Integrated control of establishment pests in canola: an Australian perspective

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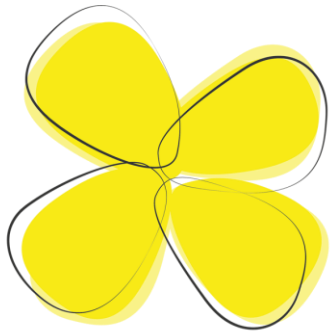

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IPM - little changes can make a big difference

Invertebrate communities are changing. Hoffmann et al. Aust. J. of Exp Ag. 48: 1481-1493

- in response to conservation agriculture
- in response to intensification – over use of pesticides

Attributing damage – what are the true costs. Hill et. al PeerJ 5:e4179

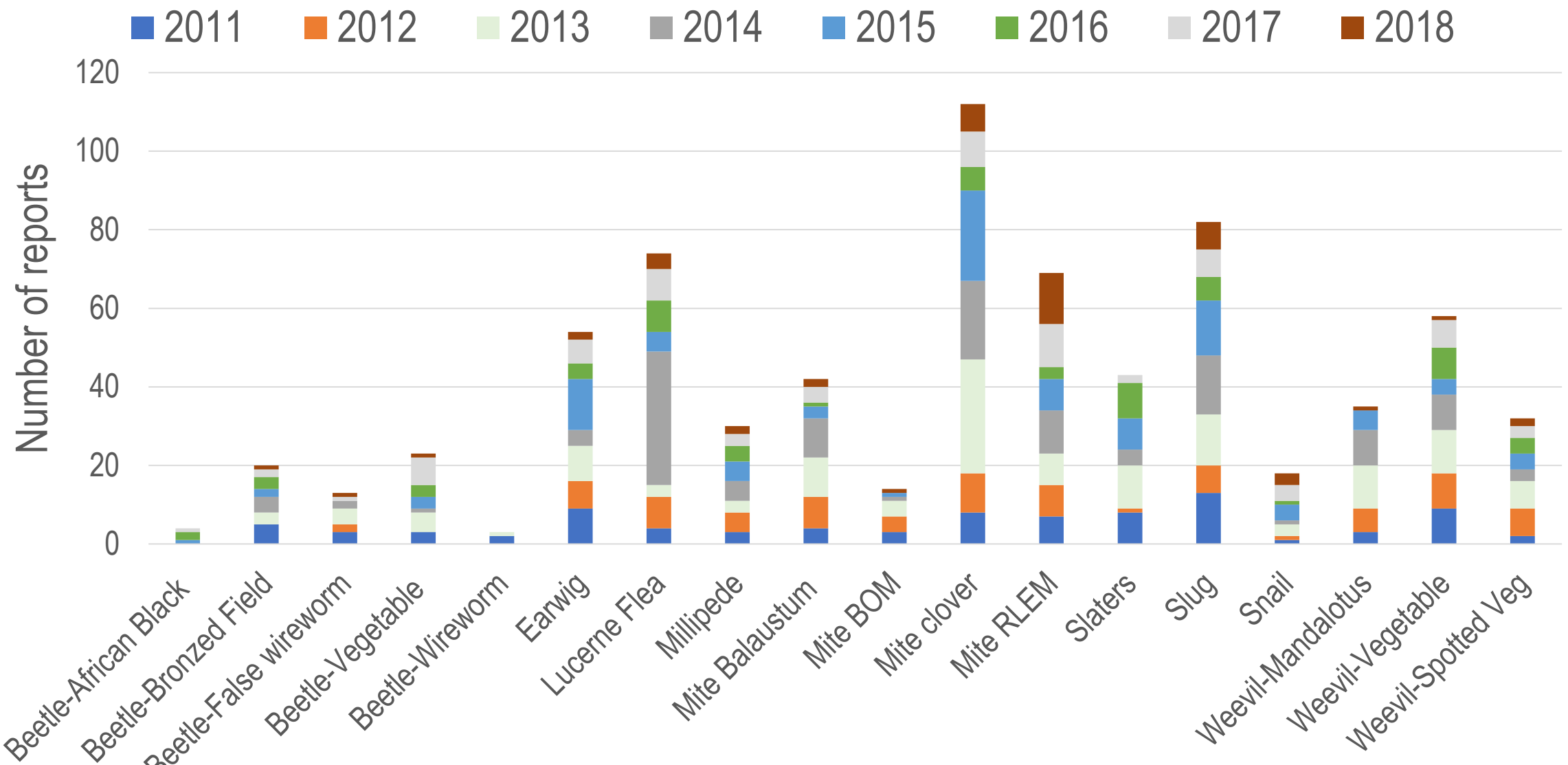
Understand the pest and the context controls are applied.

