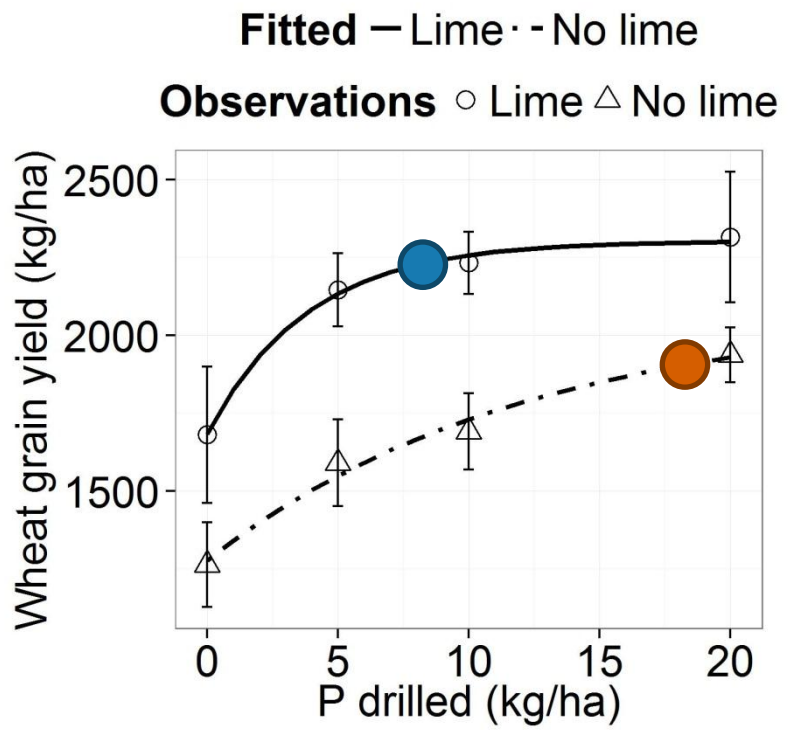




Shifting soil pH with lime requires a ^{small} shift in
nutrient management to maximize profit.

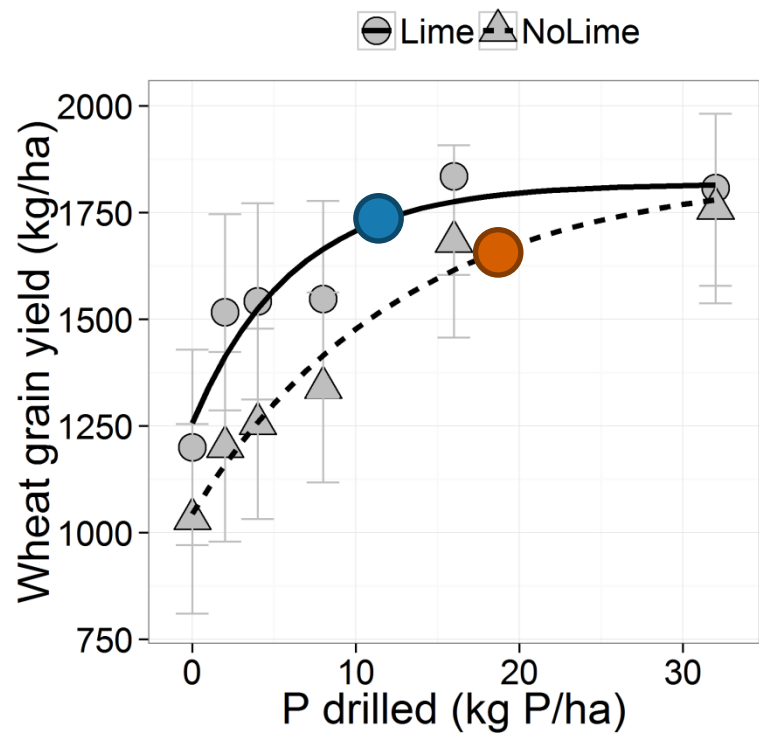
Craig Scanlan, Ross Brennan and Gavin
Sarre.

