



SYMPOSIUM “UNLOCKING THE POTENTIAL OF MICROBIOMES FOR SUSTAINABLE AGRICULTURE” AT IPPC 2024

This was the title of the concurrent session #1 held at the XX IPPC 2024 (Athens, Greece), organized by Drs. Nora Altier (INIA Uruguay, IAPPS Coordinator for South America), Eduardo Abreo (INIA Uruguay) and Linda Kinkel (UMN, USA).



Victor Carrión, Doreen Babin, Nataliia Khomutovska, Nora Altier, Linda Kinkel, Eduardo Abreo.

It was focused on the management of plant-associated microbiomes, which offers the possibility of addressing plant protection and plant nutrition issues for sustainable agriculture, within the One Health concept, to acknowledge that the health of plants, animals, environment, and people are interlinked and interdependent. Interactions within microbiomes have profound effects on soil, plant, and agroecosystem health, which in turn impact soil fertility, crop yields, and food quality and safety. Beneficial microbes have been usually studied in isolation, as

inoculants, endophytes or applied microbial products, while neglecting the complex networks of the agricultural microbiomes where they are embedded. Additionally, the genetic factors involved in microbiome assembly remain largely elusive. An understanding of microbiome structure and functions will determine common threads leading to beneficial activity and contribute to the redesign of production systems.

The symposium included nine presentations from around the world, addressing the needs of the future and discussing pathways towards new biological, chemical, and breeding strategies to assure an agriculture with reduced inputs without jeopardizing food production and food security. The session provided a unique opportunity for researchers from different disciplines to come together, compare research outputs and build collaborations to advance the understanding and enhancement of microbiomes and their role in plant health, while posing significant challenges for agricultural sustainability towards human welfare.

Organizers designed a dynamic methodology for the final round table, using the interactive presentation software mentimeter (<https://www.mentimeter.com/es-ES>). They prepared three questions to trigger the participation of an audience with more than 200 attendees, which were fully positive and responsive.

1. What does the “ideal” microbiome provide for agroecosystems and One Health?
2. What are the primary limitations to successful microbiome management in agricultural production systems? What are they now? And in 5-10 years?
3. Who would be routinely targeting for microbiome management in the near future? 1) growers; 2) plant breeders; 3) plant protection scientists; 4) soil scientists; 5) environmental economists.

The titles and the speakers of the presentations are listed below:

1. Unlocking the secrets of plant microbiomes. Víctor J. Carrión, Department of Microbiology and Crop Protection, Institute for Mediterranean and Subtropical Horticulture ‘La Mayora’, Universidad de Málaga, Spain. vcarrion@uma.es
2. Microbiome innovations to support plant and One Health. Gabriele Berg, Environmental Biotechnology, Graz University of Technology, Austria. gabriele.berg@tugraz.at
3. What determines the functional capacities of endophytic and soil microbiomes?. Linda Kinkel, Department of Plant Pathology, University of Minnesota, USA. kinkel@umn.edu
4. Managing soil and plant-associated microbiomes in agroecosystems. Doreen Babin, Julius Kühn-Institut, Germany. doreen.babin@julius-kuehn.de
5. Microbiomes in agricultural settings: invisible partners revealed. Eduardo Abreo, Instituto Nacional de Investigación Agropecuaria, INIA Las Brujas, Uruguay. eabreo@inia.org.uy
6. Variable effect of microbiome manipulation in the southern green stink bug *Nezara viridula* and its implications for the symbiotic control. Sofia Victoria Prieto, Università degli Studi di Torino, Italy. sofiavictoria.prieto@unito.it
7. “Cry for help” upon pathogen attack across the Brassicaceae Family. Melissa Uribe Acosta, Plant-Microbe Interactions Group, Utrecht University, The Netherlands. m.uribeacosta@uu.nl
8. Continental screening of the biocontrol yeast *Aureobasidium pullulans* across Europe: the case for local adaptation and mining. Nataliia Khomutovska, University of Warsaw, Poland. n.khomutovska@uw.edu.pl
9. Final considerations: How do microbiomes contribute to the plant protection sciences and the concept of One Health? Nora Altier, Instituto Nacional de Investigación Agropecuaria, INIA Las Brujas, Uruguay. naltier@inia.org.uy

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REPORT ON THE 9TH EXTRAORDINARY SESSION OF THE SAHELIAN PESTICIDES COMMITTEE

The Sahelian Pesticides Committee (CSP in French) held its 9th extraordinary session in Bamako, Mali, from 15 to 20 July, 2024. The objective of this session was to evaluate pesticide registration applications in the Permanent Inter-States Committee for the Fight against Drought in Sahel (CILSS in French) pesticide registration system.

The meeting was attended by ordinary members representing the nine former CILSS member states, with the exception of representatives from Cabo Verde. Other participants included representatives of Centre Regional AGRHYMET and ECOWAS and two observer members, FAO and the Central African Pesticides Committee (CPAC in French). Thirteen experts were invited as resource persons to support the sub-committees in evaluating the requirements of the



registration dossiers. The meeting was organized in two steps: a pre-session and a post-session. The session made decisions and recommendations.

During the pre-session, verification of the conformity of files submitted to the ninth extraordinary session of the CSP was finalized by the Coordination Unit, while 14 files were pre-evaluated by the pre-evaluation team. Following evaluation of the folders submitted, sixty-nine (69) authorizations were granted by the CSP under the terms of the deliberations of its 9th extraordinary session.

The work of the post-session provided an opportunity to review the results of the evaluations by the two sub-committees of all the folders submitted to this session. In the course of this review, clarifications were made to certain observations made by the members of the sub-committees, and certain observations deemed irrelevant were withdrawn from the observations to be forwarded to the firms. The work of the post-session provided an opportunity to exchange views on a number of major challenges including (i) the increasingly mediocre quality of the application folders submitted, which did not meet the CSP's requirements, resulting in most of the folders in the first submission being kept under review (ii) the poor quality of test reports on the biological efficacy of pesticides included in registration folders (compliance with protocol requirements, certification of reports by the relevant authorities, etc.).

Decisions of the ninth extraordinary session of the CSP

The ninth extraordinary session of the CSP made decisions on various subjects brought to the attention of CSP members at the plenary session held on Saturday July 20, 2024.

1. Request for correction of the WHO classes of four pesticides authorized by the CSP. The Committee found the request receivable.
2. Request to add a third trade name to a chemical authorized by the CSP. The Committee refused the addition of a third trade name to any chemical authorized by the CSP.

At the end of the post-session, the **following recommendations were made:**

- Organize a training session for firms staffs on how to prepare their folders in accordance with CSP requirements
- Raise awareness among NARS managers on the need to conduct pesticide biological efficacy trials in line with CSP requirements. This element should be included in the agenda of consultation meetings organized by INSAH as part of the revitalization of its partnership with national institutions in charge of agricultural research in CILSS member states;
- Identify a weed scientist to strengthen sub-committee 1 to better evaluate herbicide-related folders;
- Train NARS researchers on the preparation of protocols of trials in order to assess the biological efficacy of pesticides;
- Issue a reminder letter to private companies (cotton and sugar) informing them of the need to conduct pre-extension biological efficacy trials in collaboration with research institutions.

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The IAPPS Newsletter is published by the International Association for the Plant Protection Sciences and distributed in *Crop Protection* to members and other subscribers. *Crop Protection*, published by Elsevier, is the Official Journal of IAPPS.

IAPPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to the world's crop and forest ecosystems.

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