Management changes are improving crop establishment.

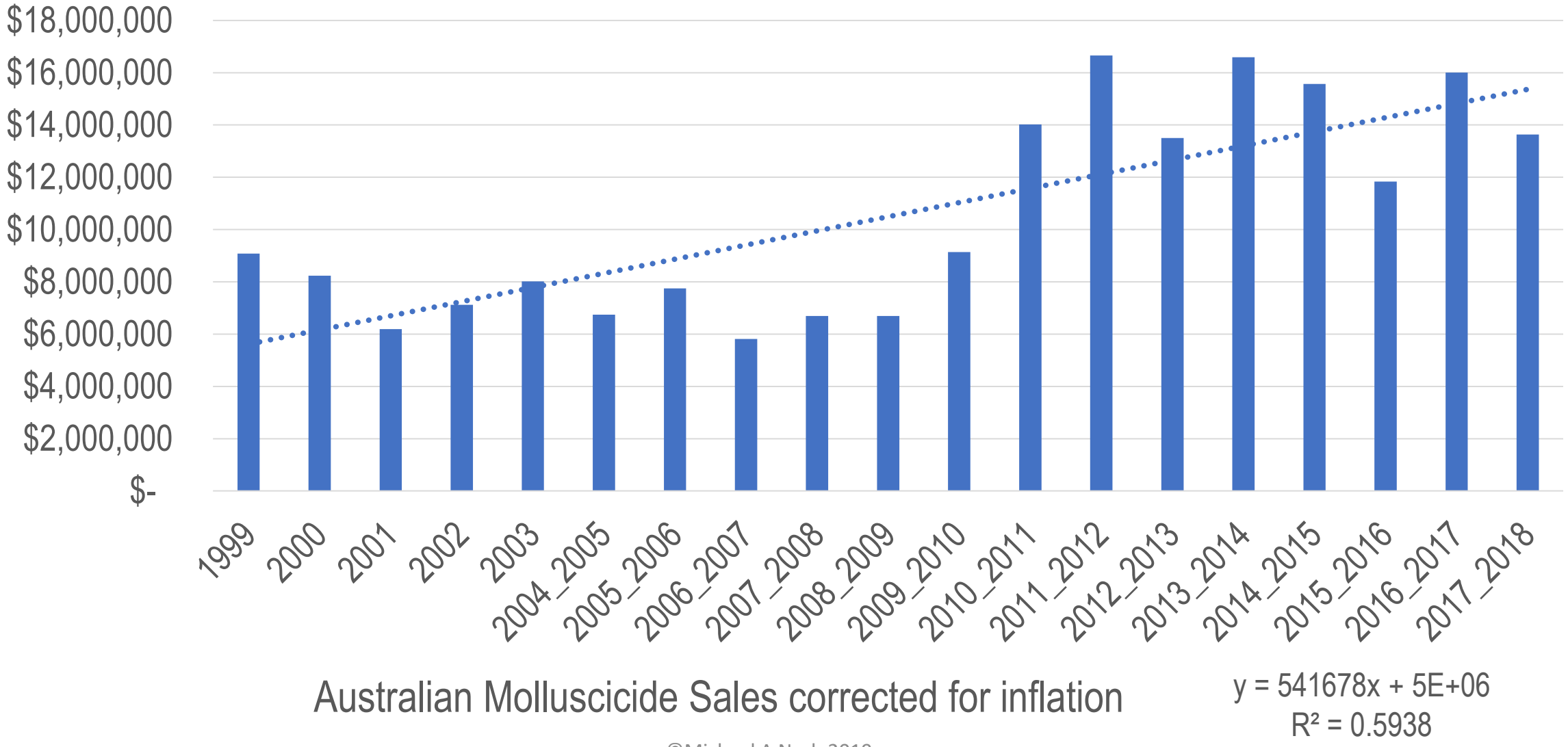
- increase usage of crop protectants
- sow earlier
- increase seedling vigour
- improved plant nutrition

Climate drives responses. Nash and Hoffman Crop Protection 42: 289-304

Pest reports for Australian canola at establishment



Increased molluscicide usage - $0.5 million/yr



Monitoring – 21st century

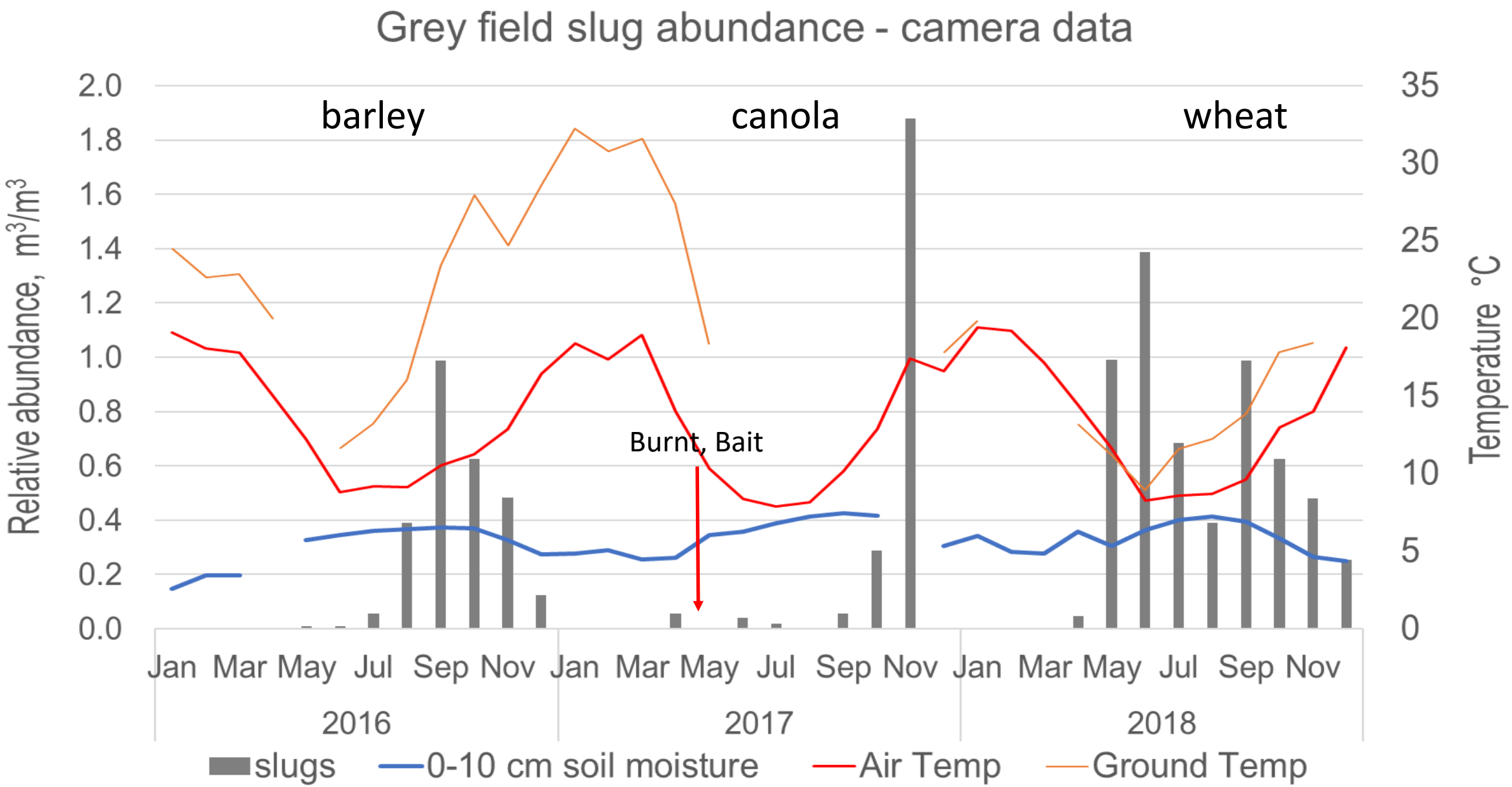
Microclimate Sensors:

- Temp & RH (ground)
- Soil Temp
- Soil moisture
- Barometric pressure

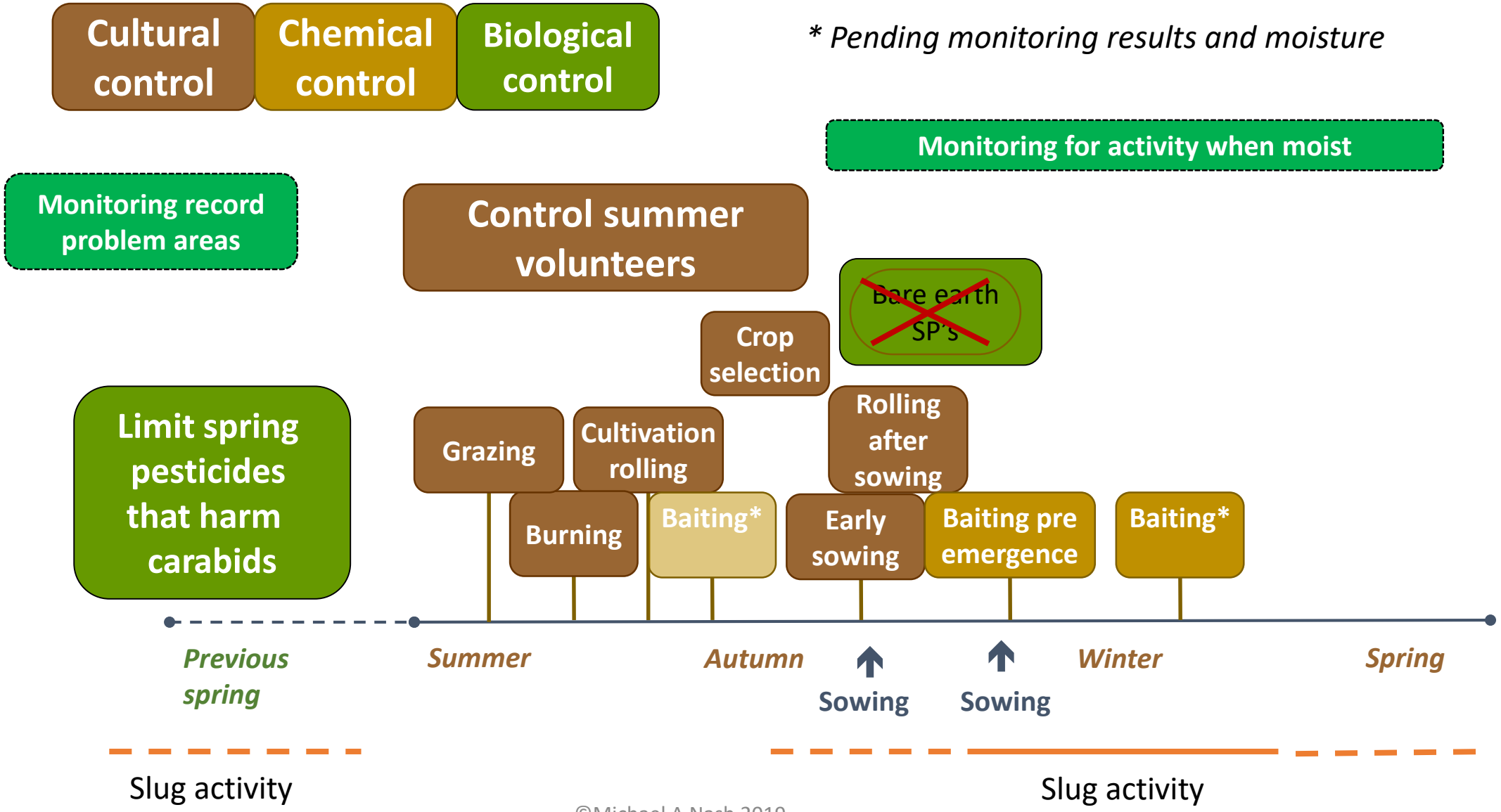
Australian Government
Department of Agriculture and Water Resources

GRDC
Grains Research & Development Corporation
Your GRDC working with you

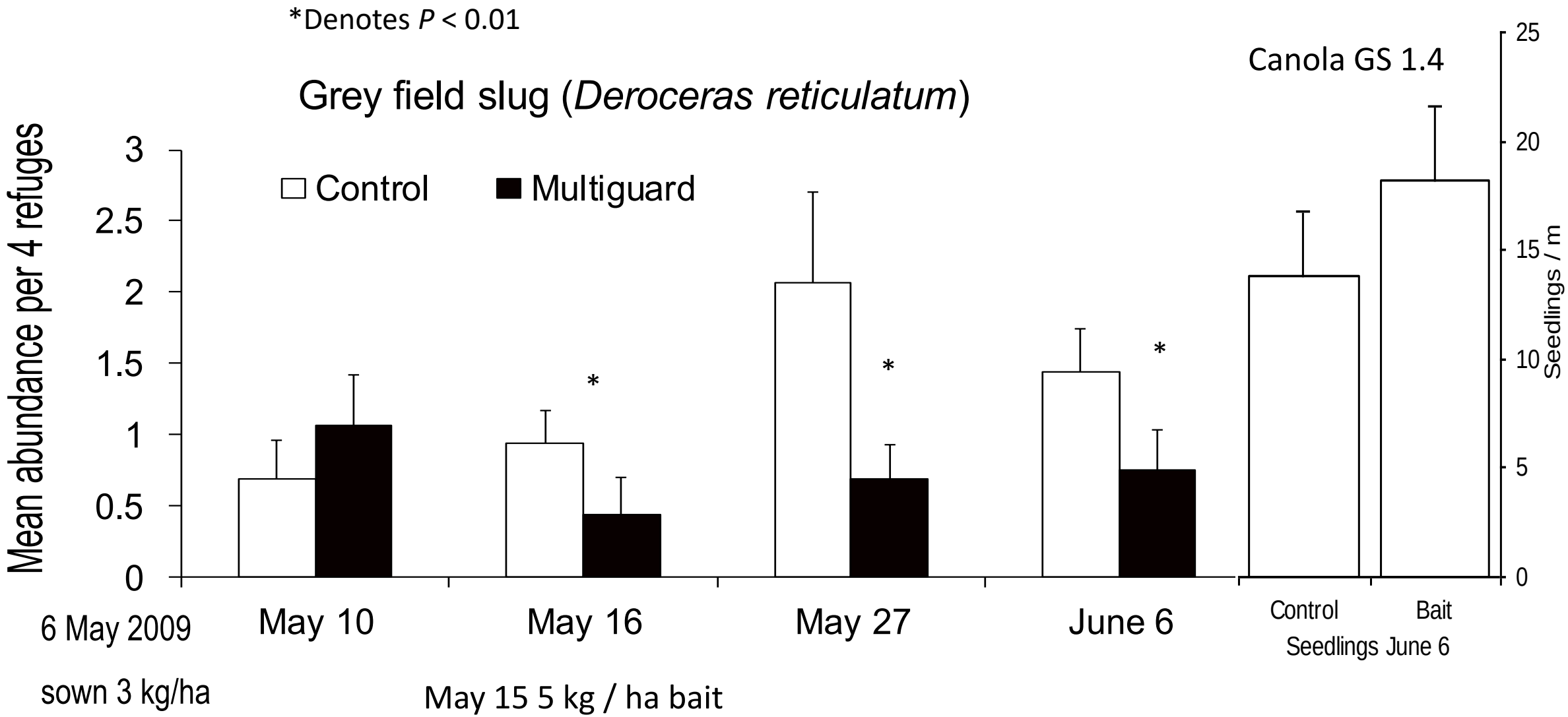
Your GRDC working with you



Decision timeline for slugs



Establish canola before slugs become active



GRDC
ONLINE FARM TRIALS

GRDC
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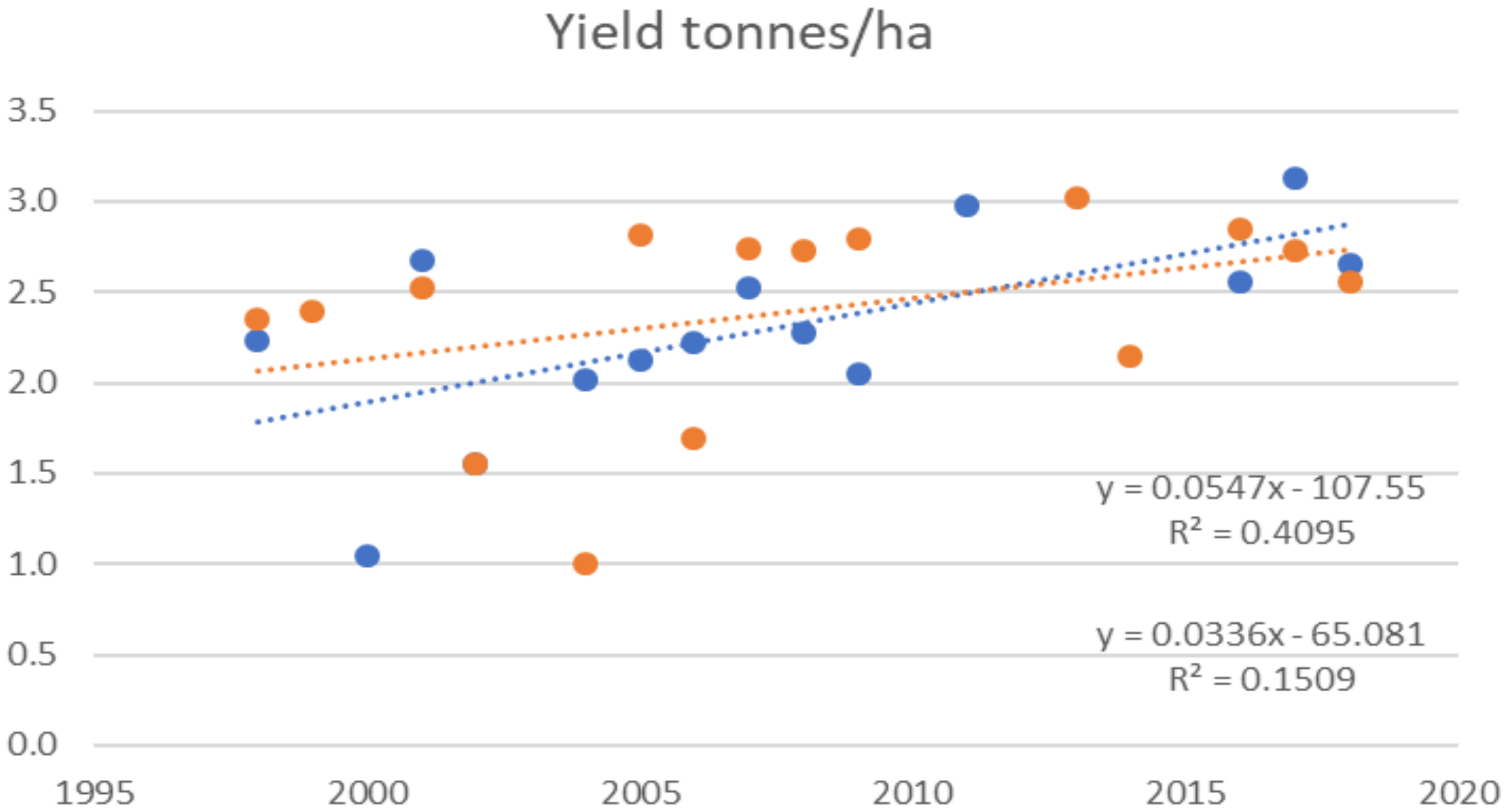
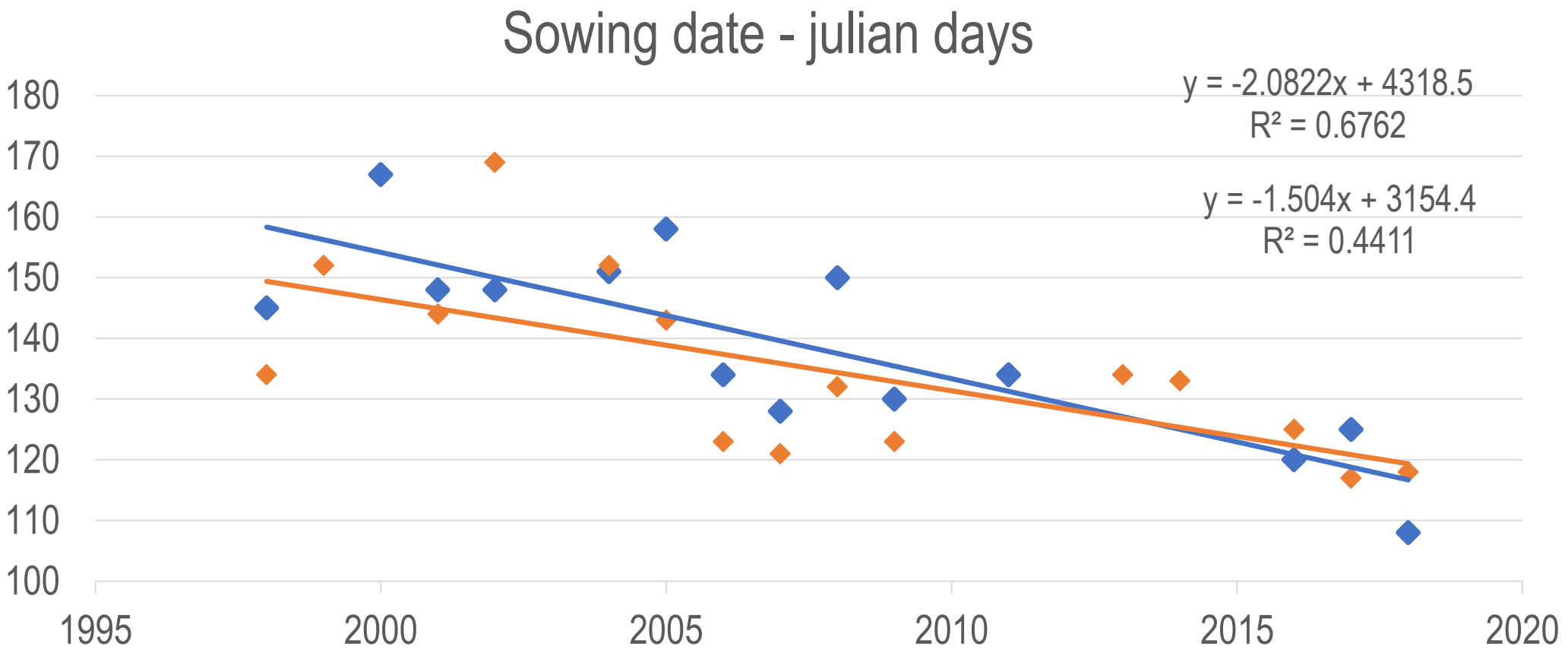


Pinnacle 2.20 t/ha

ATR Wahoo 2.63 t/ha

Date of sowing is 1 month earlier



Hypothesis: improved canola “vigour” will reduce plant losses from herbivorous pests

OP TT variety graded (>2mm) vs. ungraded seed treated with FIPRONIL (2 mg/kg) and FLUQUINCONAZOLE (3.34 mg/kg) in microcosms with two snail conical snail densities.

Results: TBA

The 1 percenters that add up to better “vigour”

- new cultivars – longer season, seedling vigour, Roundup Ready
- grade for larger TT OP seed – increases biomass Harker Can. J. Plant Sci. 95: 1–8
- reduce stubble to increase light interception and reduce damping off etc.
- time of sowing – mid April into warm soils i.e. > 15 °C
- improved seedbed with modern seeders – i.e. depth control etc.
- micro-nutrients with seed & higher rates of N & P placed below the seed
- avoid herbicides & seed treatments that reduce seedling vigour
  - replace FLUQUINCONAZOLE with PYDIFLUMETOFEN

How does this apply to other pests? Discussion

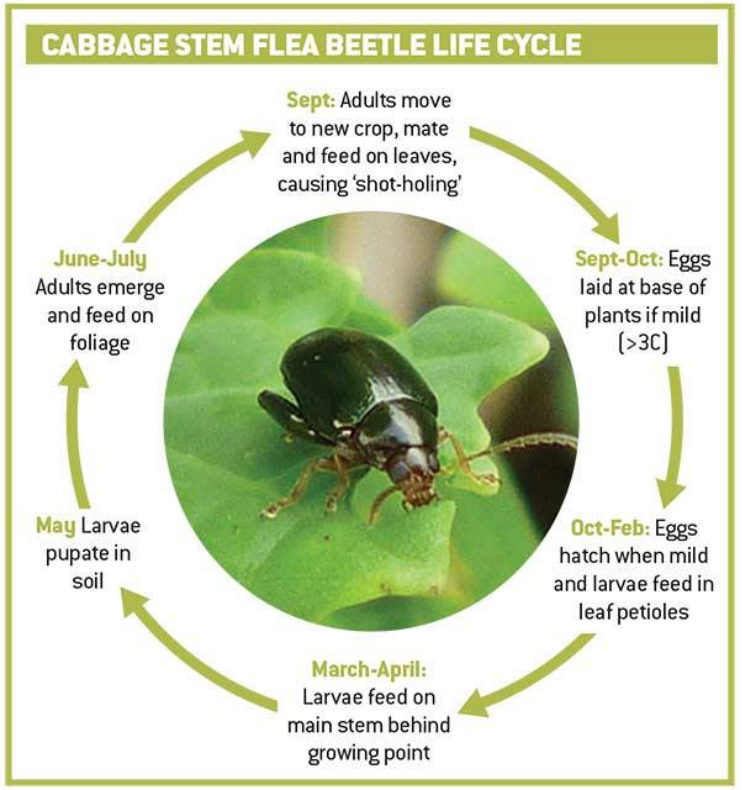
Cabbage stem flea beetle

(*Psylliodes chrysocephala*)

More seedling “vigour” – difficult when dry

Change sowing time?

- ‘faster’ winter cultivars sown once < 16 °C
- spring cultivars
- border spray



https://www.fwi.co.uk/arable/tips-cut-flea-beetle-risk-oilseed-rape-autumn