

# SOIL AMELIORATION & CROP SEEDING MACHINERY INNOVATION WORKSHOP

KIMBA | WEDNESDAY 7 JUNE, 9.00am - 2.30pm



You are invited to contribute to a GRDC funded project which is exploring current practices around soil amelioration and constraint management, and guiding future investments in to innovative engineering solutions.

## ABOUT THE PROJECT

We are part of a GRDC project which is working to inform the basis for future industry research and development investments into innovative machinery solutions for the improvement of:

- Soil amelioration via deep tillage considering high capacity and versatile solutions for subsoil ripping, topsoil inclusion, profile mixing and sublayer delving technologies.
- Processes to deliver organic matter into poorly structured subsoils and opportunities linked to farm-grown biomass.
- Seeder functions to improve the reliability of crop establishment in marginal soil moisture conditions including water repellent sands.

Ultimately, we are working to improve the design and efficiency of tillage-based soil amelioration machinery and crop seeding technologies to better suit Australian soil and climatic conditions. Our goal is to identify priorities and develop recommendations for investments into innovative technologies which are tailored to each region and solve issues specific to soil type, rainfall and farming system.

Come and share your ideas on which machinery innovation research should be prioritised !

These workshops will explore gaps and opportunities in machinery innovation for soil amelioration and crop establishment.

## Discussion topics will cover:

- Effective and efficient soil tillage technologies
- Improved seeder functions and crop establishment
- Organic matter delivery into subsoils
- Optimising soil/machine interactions via computer simulations

## Facilitated sessions will explore:

- What machinery innovations should be prioritised to improve efficiency, versatility and power requirements in soil amelioration?
- How can we best integrate the use of farm-grown biomass for subsoil amelioration?
- What machinery innovation would make a difference to more reliably establish crops under limited moisture?
- How should we best address existing machinery performance bottlenecks?

## WHERE AND WHEN

### VENUE:

Eyre Business  
38 High Street  
KIMBA SA 5641

**WHEN:** Wednesday 7 June 2023

**TIME:** 9:00am - 2:30pm

Registration is essential.

## AGENDA

TIME	TITLE	PRESENTER
9.00am	<b>Welcome &amp; Open</b> About the GRDC funded project   Our vision for tillage and seeder machinery innovations   Expectations from workshop	Paul Meibusch Managing Director Colere Group
9.20am	<b>Overview of local experiences and research: Soil amelioration and crop establishment practices</b> What we see in the region (baseline and best practice)   What machinery type is used   What are their known strengths and limitations?	Brett Masters Research Agronomist EPAG Research
10.00am	<b>Grower experiences: Successes and challenges with machinery adoption</b>	
10.15am	<b>MORNING TEA</b>	
10.30am	<b>Soil amelioration, farm biomass incorporation and crop seeding: Machinery baselines and new technology opportunities</b> - Soil tillage technologies - Understanding soil/machine interactions with computer simulations - Seeder function, technologies and crop establishment - Organic matter delivery into poorly structured subsoils - Innovative technologies	Dr Jack Desbiolles, Senior Agricultural Research Engineer UniSA  Dr Chris Saunders, Agricultural R&D Engineer, UniSA
<b>FACILITATED SESSIONS</b>		
11.30am	<b>THEME 1: SOIL AMELIORATION BY DEEP TILLAGE   Setting the scene, gaps &amp; opportunities</b> 1. What soil amelioration involving deep tillage are you currently doing and why? If none: why not? what is holding you back? ( <i>consider: financial, crop productivity gap, technology &amp; machinery, research evidence, lack of understanding best practice in relation to soil constraints, risks</i> ) 2. What are the key factors that helped you make a decision to invest in this practice? ( <i>consider: financial, crop productivity gap, technology &amp; machinery, research evidence, understanding best practice in relation to soil constraints, risks</i> ) 3. What worked well with your approach? What did not work well? 4. What is your appetite to spend more on soil amelioration (\$/ha)? How does this vary with the longevity of response? 5. What deep tillage soil amelioration machinery innovation do you want to see in the future?	
12.15pm	<b>LUNCH</b>	
12.45pm	<b>THEME 2: INCORPORATION OF ORGANIC MATTER AND MANURE   Setting the scene, gaps &amp; opportunities</b> 1. What organic matter sources have you used in soil amelioration processes and why? ( <i>consider compost, manures, organic wastes, biochar, chaff, farm grown biomass, etc.</i> ) 2. What were the results / returns on investment / yield gains? What were cross-overs – both positive and negative - with other soil amelioration practices? 3. What critical factors need to be considered for successfully implementing these processes? ( <i>i.e. availability of product, return, soil type, research, logistics</i> ) 4. Where/how could farm-grown biomass fill a gap to help mainstream organic amendment-based soil amelioration? 5. What should a farm-grown biomass incorporation technology best look like? What do you want to see in the future?	
1.30pm	<b>THEME 3: CROP ESTABLISHMENT IN MARGINAL MOISTURE   Setting the scene, gaps &amp; opportunities</b> 1. What key farming system issues most challenge the success of crop establishment? ( <i>consider: soil, crop residue, herbicide residue, machinery, seeding issues such as seed placement, fertiliser separation, pre ems</i> ) ( <i>consider: cereals vs pulses vs canola</i> ) 2. What is the typical seeding machinery set up in this region? 3. What seeding machinery are YOU currently using and why? - What works well / what doesn't? - What do you aspire to be using and what would you want from it? (i.e. what do you need your system to do better) - What have you tried to improve crop establishment success? What were you aiming for? ( <i>e.g. speed of emergence, established plant number, plant vigour, establishment uniformity?...</i> ) 4. What constitutes best practice with crop establishment? 5. What machinery / technology innovations do you need to see in the future? What are the additional seeder functions you want?	
2.15pm	<b>Summary and where to from here?</b>	
2.30pm	<b>Day close</b>	

## REGISTRATION

**TO REGISTER CLICK HERE:**

<https://www.eventbrite.com.au/e/soil-amelioration-machinery-crop-seeding-technology-workshop-kimbatickets-594196707347>

*This is a free of charge workshop. Registration is essential.*

## FURTHER INFORMATION

**Belinda Cay**

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### **\*A note on participant safety**

With COVID still out and about in the community, we will ensure the event has any required safety practices in place.