Optimised Canola Profitability (CSP00187)

Update and outcomes from 2018

Julianne Lilley

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Optimising canola profitability (2014-2019)

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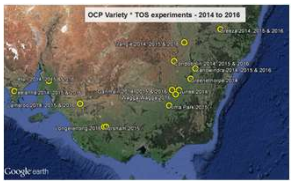

Rohan Brill
Don McCaffrey
NSWDPI
SARDI
Andrew Ware

John Kirkegaard
Jeremy Whish
CSIRO
Therese McBeath
Julianne Lilley

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Key project objectives/outcomes

- Understand the physiology that underpins agronomy

in order to…

- Increase yield, oil, profitability; manage risk

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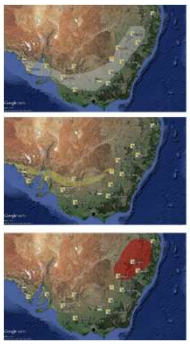
Strategies



- Early sowing systems (low/medium rainfall)
  - Co-located Pathology experiments
- Risk management – low input (low rainfall)
- Harvest management (north)
  - Up to date agronomic advice throughout

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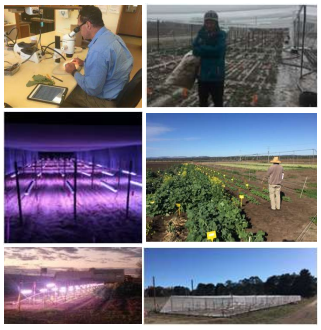
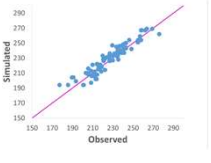
Understanding phenology drivers





Whish, Lilley, Pitt, Moroni

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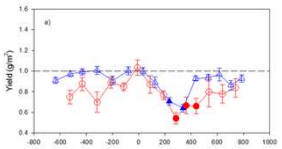
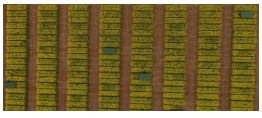
Identified the critical period for canola





Field Crops Research

The critical period for yield and quality determination in canola (*Brassica napus* L.)

John A. Kirkegaard[a,*], Julianne M. Lilley[a], Rohan D. Brill[b], Andrew H. Ware[c], Christine K. Walela[a]

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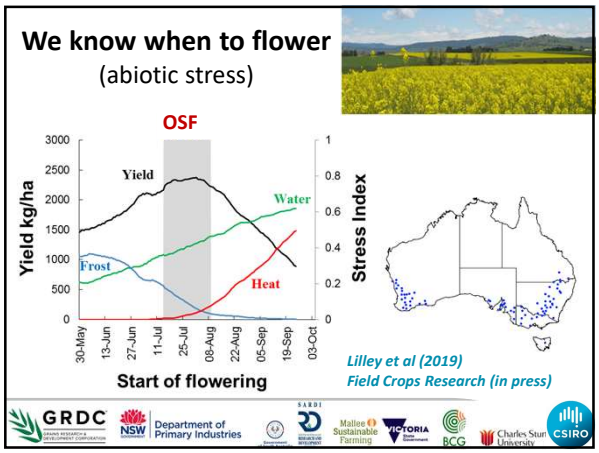

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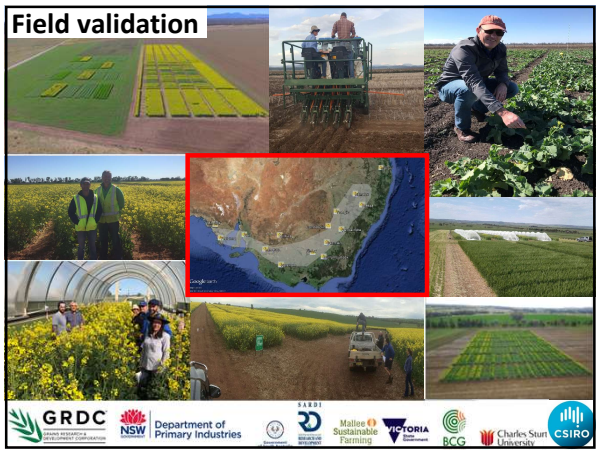

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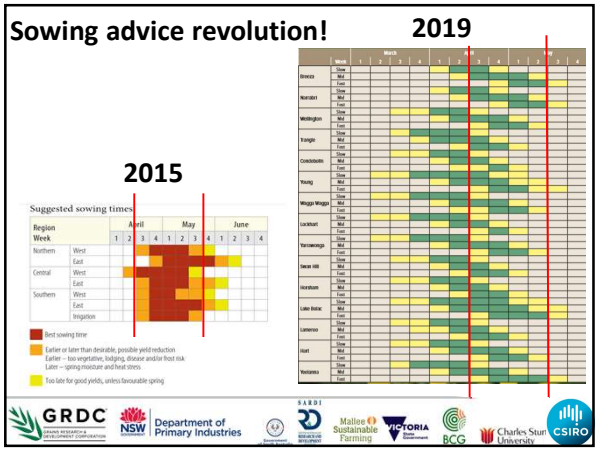