Grain yield and profit response to P: Wongan Hills 2012



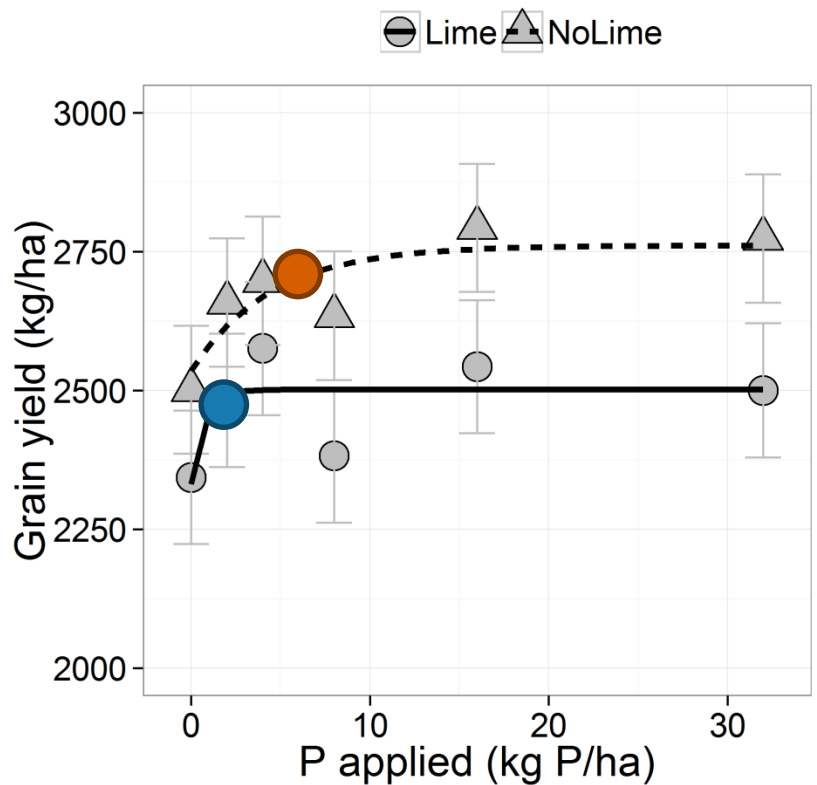
	Max. margin		
	pH _{Ca}	\$/ha	kg P/ha
Lime	6.0	507	9
No lime	4.6	395	19

Grain yield and profit response to P: Merredin 2014



	Max. margin		
	pH _{Ca}	\$/ha	kg P/ha
Lime	6.2	376	11
No lime	4.7	335	19

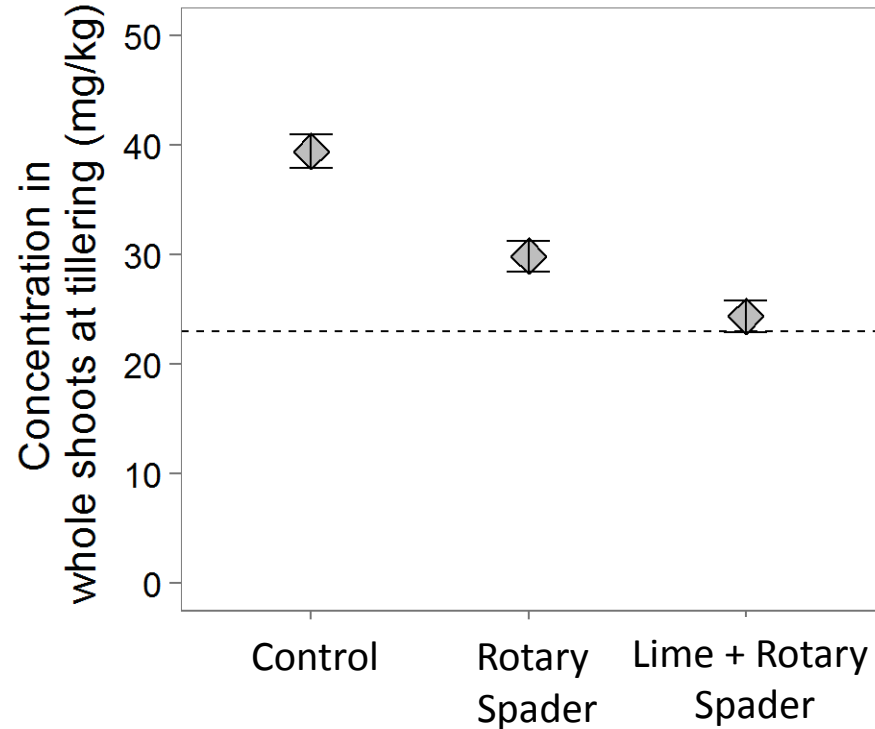
Grain yield and profit response to P: Wongan Hills 2014



