2023

Venue: University of Parakou

Names and affiliations of the organizers:

Organisers:

Guest:	**Host:**
Dr. Chofong Gilbert N. Julius Kühn-Institut (JKI), Federal Research Centre for Cultivated Plants Institute for Epidemiology and Pathogen Diagnostics Messeweg 11-12 D-38104 Braunschweig Germany Tel.: **+49 (0)3946-47 6152** e-mail: gilbert.chofong@julius-kuehn.de	Pr Dr Léonard Afouda, Phytopathologiste, Enseignant-Chercheur, Directeur du Laboratoire de Phytotechnie, d'Amélioration et de Protection des Plantes (https://www.lapapp-up.com/), Faculté d'Agronomie/Université de Parakou 02 B.P.1003 Parakou, Rep. Benin (W. Africa) Tel. (00229) 95762220 / 96178456

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Presented by Chofong Gilbert Nchongboh.

Executive Summary:

Plant health is critical for local economies and global food supply. Plant pests and diseases result in significant yield losses, compromising food security in developing countries. This workshop addresses the lack of human capacity and infrastructure for plant pest and disease diagnosis in African countries, leading to inappropriate control methods and pesticide overuse. By empowering local communities with knowledge and communication tools bridging the gap between reporting, diagnosis and effective management. The workshop aims to improve plant disease management, reduce crop losses, and ensure sustainable productivity.

The workshop encompassed theoretical and practical components, focusing on identification of plant pathogens, reporting methods, and community-based surveillance. The goal was to equip participants with the knowledge and tools to enhance plant disease management.

Introduction:

The Republic of Benin, like many other developing countries, faces significant challenges in plant disease management. In Benin, the lack of human capacity and infrastructure for plant pest and disease diagnosis has led to inappropriate control methods and the overuse of pesticides. The agricultural landscape is further complicated by the prevalence of remote, resource-poor farming communities where disease identification and reporting are hindered by a knowledge and technological gap.

The workshop was focused on transforming farmers' conversations into effective communication. By empowering local stakeholders with knowledge and communication skills. The backdrop of the University of Parakou, with its equipped 'Laboratoire de Phytotechnie, d'Amél'oration et de Protection des Plantes (LaPPAP),' provides an ideal setting for hands-on training and collaborative efforts to enhance plant health management in Benin.

Objectives

Objectives of the workshop:

- Build the capacity of local farmers, agricultural technicians, and other stakeholders in recognizing, recording, and reporting plant pathogens through field symptoms.
- Establish a common communication method among farmers, field technicians, plant pathologists, and policymakers in plant disease reporting.
- Enhance understanding of plant disease diagnosis and management approaches specific to the Republic of Benin.

- Provide skills in tailoring messages through the review of grower/stakeholder outreach surveys to improve communication strategies.
- Determine the best ways to assess and communicate plant diseases geared toward effective management.

Brief description of the location and facilities

The workshop lectures were held in the Nematology Department hall and practical sessions at the "Laboratoire de Phytotechnie, d'Amél'oration et de Protection des Plantes (LaPPAP)" within the University of Parakou. The hall was spacious and contained media equipment for lectures. The laboratory used is equipped with necessary tools for pathogen detection, ranging from microscopy, serology, to molecular biology techniques. In addition, greenhouses and open field plots were also available.

Participant

The workshop engaged a total of 36 participants, encompassing farmers, field supervisors, agriculture technicians, and teachers, regional representatives from ministry for Agriculture, plant pathologists, physiologists, NGO representatives, policy makers, and key organizers.