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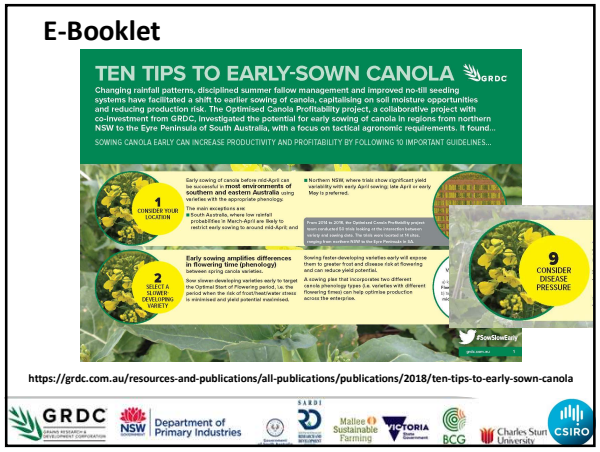

https://grdc.com.au/resources-and-publications/all-publications/publications/2018/ten-tips-to-early-sown-canola

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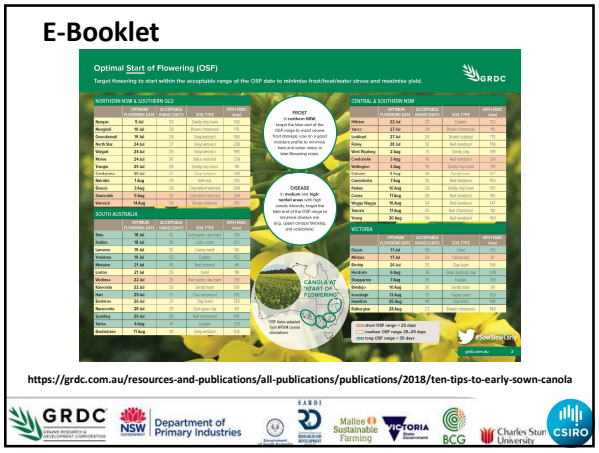

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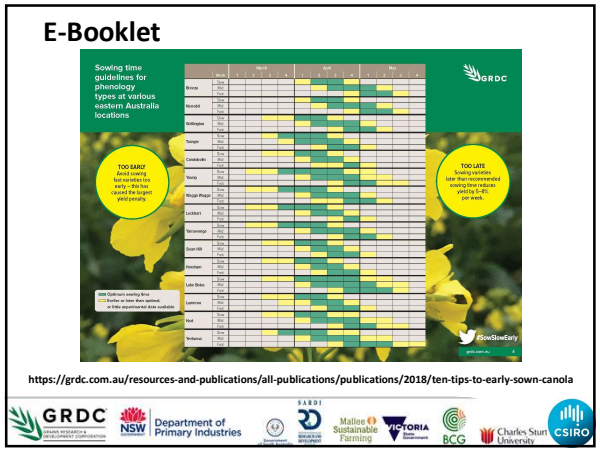

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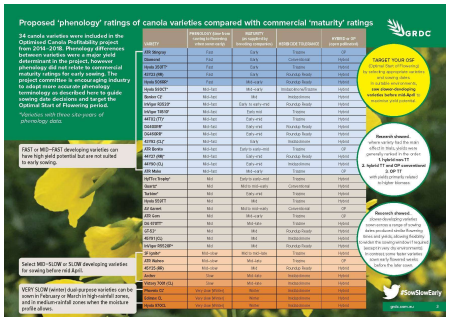
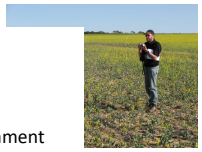
E-Booklet



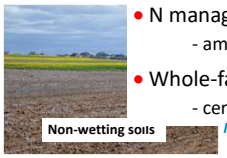
https://grdc.com.au/resources-and-publications/all-publications/publications/2018/ten-tips-to-early-sown-canola

Managing risk in low rainfall zone

- Hybrid *vs* OP
  - only > 1.5 t/ha
- Time of sowing
  - ensure establishment



- N management
  - amount, timing, variable
- Whole-farm context
  - cereal disease and weeds

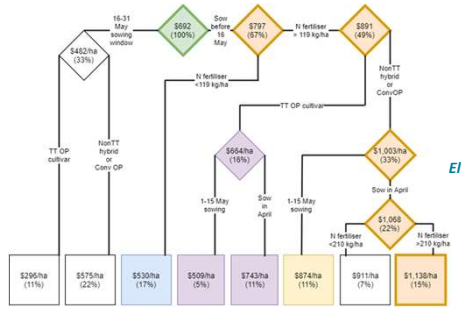


Non-wetting soils

McBeath et al., Unpublished

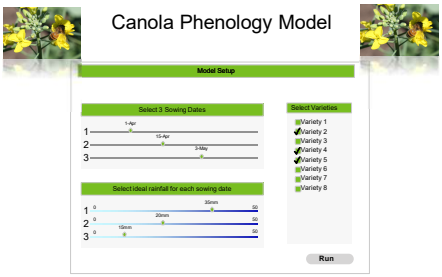
Grain or hay?

Profit-risk analysis

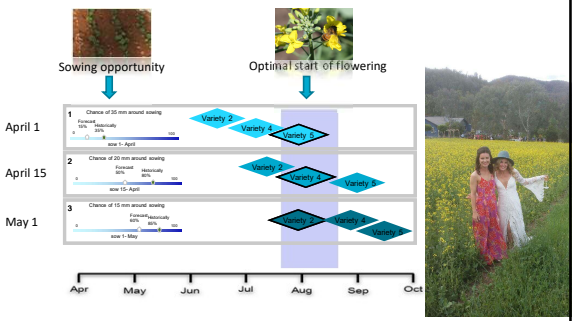


Elizabeth Meier CSIRO

Canola Phenology Model



Matching sowing date and optimal flowering period



So what's it all been worth?

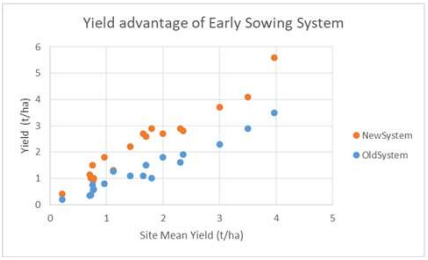
"Old" system in 2014

- Sow in late April or early May
- Use best available OP – TT
- Use moderate N rate (Decile 3 to 5)

"New" system in 2019

- Sow from early April to flower in OSF (which we now know)
- Use suitable variety, and best hybrid
- Use robust N rate (Decile 7 to 9)
- Manage as per E-Booklet

Here's what it was worth in 2018 (at 18 sites)



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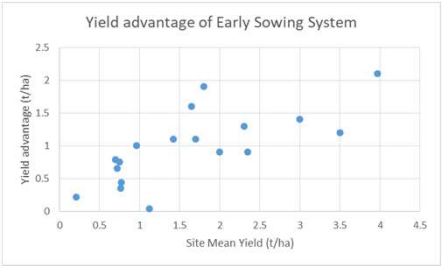
Here's what it was worth in 2018



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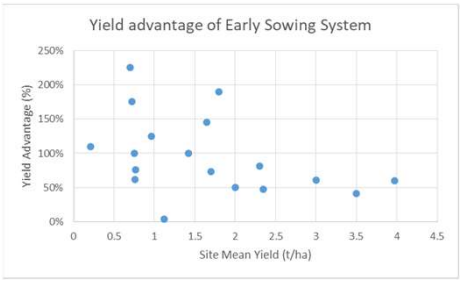
And as a %....



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A whole new paradigm for canola

"We now finish (rather than start) sowing canola at the end of April and its worth about 0.3 t/ha on average to our clients….."

Greg Condon, Consultant Junee

(manages around 10,000 ha of canola)

"Early-sown hybrids with good plant stands and robust N rates have routinely performed well across a range of environments despite a fear they would "crash"

The OCP Team, 2019

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New phenology genetics project (2019-22)

Develop knowledge of genes which underpin phenology
- vernalisation and daylength responses

- Diversity panels
  - >200 Australian and >150 international genotypes
- Field, glasshouse, cabinet experiments
- Genomic, transcriptomic sequence data
- International collaboration

Improved predictive tools (models and markers)

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What's next

Roadshows
- **Moree** 3 September, **Wagga Wagga** 5 September
- **Birchip** 17 September, **Adelaide** 19 September

Continuing work – variation request for 2019
- Phenology experiments
- Phenology app - validation
- Soil water capture and value of stored water in early sowing systems
- Nitrogen use efficiency
- Windrow timing – sensor techniques
- Profit / risk analysis

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This work is a component of the 'Optimised Canola Profitability' project (CSP00187), a collaboration between, CSIRO, NSW DPI and GRDC, in partnership with SARDI, CSU, MSF and BCG.
Thank you
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