

Managing fruit yield and quality of 'Valencia', 'SugarBelle' and 'Tango' with PGRs

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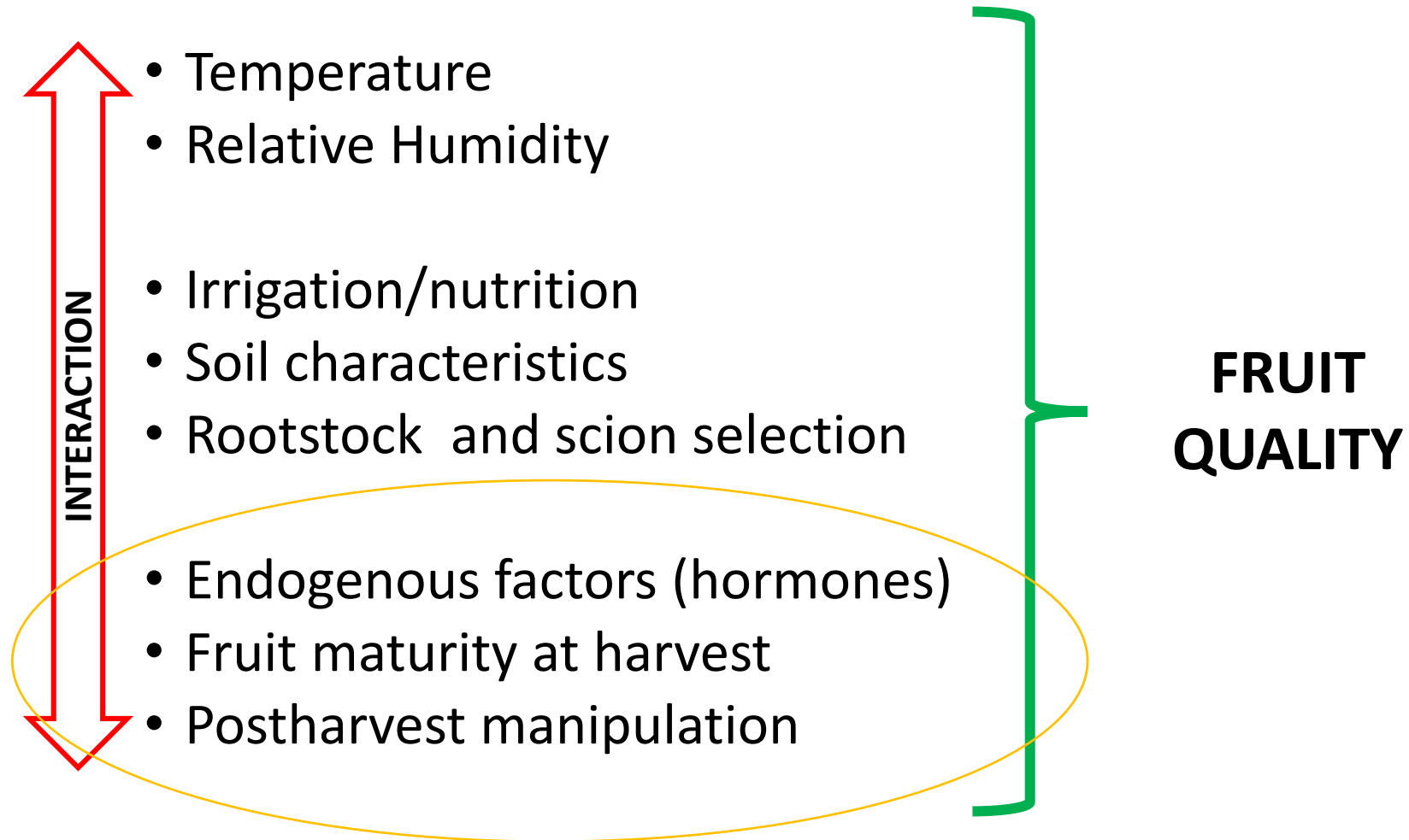
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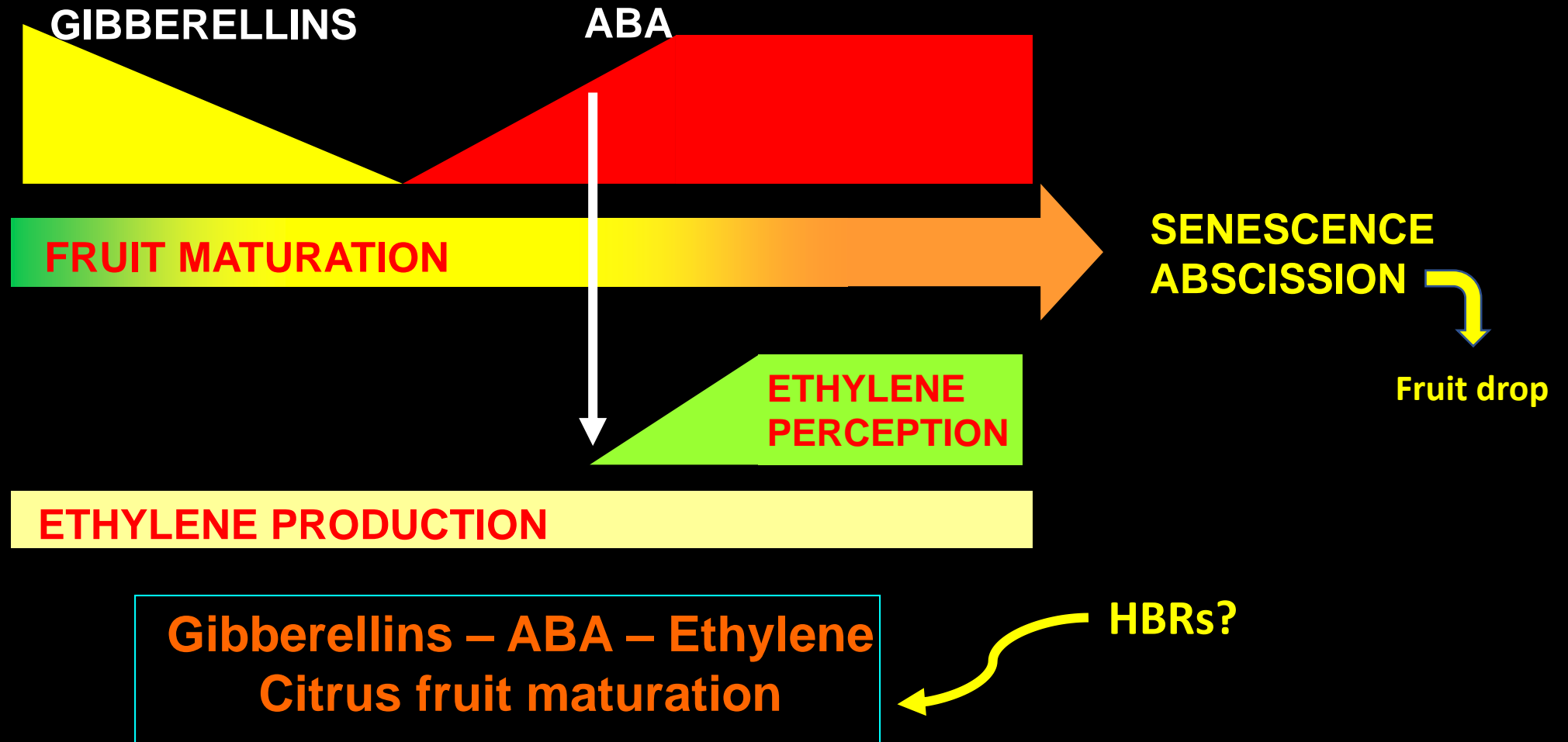
2019 Packinghouse Day

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Environment, cultural factors, varietal background, manipulation, and quality

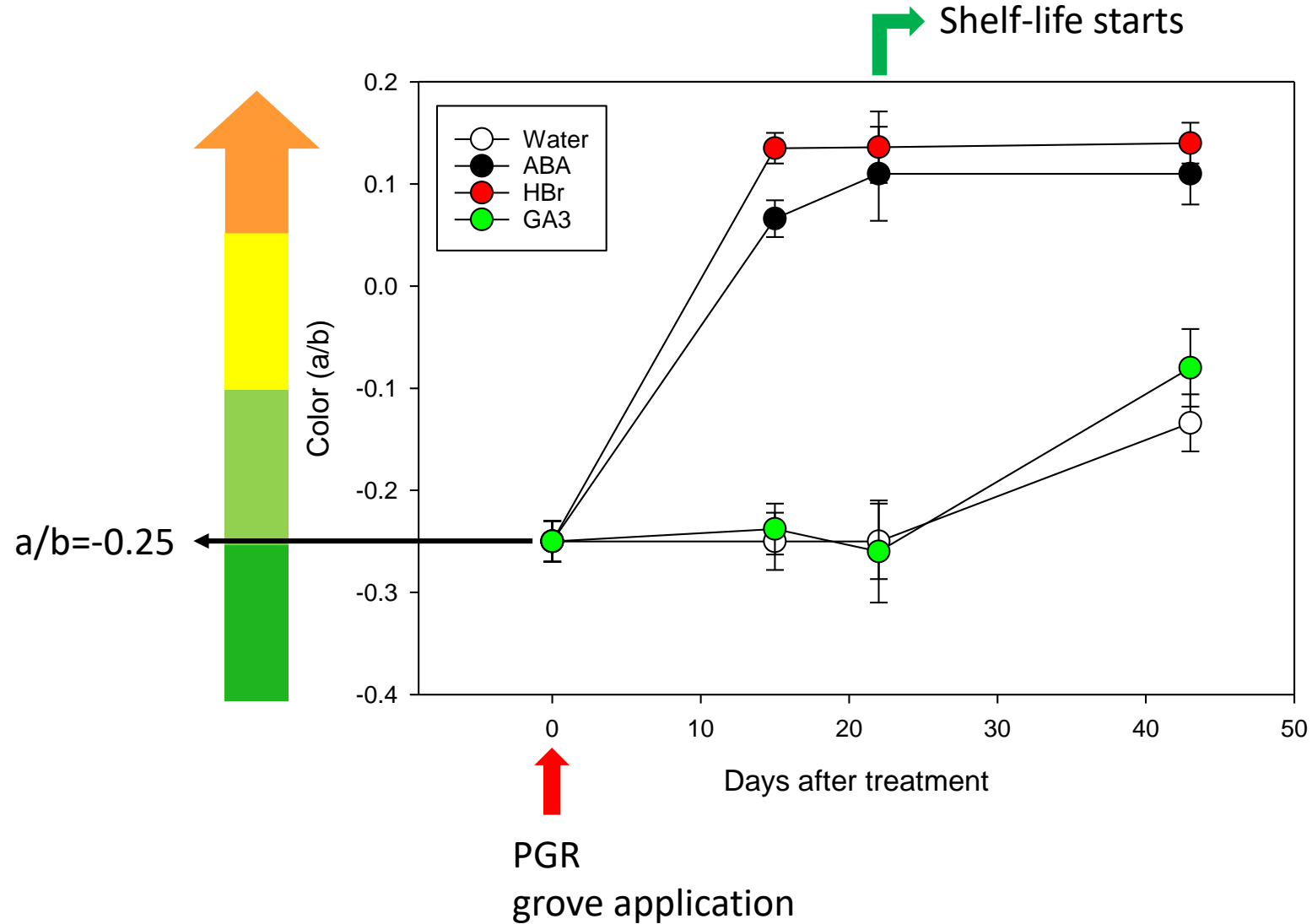


HORMONAL INTERPLAY DURING CITRUS FRUIT MATURATION

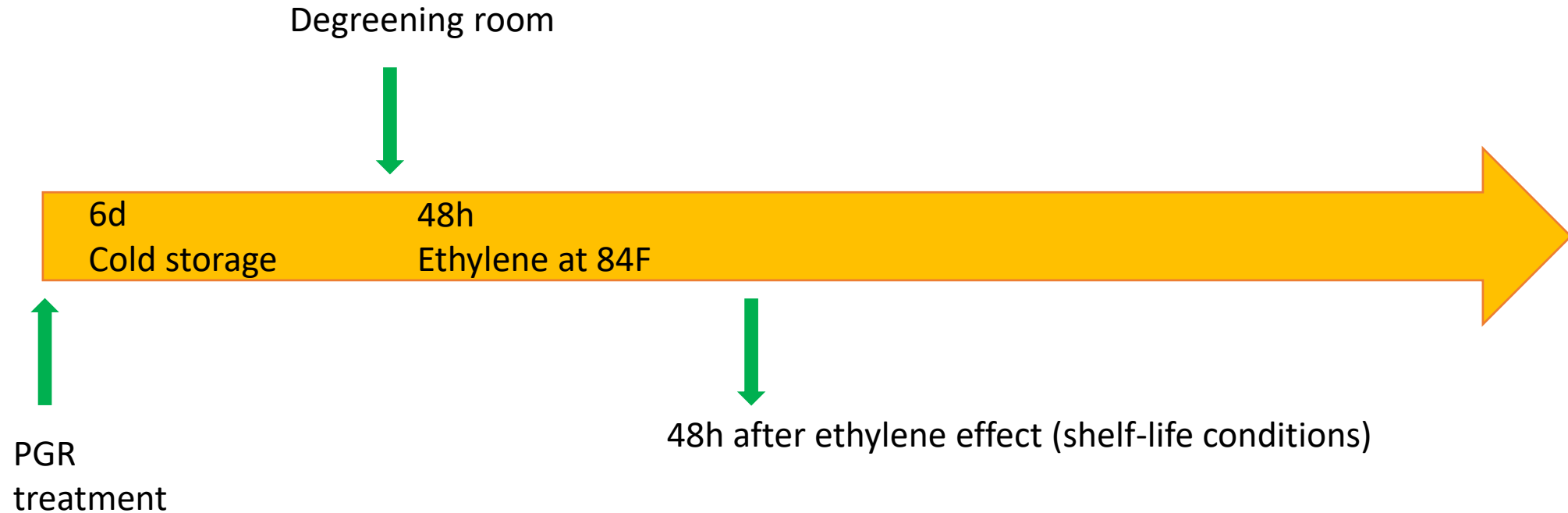


