



The Nexus Between Carbon, Nitrogen and Biodiversity - Day Program

8.30am **Registration**

9:00am - 9.15am **Louise Edmonds, CEO Carbon Sync**
Introduction - The Big Picture – what is driving change in Agriculture?

- COP 15 Global Biodiversity Framework
- TNFD and TCFD
- Carbon Border Adjustment Mechanisms
- Scope 3 emissions reductions targets and pledges, SEC ruling
- International examples of change

9.15 - 10.00am **Joel Williams, Integrated Soils - Lecture 1 – Soil Carbon Cycling**

- Building soil carbon with shoots, roots and exudates
- Roots Not Shoots: Where did root biomass go?
- Understanding the microbial contribution to building SOM
- Soil biology: impacts of management and inputs on soil life

10.00 - 10.20am **Morning Tea**

10.20 – 11.00am **Joel Williams, Integrated Soils - Lecture 2 – Nitrogen: Friend or Foe?**

- Nitrogen in the soil: build or burn soil organic matter?
- Impacts of excess or imbalanced N on plant health
- Plant stress and protein breakdown: does plant immunity/pest and disease resistance suffer?
- Nutritional drivers of plant immunity

11.00 – 11.30am **Joel Williams, Integrated Soils - Farmer Case Study**

- Farmer transition case study, what was the process involved in reducing nitrogen use?
- What challenges did they encounter?
- How long did it take?
- What was the impact on yield, and pest and disease pressure?
- What was the economic outcome? Profit per hectare?

11.30 – 12.15pm **Kevin Elmy, Cover Crops Canada – Biodiversity - Managing Soil Armour, and Post-harvest Green**

- Functional plant groups
- Grass, legume, broadleaf
- Carbon: Nitrogen ratio of residues – managing soil armour
- Relay cover cropping

12.15 – 12.45pm **Kevin Elmy, Cover Crops Canada – Biodiversity - Cover Crops Catch Crops and Green Manures – Farmer Case Study**

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- What challenges did they encounter?
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12.45 – 1.45pm **Lunch**

1.45 – 2.30pm **Joel Williams, Integrated Soils – Lecture 3 – Designing with Diversity**

- Monocultures and mixtures
- Companion and intercropping
- Redesigning production systems with legumes – carbon, nitrogen, biodiversity

2.30 – 3:00pm **Local Farmer Case Study – Nick and Lucy Kelly of Newdegate**

3.00 – 4:00pm **Panel discussion with the audience**