



European Research Alliance

ERA Pesticide Free

Towards a chemical pesticide free agriculture

NEWSLETTER #14 ITALY

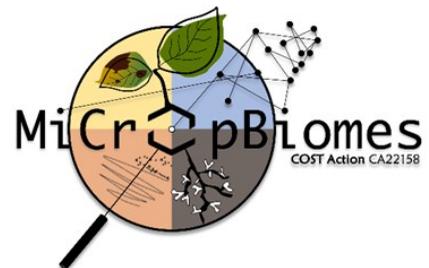
3 April 2024

Every two weeks, this newsletter will be prepared by a different Alliance member.

Today we are happy to share a contribution from the [University of Bologna](https://www.unibo.it), in Italy.

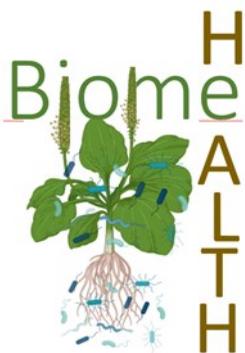
MiCropBiomes: Exploiting Plant-Microbiomes Networks and Synthetic Communities to improve Crops Fitness

The University of Bologna (UNIBO) is vice-chair of the Cost Action - CA22158: Exploiting Plant-Microbiomes Networks and Synthetic Communities to improve Crops Fitness (**MiCropBiomes**). MiCropBiomes grounds on the urgent need for transition to Sustainable Agriculture ensuring food Security and Safety, aligned with both GreenDeal and “Farm-to-Fork” strategy. MiCropBiomes will gather European experts to coordinate and develop knowledge on crop microbiomes (and holobiomes) for application in precision sustainable agriculture. It will exploit technological advances (e.g., engineered microbiomes) to selectively improve the holobiomes’ resistance to specific environments like drought and diseases. WG3, Crop microbiomes and plant diseases: from dysbiosis to increased defences, specifically focus on the role of phytobiota in plant health.



More information can be found here: <https://www.cost.eu/actions/CA22158/>

Horizon Europe WIDERA Project BIOMEHEALTH



The aim of the WIDERA Project BIOMEHEALTH is to strengthen the capacities of a Portuguese R&I centre of excellence for plant pathogens detection and control). BIOMEHEALTH Consortium is constituted by Requite/University of Porto (coordinator), the University of Bologna and Wageningen University & Research. BIOMEHEALTH fully complies with the principles of the ERA Alliance Towards Chemical Pesticide free Agriculture. Finding new solutions for crop health to ensure pesticide and input reduction, food safety and security under challenging conditions of climate change and emerging diseases is only possible by undertaking translational research and knowledge transfer in precision agriculture technology. BIOMEHEALTH aims to reinforce the cooperation between two EU leading partners (WUR and UNIBO) and Requite/UP in pathogen detection and novel pathogen control tools based on plant microbiomes. This cooperation will capacitate the Requite/UP by training its staff/researchers/students in these R&I fields and in outcomes exploitation (academic, industry, policymakers, society).

PollinERA: Understanding pesticide-Pollinator interactions to support EU Environmental Risk Assessment and policy

Insect pollinators are extremely important for food production and vital for the functioning of several ecosystems. However, there are evidence that this functional group is declining worldwide, and pesticides have been identified as one of the main causes. Under this framework, the Department of Agricultural and Food Sciences at the University of Bologna is implementing three research projects aimed at evaluating and reducing the impact of pesticides on insect pollinators.



PollinERA is a 4-year Horizon Europe project aiming to reverse pollinator population declines and reduce the harmful impacts of pesticides through developing knowledge and protocols for a broad range of toxicological testing, feeding to in silico models (QSARS, toxicokinetic/toxicodynamic, and ALMaSS agent-based population simulations). Using a strong stakeholder co-development approach, these models will be combined in a One System framework taking a systems view on risk assessment and policy evaluation, including an international monitoring program developed within the project. The One System framework is based on EFSA’s system ERA view, expanding on the tools used for bees to include butterflies, moths and hoverflies and builds on the recent EFSA Roadmap for action on the environmental risk assessment of chemicals for insect pollinators (IPol-ERA) project. The consortium partners are experts in the field needed for this development and are well-placed to facilitate the uptake of tools by European bodies to guarantee the project’s future impact.

PollinERA is coordinated by Aarhus University and the consortium comprises 11 partners spanning 8 European countries: Denmark, Sweden, Poland, Germany, Belgium, Italy, Bulgaria and Slovenia.

POLYPOLL: An interdisciplinary approach to unravel the effects of combined exposure to chemical pollutants on insect pollinators

POLYPOLL is a two-year project financed by the European Union - NextGenerationEU through the Italian Ministry of University and Research under PNRR - Mission 4 Component 2, Investment PRIN. This project aims to assess the impact of different chemical pollutants, administered alone and in combination, on three different pollinator species chosen for their contrasting life history traits. In agricultural environments, insect pollinators are routinely exposed to combinations of different chemical pollutants, yet the risk from multi-chemical exposure has been often overlooked and the current environmental risk assessment procedures, which is based on the single-compound single-crop paradigm, is missing to consider the complexity of the environments where insect pollinators live. POLYPOLL will facilitate the transition to next-generation, systems-based environmental risk assessment by addressing three specific objectives by: 1) understanding whether and how the different model species respond to chemical stressors and if the tested chemical mixtures can lead to a synergic effect; 2) verifying if these stressors result in a lower survival rate, a gut microbiome alteration and a sublethal toxicological effect (i.e. genotoxic, immunotoxic); 3) identifying key biomarkers and to develop statistical interpretative models able to rank the stress levels for each investigated species.

POLYPOLL is coordinated by University of Bologna and the consortium comprises other two partners: University of Siena and University of Milan.



This is the newsletter of the European Research Alliance *Towards a chemical pesticide free agriculture*

Visit the Alliance’s website: <https://www.era-pesticidefree.eu/>

This issue has been prepared by [UNIBO](https://www.unibo.it) as a member of this Alliance.

If you would like more information about this issue, feel free to [contact them](#).



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