The risks and yield potential of canola cultivars and time of sowing within the in the HRZ of SE Australia

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Your GRDC working with you

Department of Environment and Primary Industries
State Government Victoria

Winter canola yields 20% ⬆ than spring canola @ Hamilton

however

What is potential across the HRZ?

answered by modelling

Across different locations & seasons

- Considered different climates, soils, TOS
- 3 varieties (Hyola-50, CBI8802, Taurus)
- 50 growing seasons (1961-2010) with best TOS chosen for each point in landscape

Christy *et.al. (*2013). *Crop & Pasture Science* **64**, 901-913

Phenology of measured data

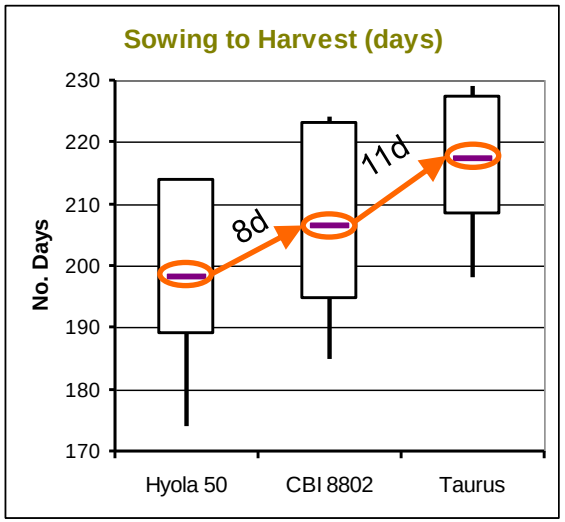
- 4 sites * 2 years * 3 canola varieties

  ≈ 30 crops

- mean, min, max, 20 & 80 percentile

- More days to maturity than

  Hyola (benchmark)



Phenology development differences

- Hyola & CBI similar to anthesis
- CBI 9 days longer to harvest
- Taurus much longer to anthesis
- Taurus shorter to harvest

Christy, *et al* 2013

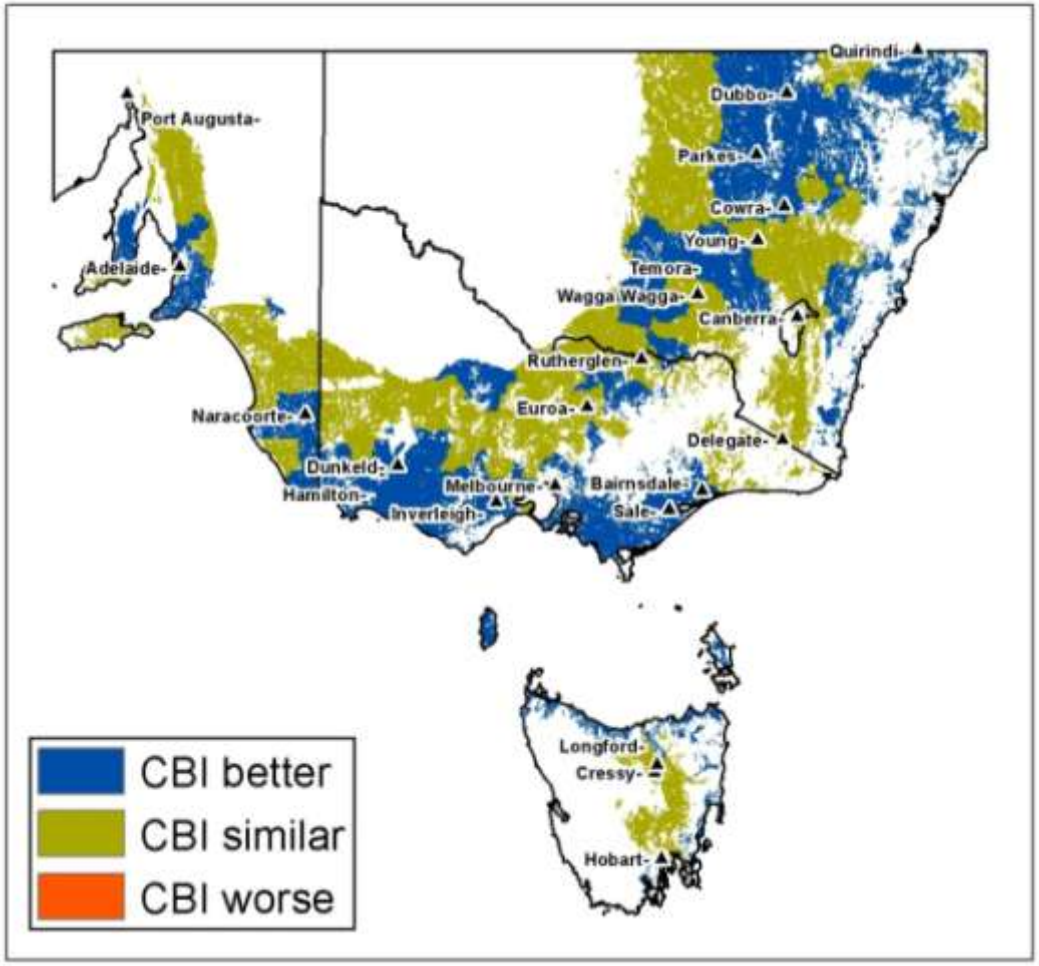
CBI8802 compared to Hyola50

CBI8802 was better than Hyola50 in 14 million ha.

Given 2009 Canola production this could result in an

- ➡ additional 39,392 tonnes of canola produced

@ $468/t (5 year average) ➡ $18.4 million



- CBI better: >105% yield Hyola
- CBI similar: 95% to 105% yield Hyola
- CBI worse: <95% yield Hyola

Christy, *et al* 2013

Taurus compared to Hyola50

Taurus was better than Hyola50 in 4.3million ha.

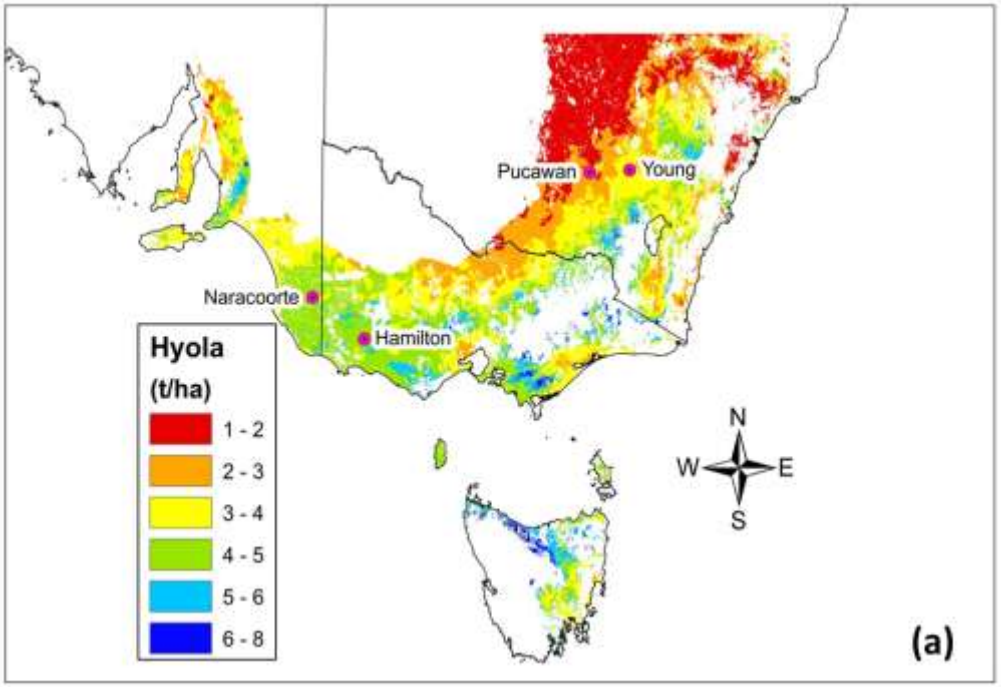
Given 2009 Canola production this could result in an

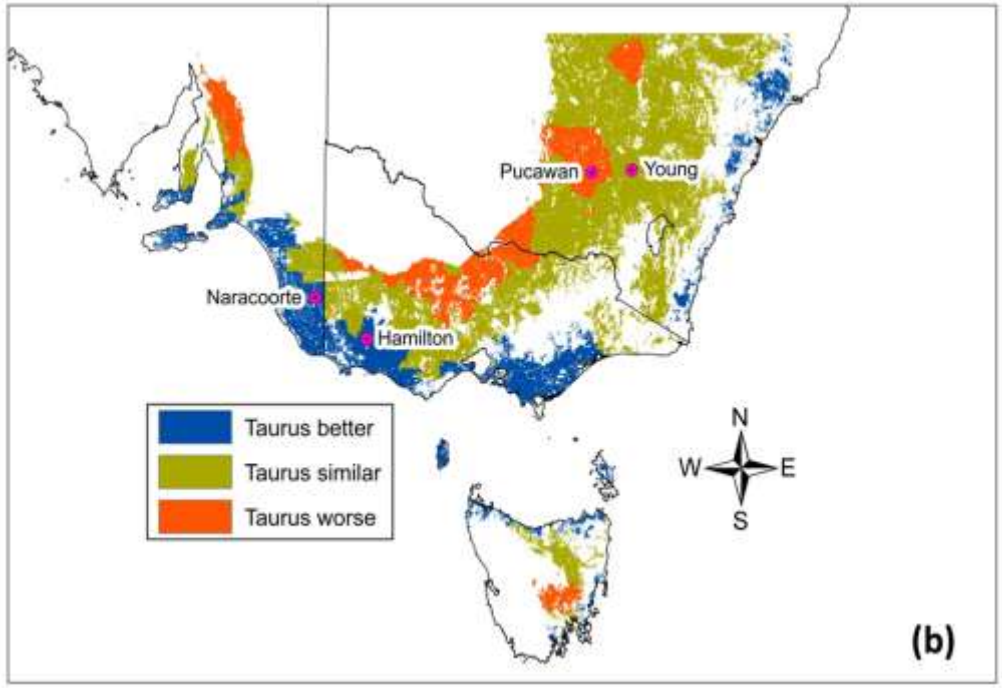
- ➡ additional 16,695 tonnes of canola produced

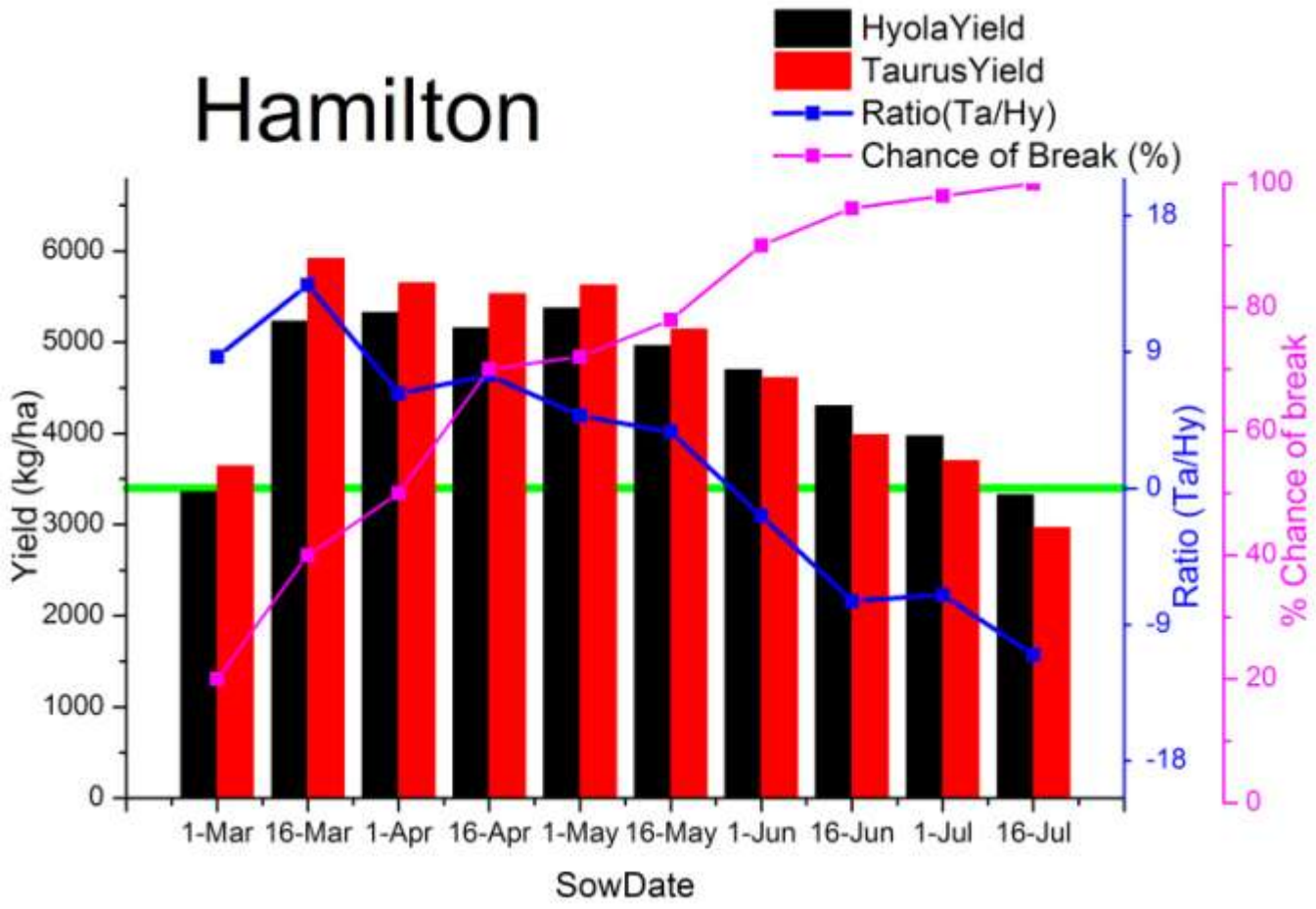
@ $468/t (5 year average) ➡ $7.8 million

- Taurus better: >105% yield Hyola
- Taurus similar: 95% to 105% yield Hyola
- Taurus worse: <95% yield Hyola

Christy, *et al* 2013







50 year yield

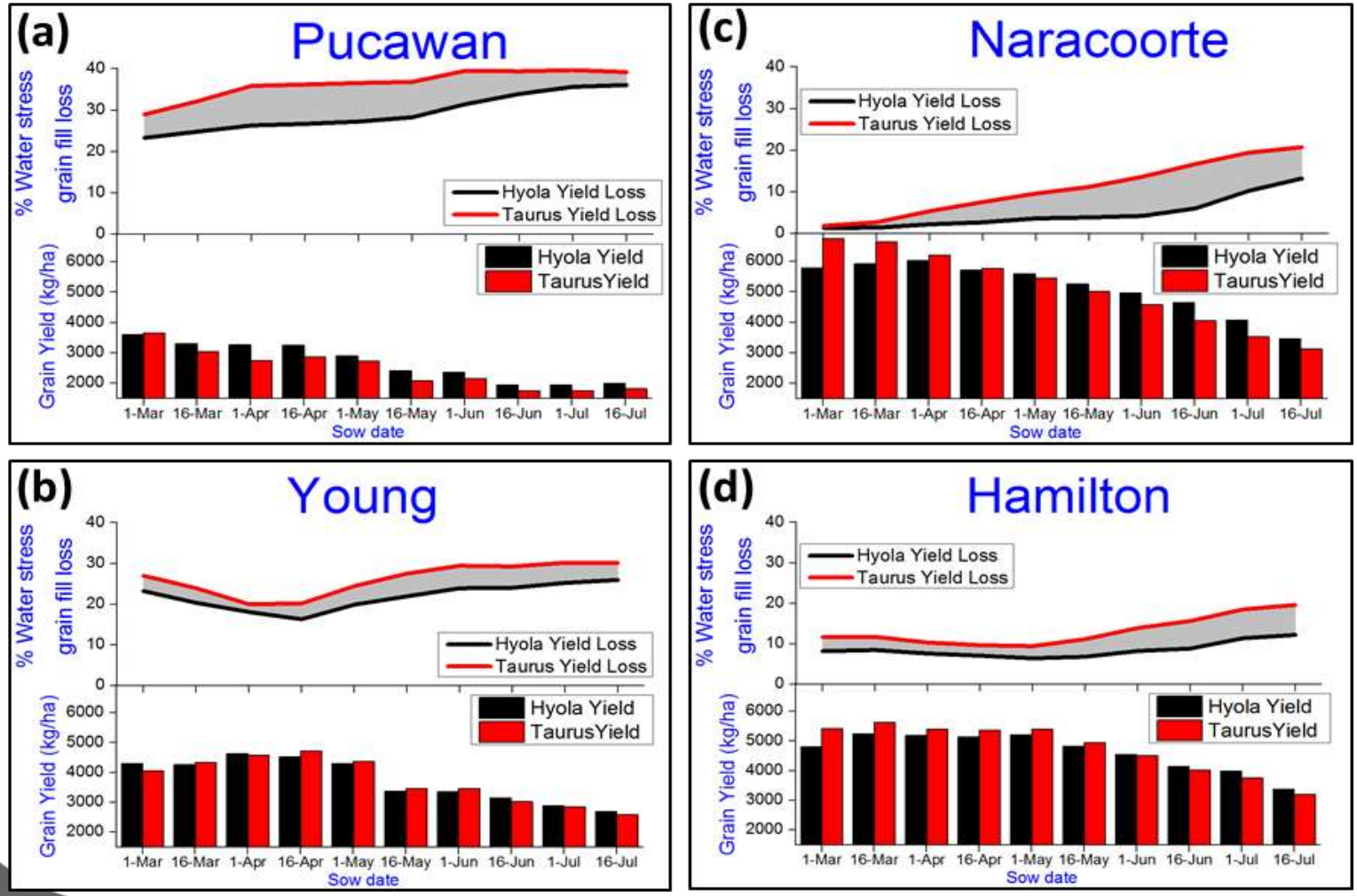
10 TOS

Hyola Vs Taurus

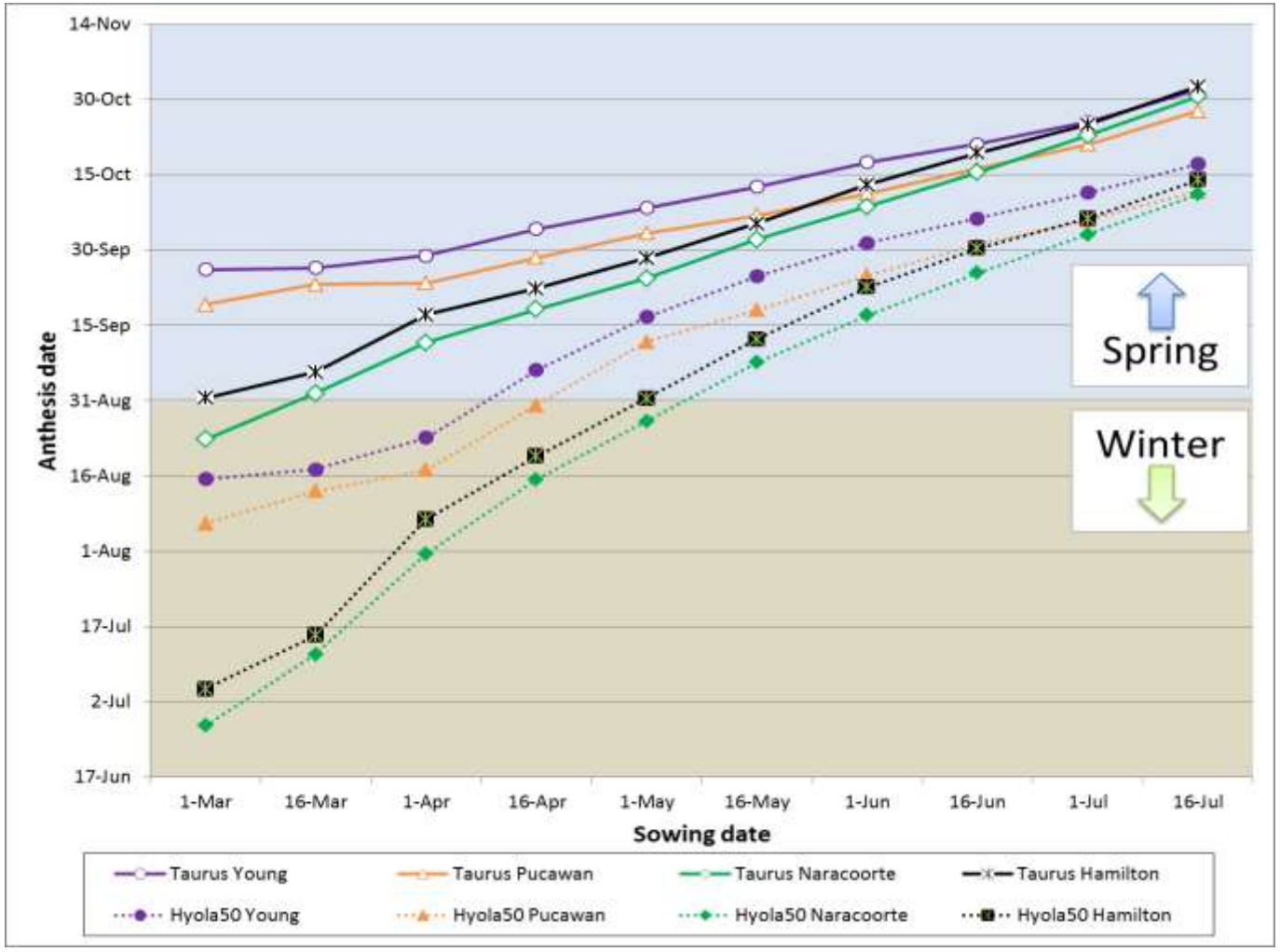
Where & when Taurus better

Does consider chance of break occurring

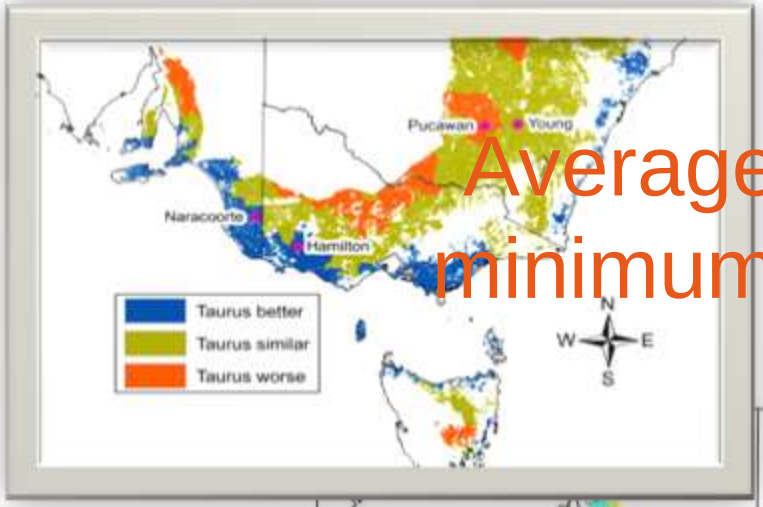
Grain yield & water stress per TOS

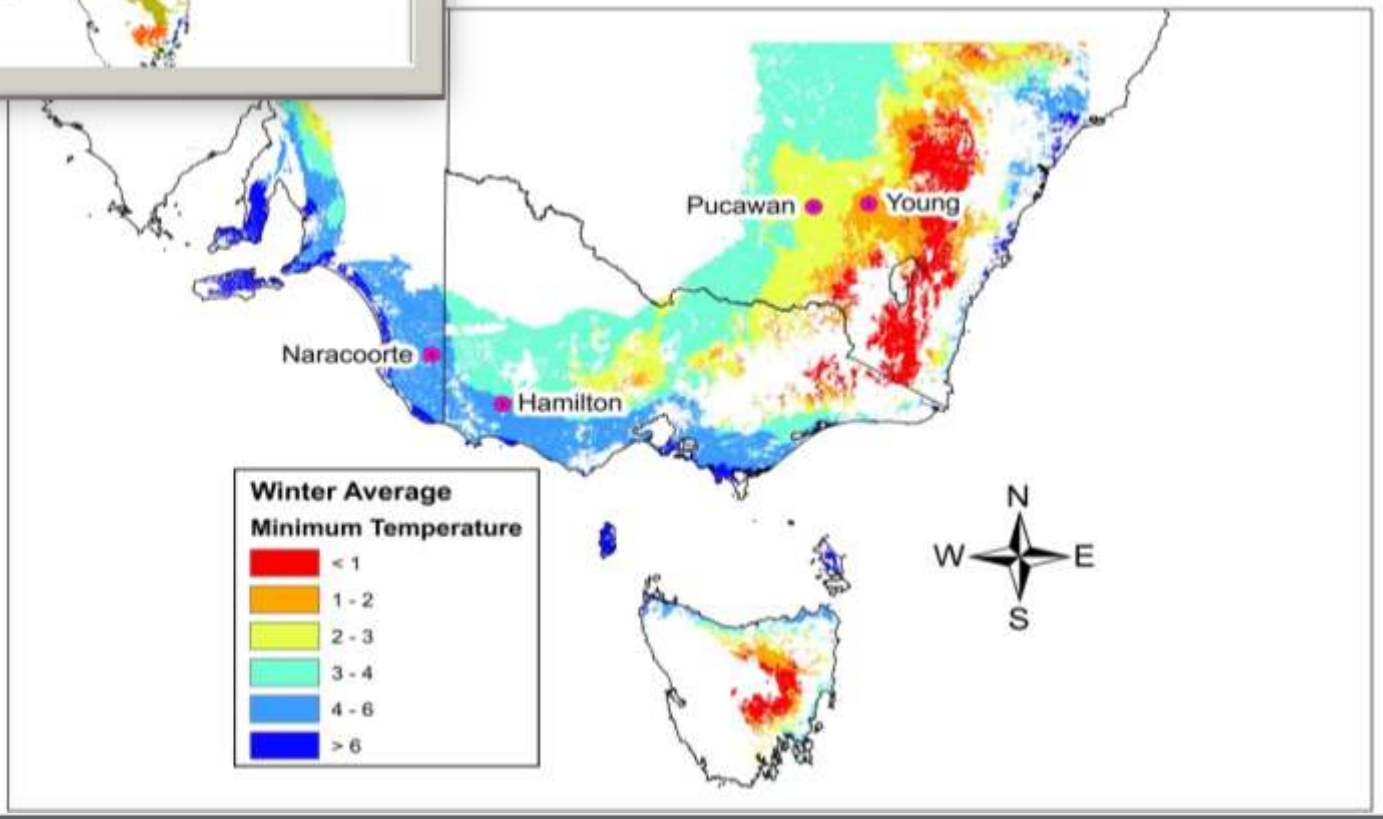


Time to anthesis with each TOS



Average daily winter minimum temperature





Key messages/conclusions

Considered variety, TOS, climate & seasonal variability, soils *etc* to determine target area for CBI & Taurus

Project quantified production benefit of new varieties (where, when, amount)

Regions of HRZ phenologically different hence cultivar target choice different

Acknowledgements & Thanks

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