Agenda

DAY 1		
TIME	***ACTIVITY***	***RESPONSABLE***
8h30-9h	Arrival and installation of participants	Student volunteers register and hand in batches.
9h-9h30	Word of welcome and speech	Prof. BIAOU Honore´ (HoD) Dr Chofong - APS-OIP/ Pro-Cashew
9h30-10h	Self-Introduction	Individual
10h-10h30	Coffee Break	Catering
10h30-11h30	Lecture 1: Plant disease	Dr Chofong
11h30-12h	Questions and discussions	All
12h-12h30	Plant Pathogens: • Fungal Diseases • Bacterial Diseases • Viral & Viroid Diseases • Nematode Diseases • Phytoplasma Diseases • Pathogenic Parasitic Plants / Nutrient Deficiency / Weed / Invasive Plant Species	Dr. Chofong Prof. Afouda
12h30-13h30	Lunch Break	Catering services/All
13h30-14h30	Lecture 2: Conversation / Communication	Dr Chofong
14h30-15h00	Discussion	All
15h00-16h00	Lecture 3: Pathogen Diagnostics:	Dr Chofong
16h00-16h30	Discussion	All
16h30h-16h45	"As it is" communication	Individual reaction /action when encounter plant disease.
16:45-17h00-	Closing remark/Family photograph/End	Pr. Afouda / Media Team
DAY 2		
8h30-9h	Recap of DAY 1: Formation of groups for Practical	Pr. Afouda/Dr Chofong
9h-10h30	Practical session 1: Serology Diagnostics	Pr. Afouda /Student Assistant
10h30-11h	Practical Session 2: Identification via symptoms	Prof Afouda / Dr. Chofong
11h-12h	Lecture 4: Pest and disease of Cashew in Benin	Prof Afouda.
12h-12h30	Lecture 5: Pro-Cashew Project	Prof A.
12h30-13h30	Pause dejeuner	
13h30-16h00	Practical session 3: Microscopy Molecular diagnostic	I propose this should be longer, we get experience from different participant
16h-16h50	Feedback / General discussion	Outcome
17h	End and departure	

Learning objectives:

1. The workshop focused on plant disease diagnosis and management in Benin, tailoring messages for effective communication, discussing challenges and opportunities, and determining the best ways to assess and communicate plant diseases.

Figure 1: Pictures with some major disease of Cashew presented to the participant. Used for communication exercises, trying to understand how individual may describe the disease to a friend, colleague or a surveillance team.

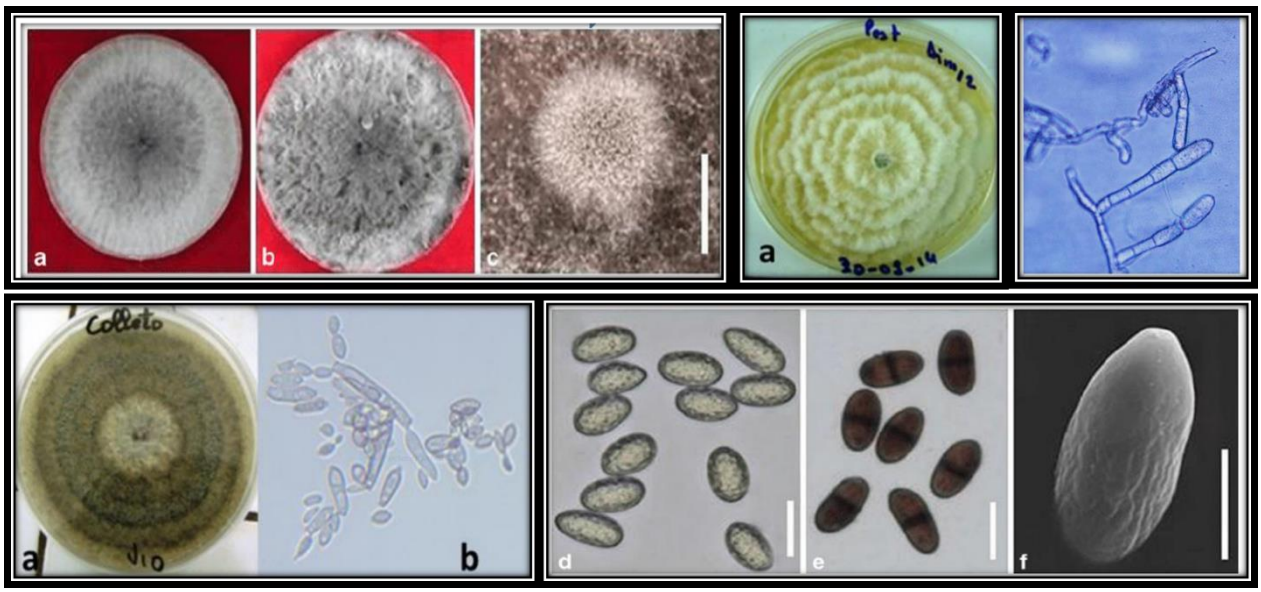

Figure 2: Microscopic photographs of pathogens prepared for participant to visualise during the practical sessions.

