



# Phytobiomes: A New Vision for Agriculture

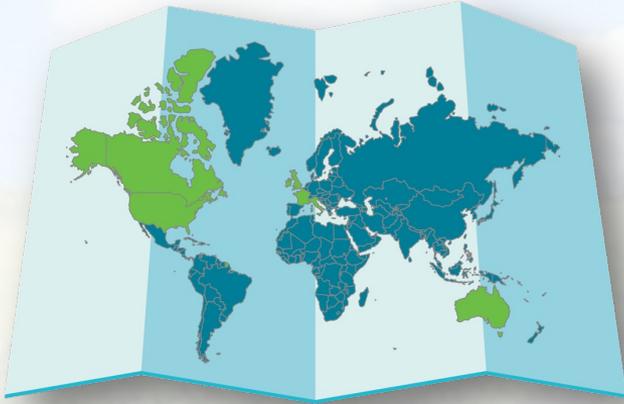
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Conference & City Country



# International Alliance for Phytobiomes Research



- Nonprofit, precompetitive research consortium
- Industry, academia, and government
- Paradigm shift in agricultural research & production

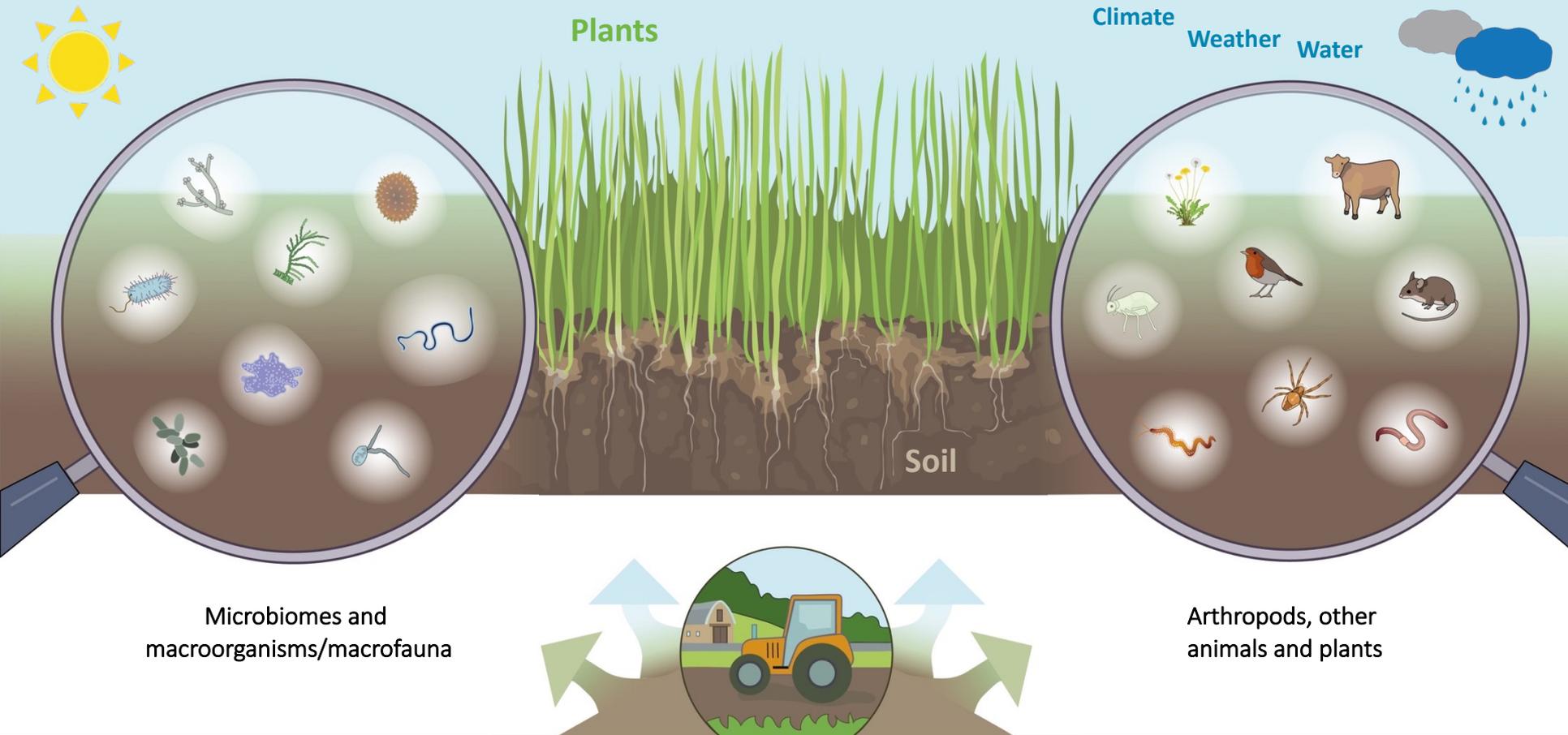


**Vision:** By 2050, all farmers have the ability to use predictive and prescriptive analytics based on geophysical and biological conditions for determining the best combination of plants, management practices, and inputs for a specific site in any given year.



**Strategy:** Identify gaps in research, tools, and technologies and develop projects to address them.

# Phylobiomes: Complex Systems of Plant-based Agriculture



Microbiomes and  
macroorganisms/macrofauna

Arthropods, other  
animals and plants

All influenced by management practices

# Examples of Phytobiomes

Crop Field



Pasture



Vegetable Garden



Forest



Vertical Farm



# Holy Grail for Phytobiomics



**To understand, predict, and control emergent phenotypes within specific phytobiomes for the sustainable production of food, feed, and fiber.**



# Research Priorities



**Phybiomes-knowledge generation**



**Standards and protocols & capacity building for application**



**Regulatory framework**



**Data generation, management & modeling**



**Multi-disciplinary capacity building**



**Precision, digital and AI Ag integration**



# Efforts: Linking Components Across Phytobiomes System



Increased engagement in Europe: *Microbes 4 Climate* and *MICRObiome Biobanking Enabler*



Phytopathology article: *From Microbes to Microbiomes: Applications for Plant Health and Sustainable Agriculture*



Phytopathology article: *Genotypic & Phenotypic Analyses Show *Ralstonia solanacearum* Cool Virulence is a Quantitative Trait Not Restricted to "Race 3 Biovar 2"*



Secured US NSF grant to Coordinate Microbial Collections and Networks: Public & Private



Novel Microbiome Technologies to Increase Profitability for Australian Horticulture



Establish Linkages and Commonalities between Plant and Animal Health & Nutrition

# Phytobiomes Alliance Working Groups

Identify gaps and research needs; coordinate efforts on specific topics



**Microbiomes**



**Regulatory**



**Animal Microbiomes**



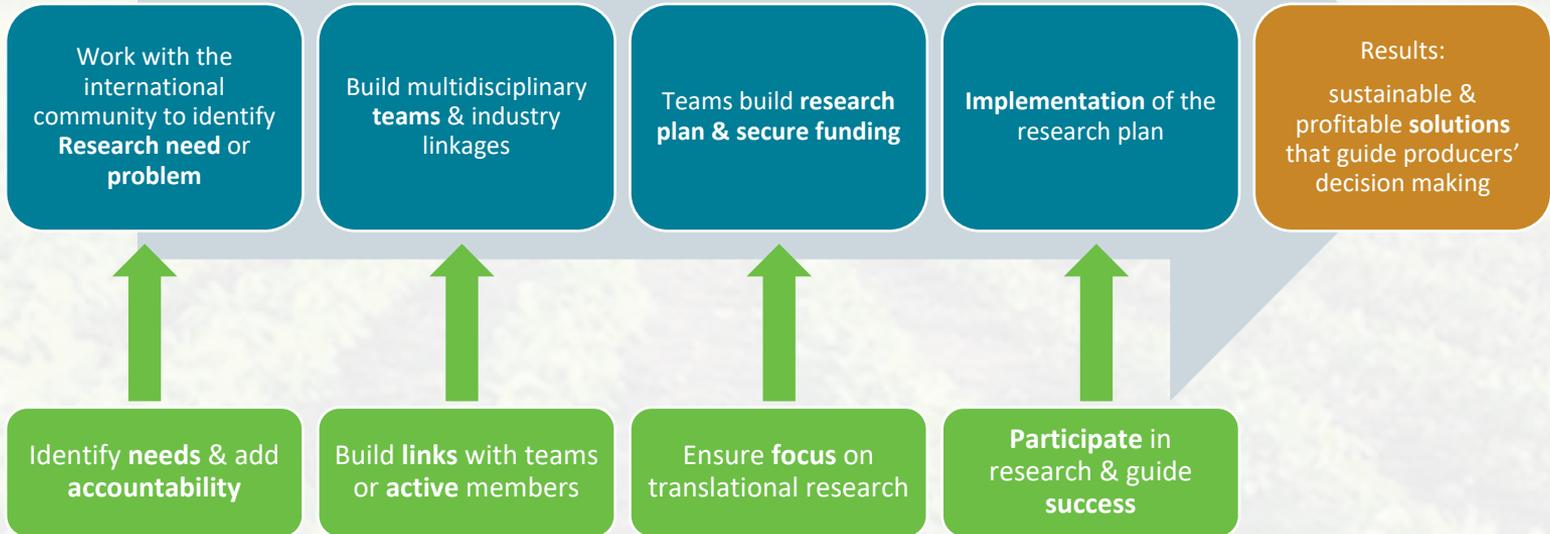
**Controlled Environment Agriculture**



**Soil Health**

# The Alliance in Action

## *Translating Research Outcomes into Results*



## Industry Sponsor Participation



# Phytobiomes Alliance Sponsors





**SAVE THE DATE**



# INTERNATIONAL PHYTOBIOMES CONFERENCE 2026

**3-5 NOVEMBER**

**Niagara-on-the-Lake,  
Ontario, Canada**

[www.phytobiomesconference.org](http://www.phytobiomesconference.org)



# Alliance Staff: Get in Touch with Us

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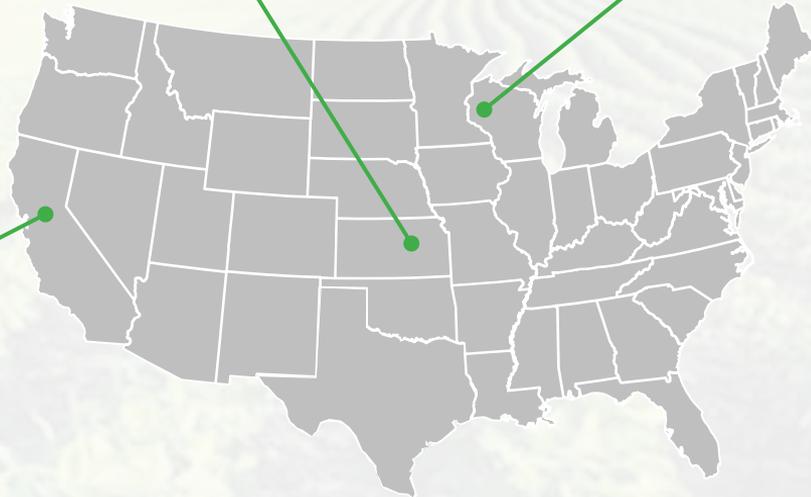
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