



Joel Williams

Pre-Conference Day — Tuesday February 18, 2020

9:00 am to 5:00 pm

Use the Power of Your Soil to Optimize Crop Performance

Agenda

Session 1: Living Soils and Organic Carbon: The Centerpiece of Soil Health

- Plant health and photosynthesis as a driver of soil health.
- Functions, roles and symbiosis of life in the soil ecosystem.
- Understanding the interactions of the soil food web toward nutrient supply and crop production.
- New findings on and critical role of root exudates in plant-microbe communication and soil carbon sequestration.
- Nutrient cycling, availability and extraction by plants and microbes.
- Influence of soil life on the soil environment - aggregation, water infiltration, compaction mitigation.
- Ecological succession and fungal/bacterial balance.
- Soil carbon dynamics and strategies to increase soil organic matter.

Session 2: Soils in Transition: Improving Input Efficiencies and Unlocking Soil Nutrients

- Leveraging existing soil fertility and optimising purchased inputs.
- Nutrient behaviour in soil: nutrient synergies/antagonisms.
- Understanding total, exchangeable, soluble nutrient pools.
- The role of carbon-input complexes in improving input efficiency and protecting soil life.
- Foliar applications – tips for a top response.
- The seed microbiome and seed treatments.
- Carbon based inputs and biostimulants.

Session 3: Integrated Pest Management: Understanding Plant Health and Resilience

- Management of disease, insects and weed pressure as an integrated nutritional/biological approach to plant health.
- Understanding the microbial and nutritional drivers of plant immunity.
- Disease management /novel approaches to plant immune responses – biostimulants, bioinoculants, compost extracts.
- Plant health and nitrogen management – not enough or too much?
- Weeds as indicators, fungal/bacterial ratio, detoxifying herbicides.

Session 4: Redesign to Regenerate: Transitioning Toward Agroecology

- Transitioning production systems using the ESR framework (efficiency, substitution, redesign).
- Agroecology – integrating ecology into agronomy.
- Increasing plant species diversity and benefits on soil properties.
- From Uniformity to Diversity: root and rhizosphere interactions in cover crops, intercropping and multi-species pastures.
- Plant diversity as a key driver of soil microbiomes, ecosystem services and landscape function.
- Where to next? Knowledge intensive vs input intensive production systems.

Sponsors:

