Linking chickpea phenology & grain yield across Australian cultivars & environments

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MF Dreccer	CSIRO
R French	DPIRD

GRDC UOT1909-002RTX. Improving The Adaptation and Profitability Of High Value Pulses Across Australian Agroecological Zones.

Rationale

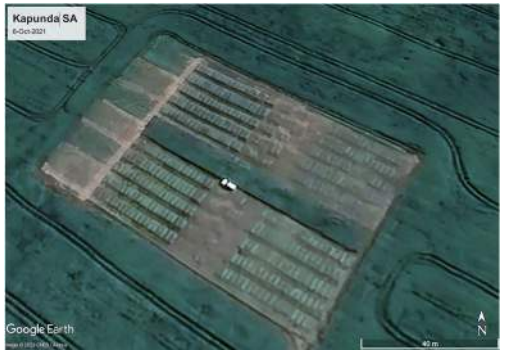
- Matching phenology to environment is critical for grain yield
- Critical period (300 °Cd ← Fl → 500 °Cd, Lake & Sadras 2014)

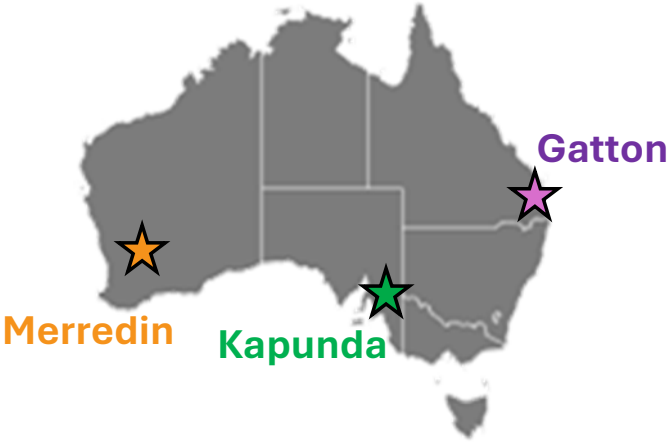
Aims

- G & E drivers of phenology
- Phenology & yield traits associations

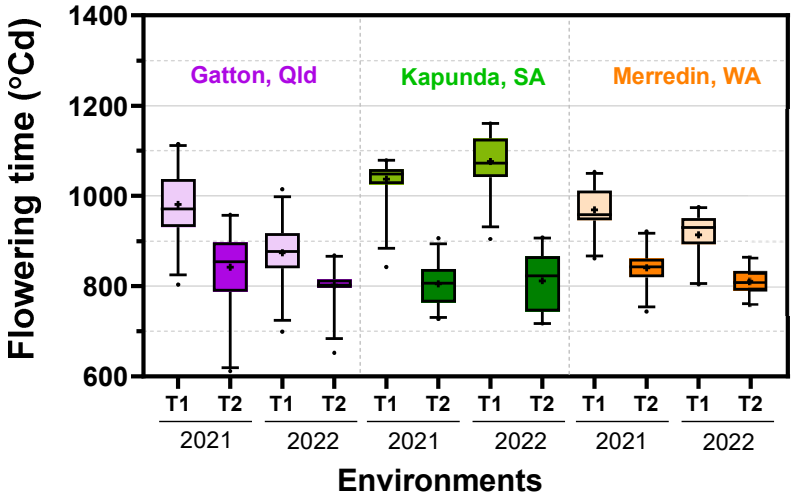
Methods

- MET in field conditions
- **E:** 12 environments
  - 3 sites (Gatton Qld, Kapunda SA, Merredin WA)
  - 2 seasons (2022 & 2023)
  - 2 sow dates (early & late)
- **G:** 24 cultivars genotypes (desi, kabuli)

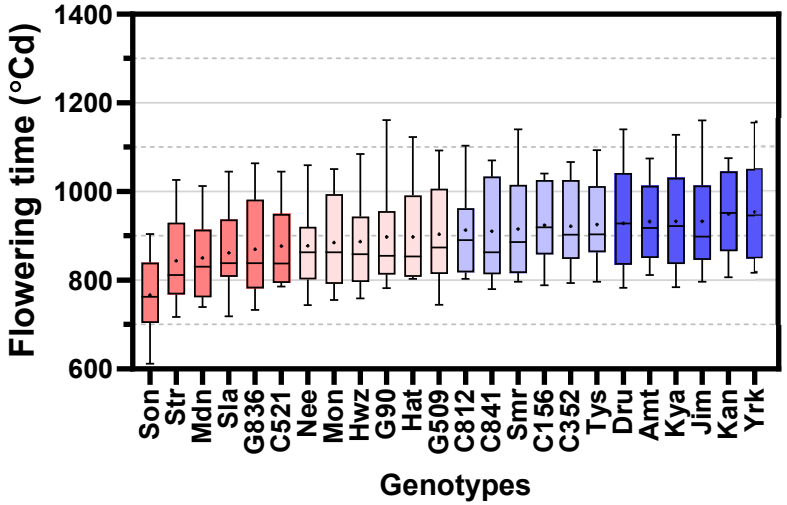




Results Flowering Time

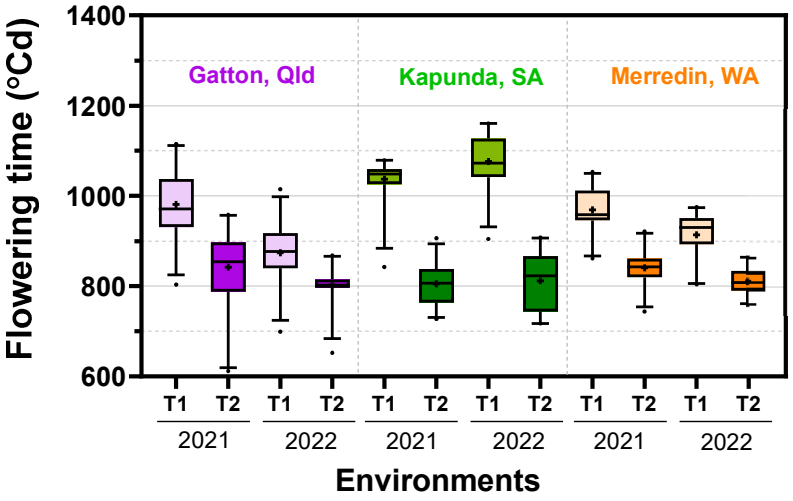


E (82%)



G (7%)

Results Flowering Time



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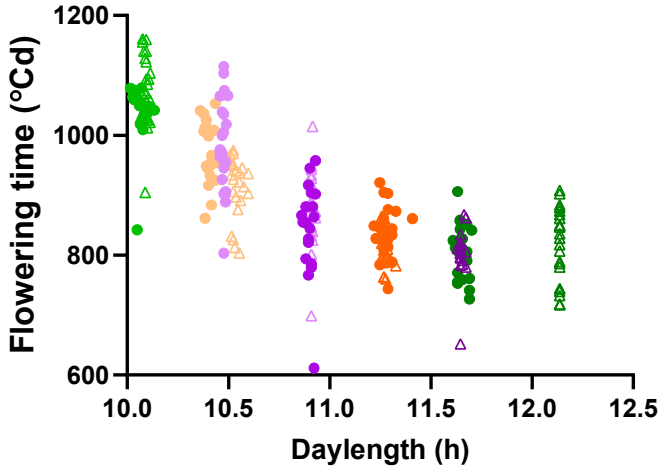

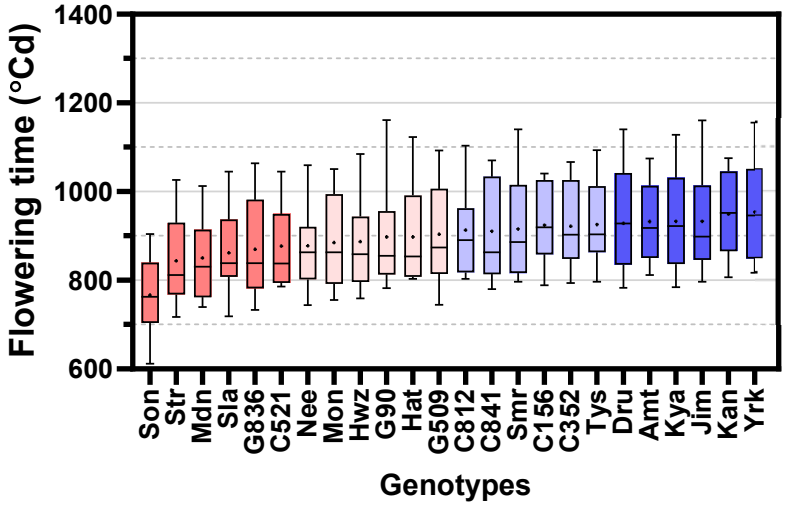

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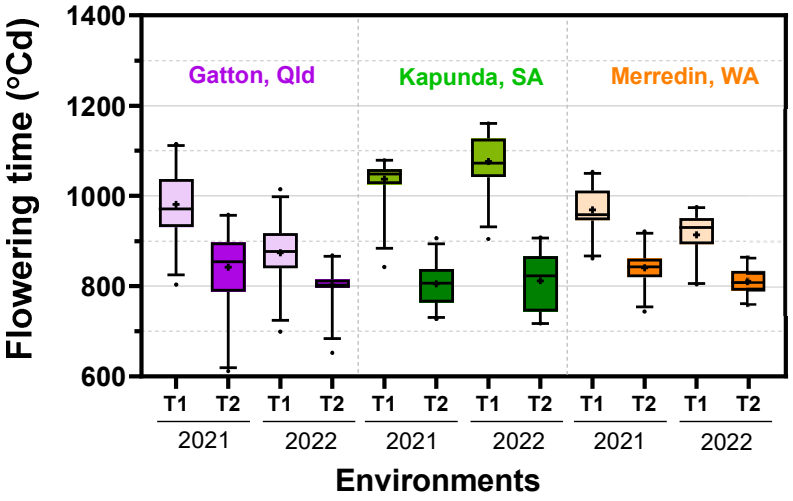

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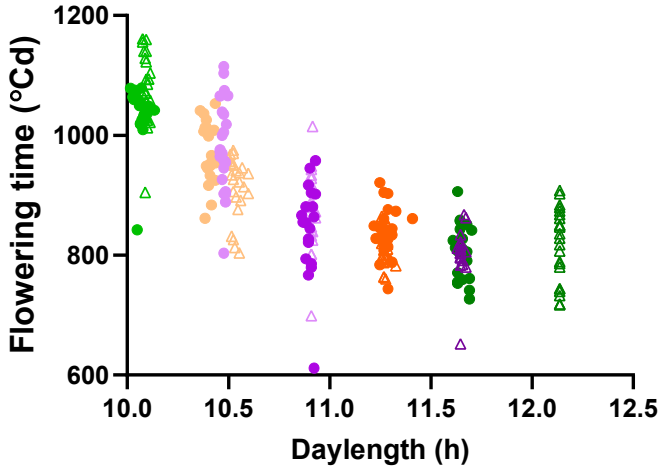

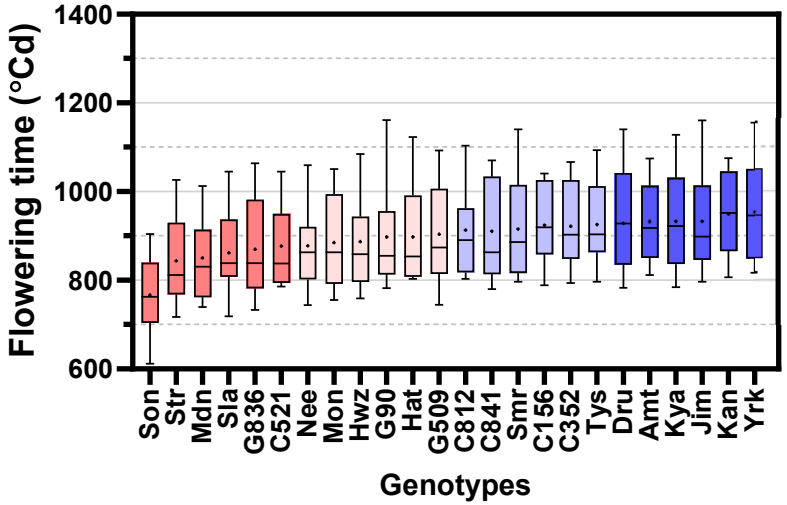

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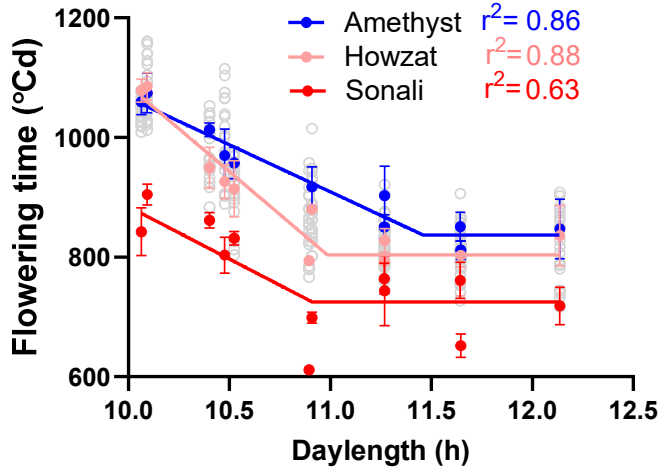
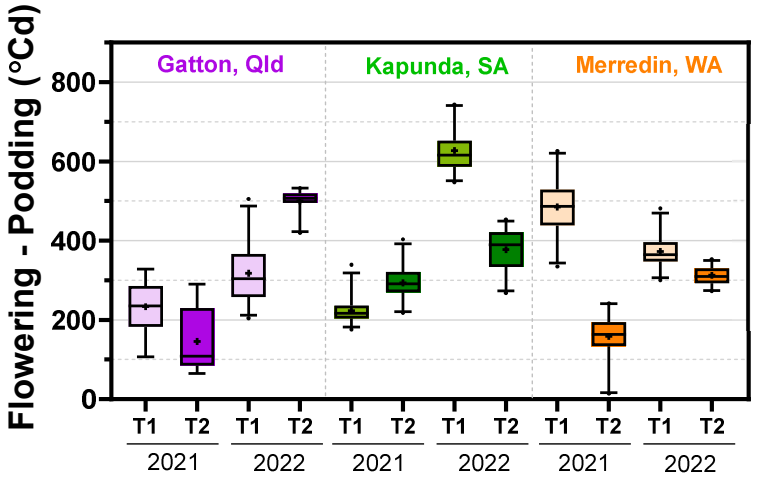
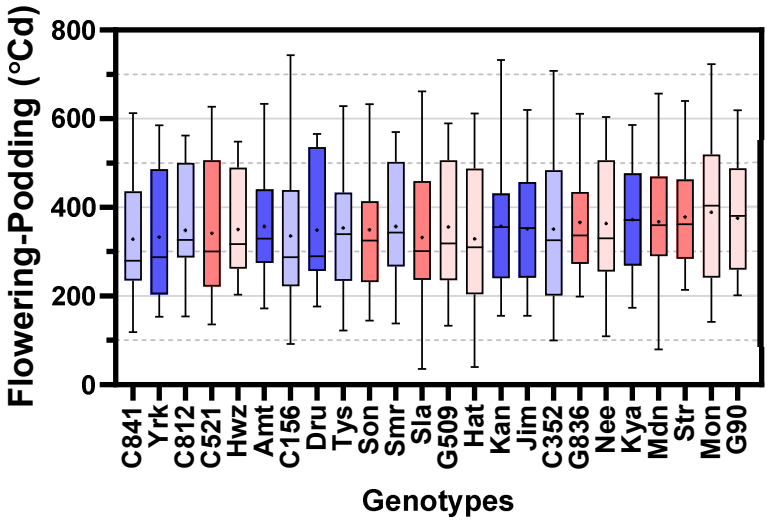


GxE (7%)

Results Flowering-Podding interval

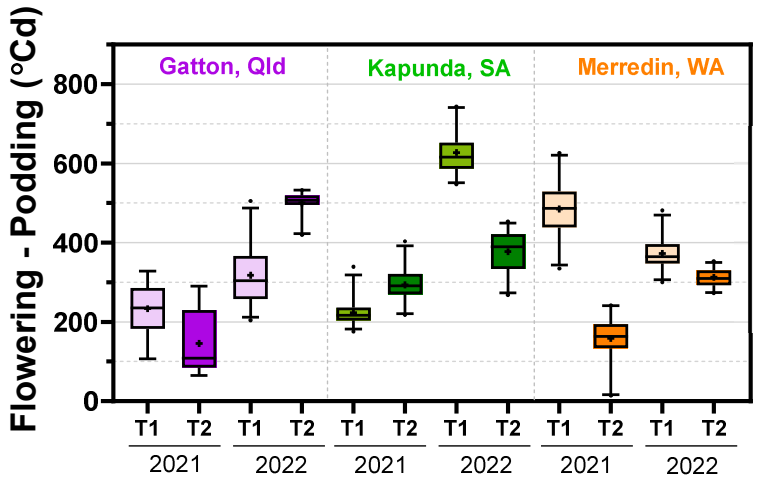


E (89%)



G (3%)

Results Flowering-Podding interval



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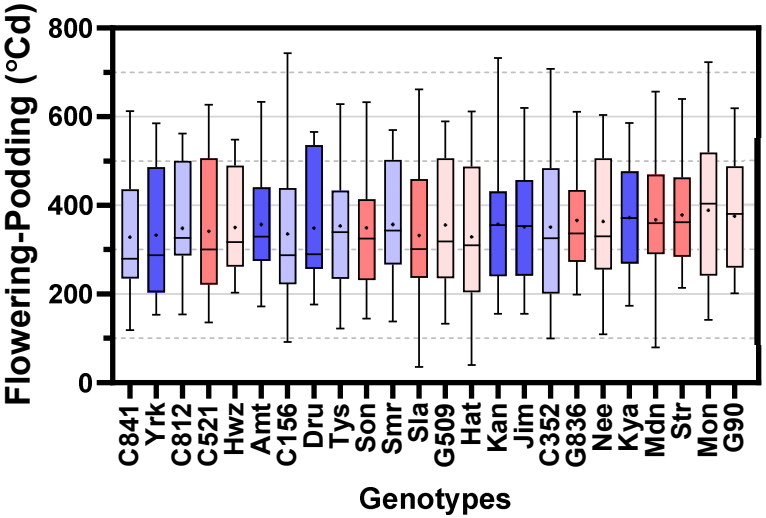

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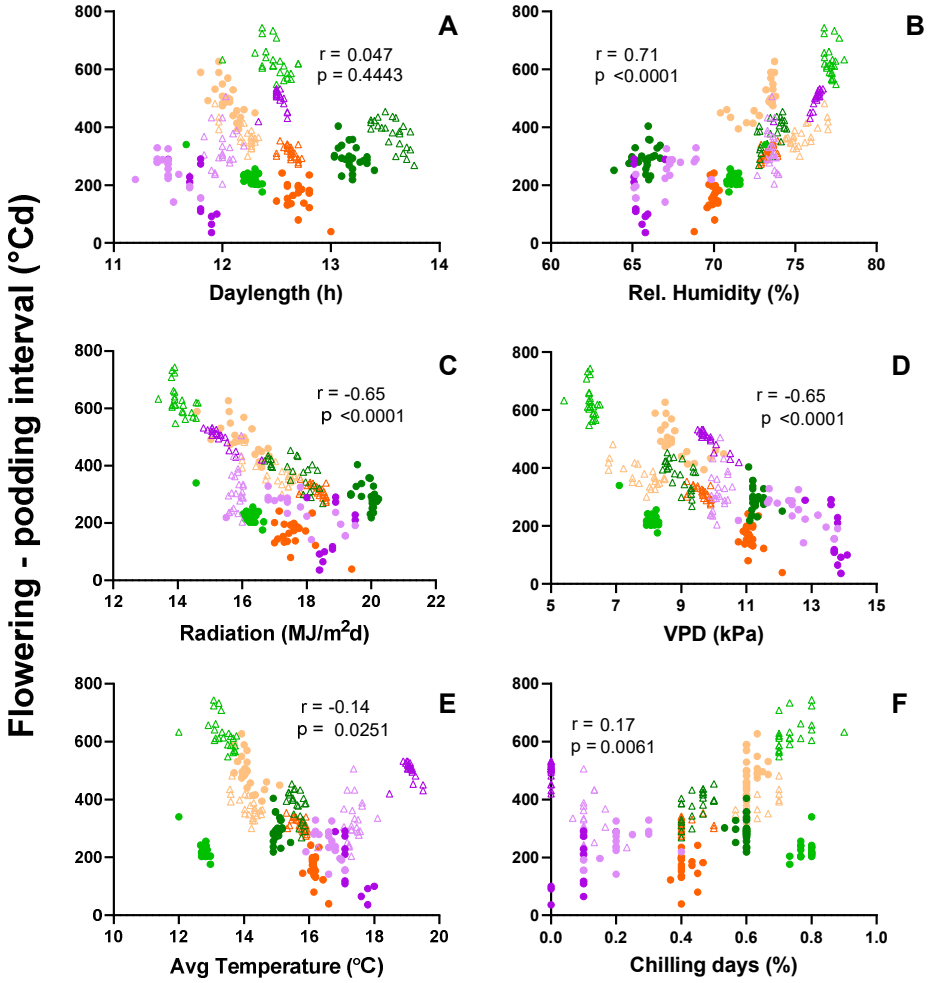
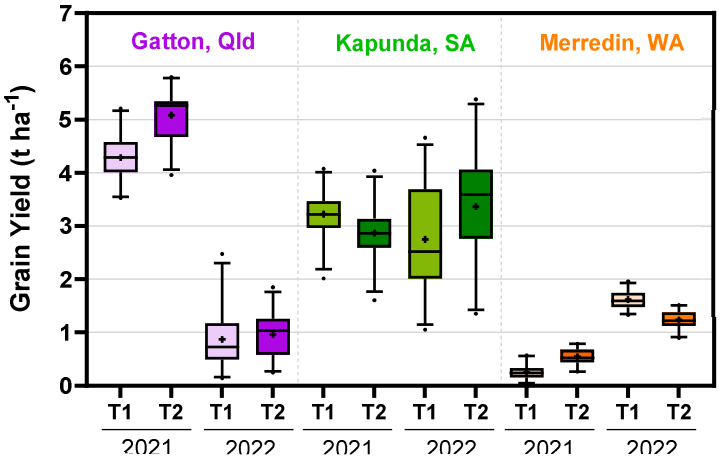
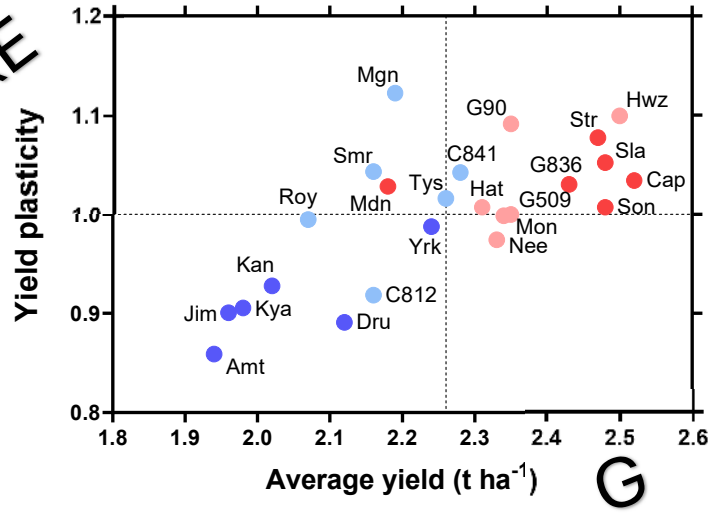


Results Grain Yield



E (80%)

GxE



G

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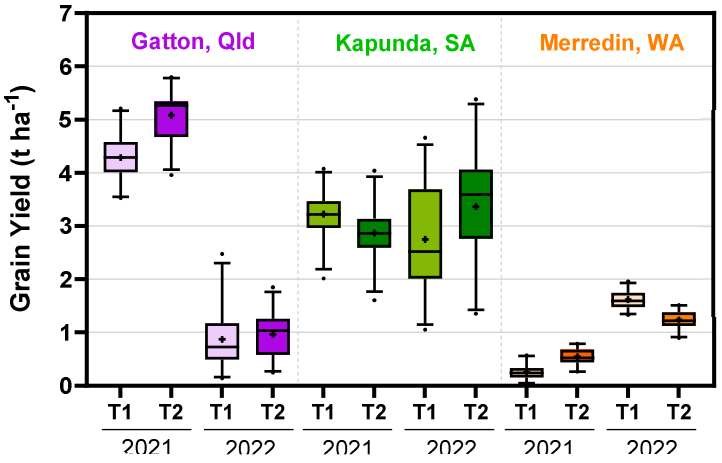

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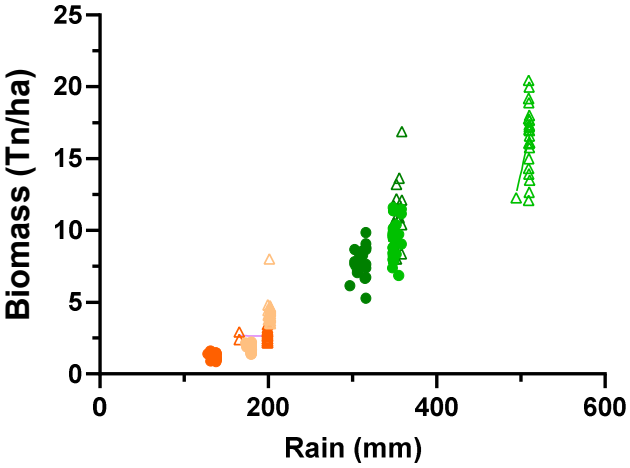

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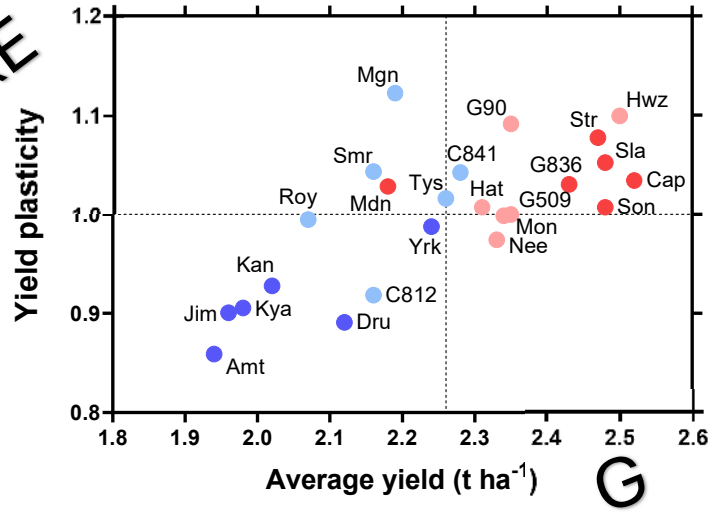

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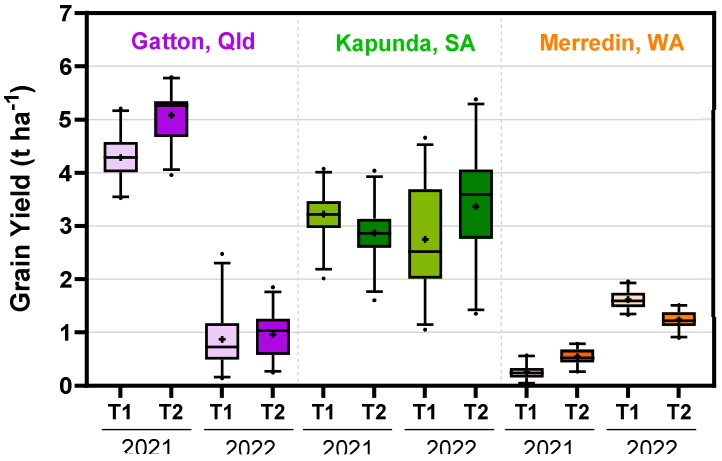

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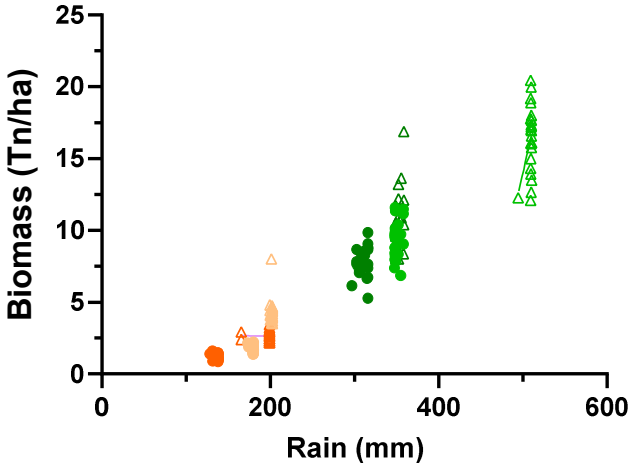

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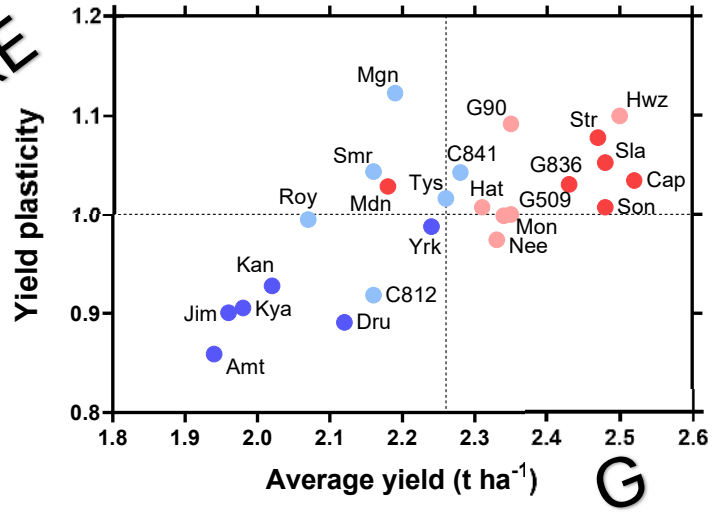

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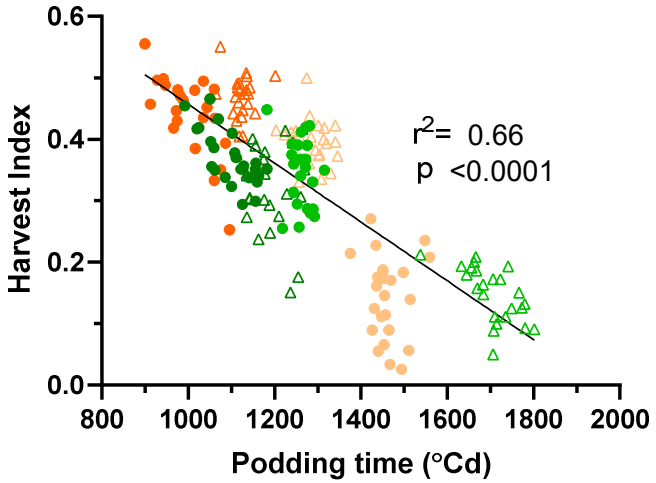

Messages

- Time of **podding** is determinant for harvest index & grain yield
- It depends on:
  - flowering time (daylength)
  - Flowering-pod interval (abortion factors)
- Early podding (not flowering) should be targeted for maximizing yields

** Background image adapted from dreamstime.com*

Thank you for your attention!!