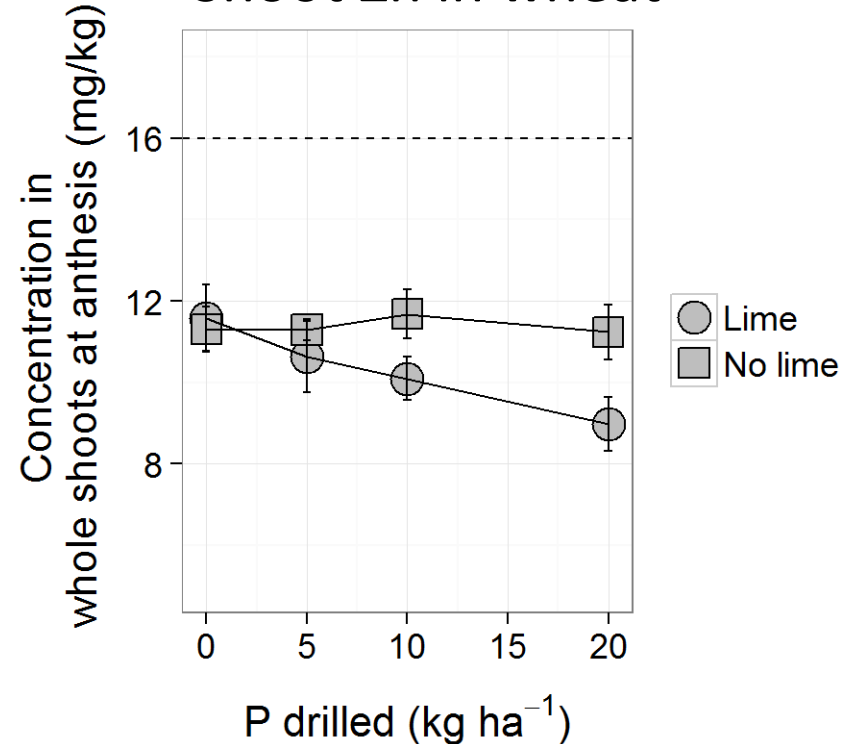
Max. margin			
	pH _{Ca}	\$/ha	kg P/ha
Lime	6.5	591	2
No lime	4.7	627	6

Lime application has lowered Mn and Zn in wheat.

Shoot Mn in wheat



Shoot Zn in wheat



A checklist for monitoring wheat after increasing soil pH with lime.

Wheat YEB at mid-boot

- Manganese > 12 mg/kg
 - Zinc > 16 mg/kg
 - Copper > 2 mg/kg
 - Potassium > 1.8%
-



Inversion of water repellent soils – throwing nutrients, pH and lime into the mix.

Craig Scanlan, Steve Davies, Damian Priest
and Gavin Sarre.



Should soil mixing guide my choice of implement ?



Burial of surface
layer

Seedbed

Mixing

Loosening soil

Measuring soil mixing required a new method.

1



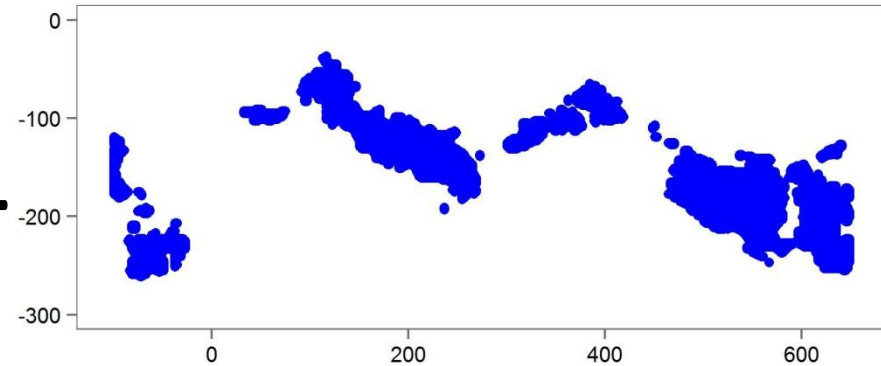
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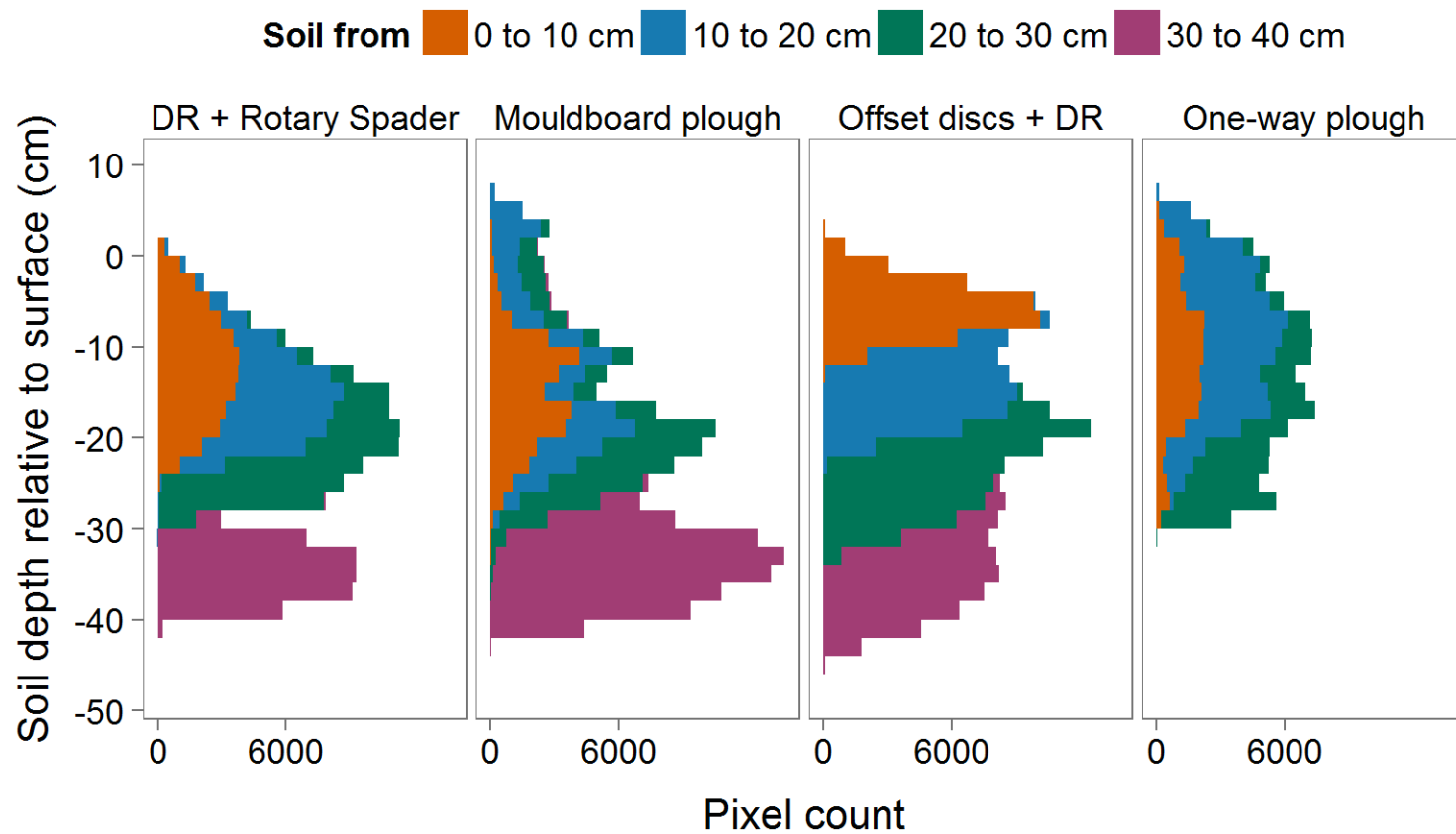
3



4



Redistribution of soil by tillage implements



Colour blobs can be used to measure mixing efficiency.

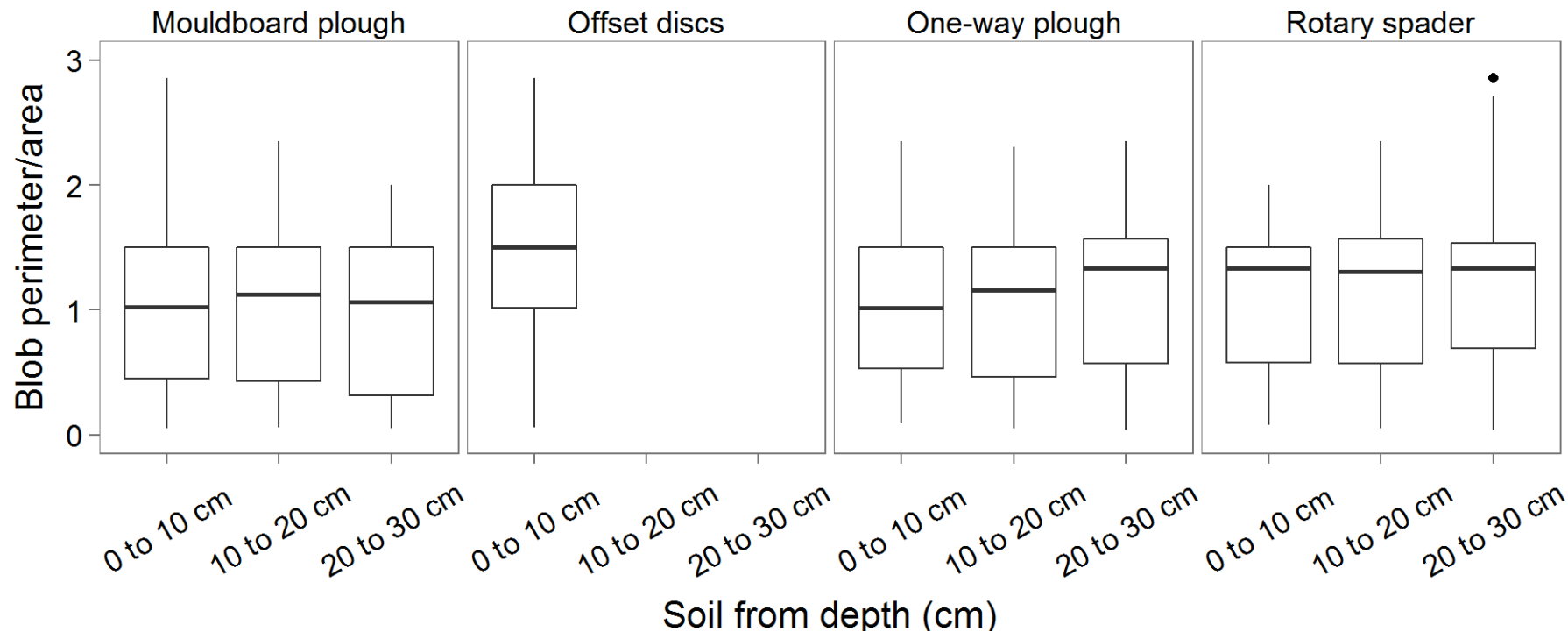


Low mixing efficiency

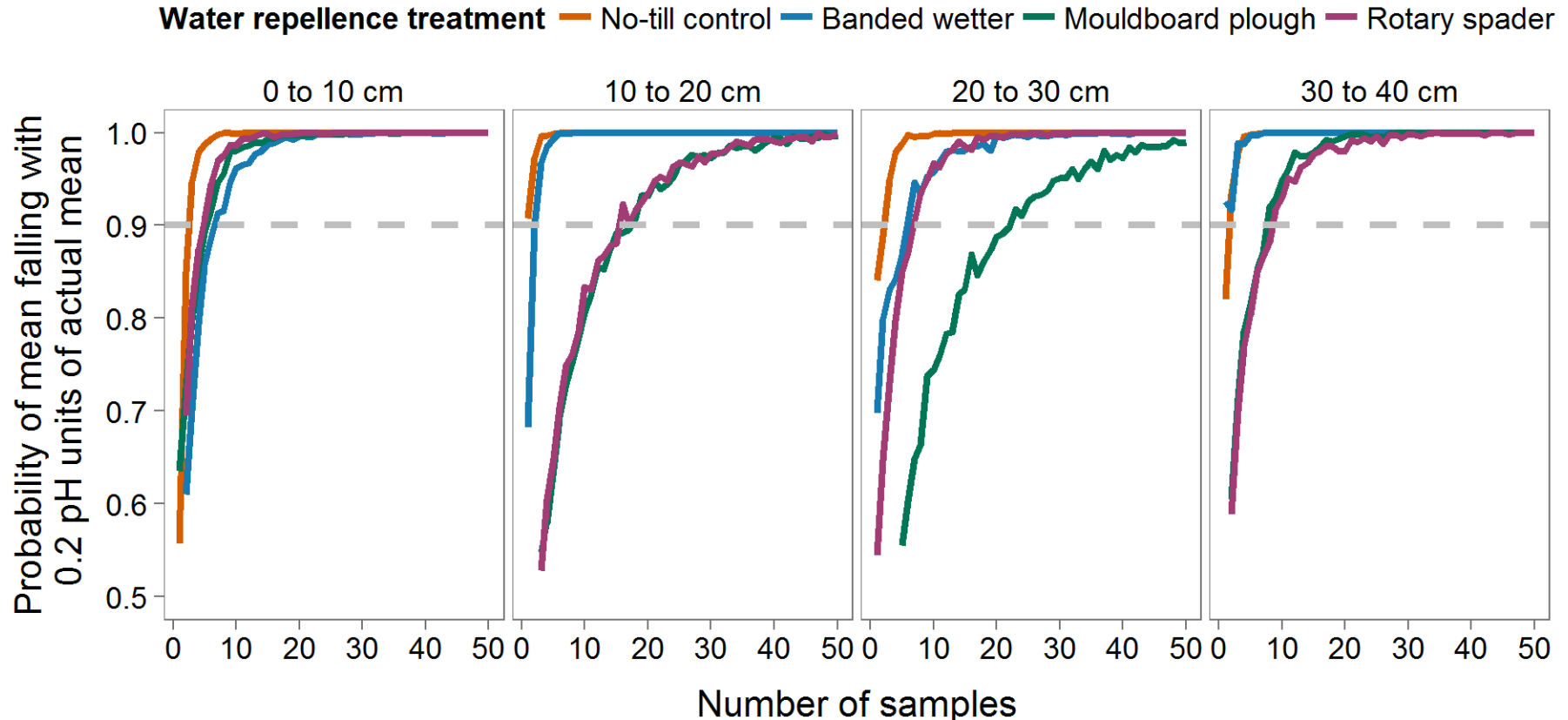


High mixing efficiency

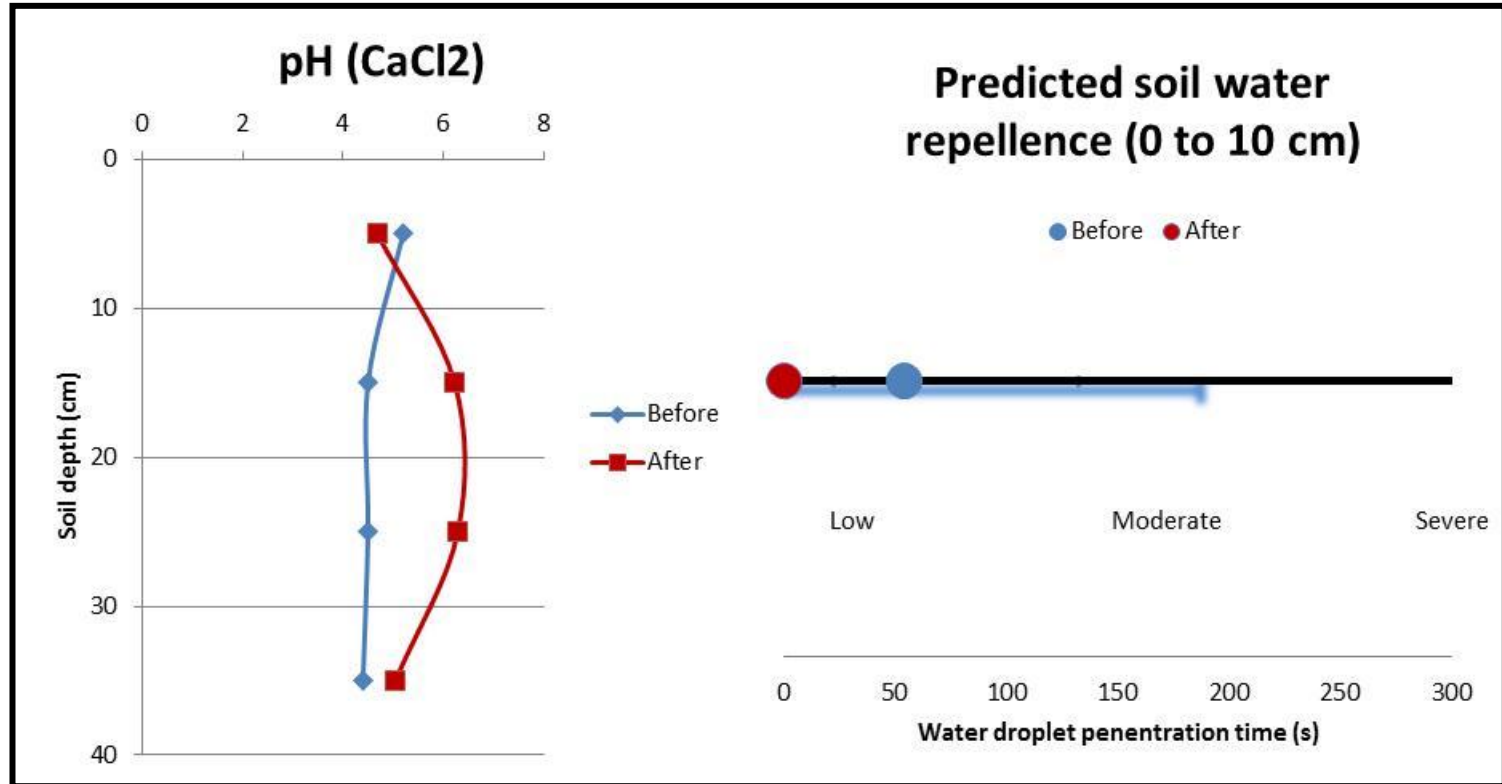
Inverted soils were equally mixed (patchy).



More samples are required for a reliable pH mean after soil inversion.



A model to predict soil profiles after inversion and lime or clay application.



Thanks to....



WEST MIDLANDS
GROUP



Department of
Agriculture and Food



GRDC Grains Research &
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Your GRDC working with you

GRDC Projects DAW00222 & DAW00204



Adjust P rate for yield potential and monitor nutrient levels at boot stage after shifting soil pH with lime.

Choose your implement based on cost, seedbed and burial of the surface layer. They all mix soil about the same.