Outcomes:

- Opportunities for collaboration and partnerships among experts.
- Participants gained new information, techniques, and strategies.

- Attitudinal and behavioural change, increasing confidence and motivation.
- Organizational impact on stakeholders' skills, productivity, and work culture.

Impact Assessment:

The workshop aimed to foster collaboration, provide new information, and induce attitudinal and organizational changes. Impact assessment methods included pre- and post-workshop surveys to gauge changes in knowledge, attitudes, and behaviours.

Challenges:

During the workshop, several challenges were identified. Key challenges emerged:

1. Limited resources
2. Short duration of the workshop
   The constraint of limited time and resources presented challenges in delivering comprehensive content and ensuring in-depth discussions.
3. Rareness of such training opportunities
   The infrequency of workshops of this nature raised concerns about the availability and accessibility of similar training opportunities for participants in the future.
4. Discrepancy in participants' knowledge to assimilate plant pathogen related subjects.

Proposed Solutions:

- To mitigate the challenge of limited time, a strategic restructuring of the subsequent workshop schedule will be implemented. This will involve prioritizing key topics and programing with ample of time maximum impact. Additionally, the incorporation of pre-workshop resources and post-workshop follow-up materials aimed to enhance the learning experience beyond the confines of the workshop itself.
- Overcoming the rareness of training opportunities: Recognizing the rarity of such specialized training, efforts will be made to establish a framework for continuous learning. This involved the creation of an online platform to facilitate ongoing discussions, resource sharing, and networking among participants. Furthermore, recommendations for the establishment of a sustainable model for periodic workshops and training sessions were discussed, aiming to address the challenge of sporadic opportunities.

Recommendations:

Actionable recommendations resulting from the workshop suggested for future activities or improvements:

- Plan a community-based surveillance system
- Plant pathology terms tailored for the local community
- Initiate a simple communication language between resource-poor farmers and Field supervisors or Agriculture officers and Plant pathologists
- Demo: Recording and transmission of information related to plant disease noticed from a local village

Conclusion:

The "Diagnosis for better plant disease management in Benin Republic: Transform Farmers' Conversations into Communication" workshop was a resounding success, bringing together diverse stakeholders to address the pressing challenges in plant disease management in the Republic of Benin.

Throughout the workshop, participants engaged in intensive theoretical and practical sessions aimed at enhancing their understanding of plant pathology, identifying key plant pathogens, and developing effective communication strategies. The focus on building capacity among farmers, technicians, and other stakeholders was evident in the enthusiastic participation and commitment displayed by the attendees.

Appreciation:

The organizers express sincere gratitude to all participants, facilitators, and stakeholders who contributed to the success of the workshop. The commitment and enthusiasm displayed during the workshop underscore the collective dedication to improving plant health in the Republic of Benin.

This workshop marks a significant step toward filling the knowledge and communication gap in plant disease identification and management in Benin. The collaborative efforts of diverse stakeholders hold the promise of a more resilient and sustainable agricultural future for the country.

Acknowledgement:

We extend our heartfelt gratitude to the generous funders whose support made the workshop possible. Their commitment to advancing agricultural practices and enhancing food security in the Republic of Benin has been instrumental in the success of this initiative.

The APS Office of International Programs offers a "Global Experience," a program aimed at helping APS plant pathologists to work with scientists and extension personnel in developing countries in training and outreach efforts. OIP support graduate students, post-doctoral associates, faculty, and staff in conducting short courses, workshops, or training programs in collaboration with a host country cooperating institution.

The Pro- Cashew project has as mission to stimulate economic growth and improve livelihoods by cultivating entrepreneurship and vision of “A prosperous world without hunger”.

Financial support has empowered diverse stakeholders in the Republic of Benin, fostering collaboration among farmers, field supervisors, educators, policymakers, and more. APS-OIP and Pro-Cashew resources facilitated a workshop, enhancing participants' capacities and communication skills, contributing significantly to sustainable plant health management strategies in the region.

We appreciate the trust and confidence that APS-OIP and Pro-Cashew has placed in our vision for improving plant health in Benin. Your commitment to supporting initiatives that address critical challenges in agriculture is a testament to your dedication to making a positive impact on communities.