Hormonal studies on 'Tango' mandarins

Tango mandarins. On-tree treatments performed on 11/16/2018

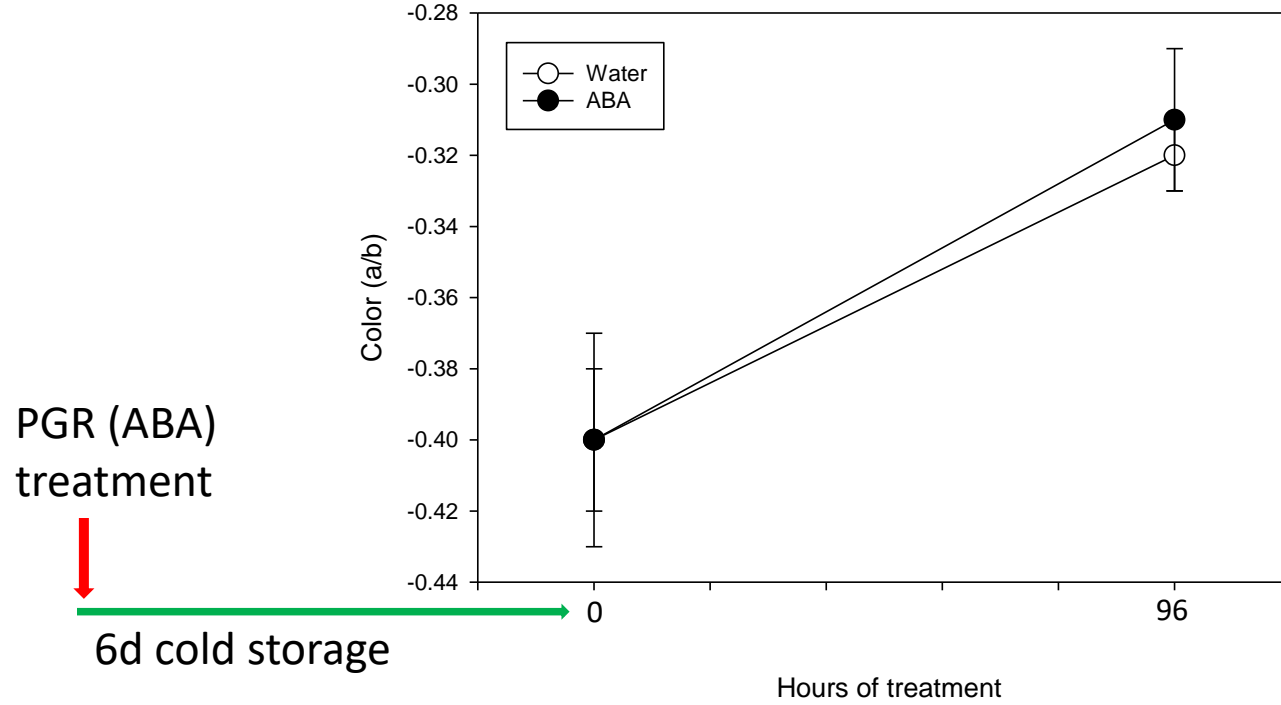


Postharvest Time Course



- *Graduate student Daniel Boakie*
- *Special thanks to Prof. Mark Ritenour*

Air

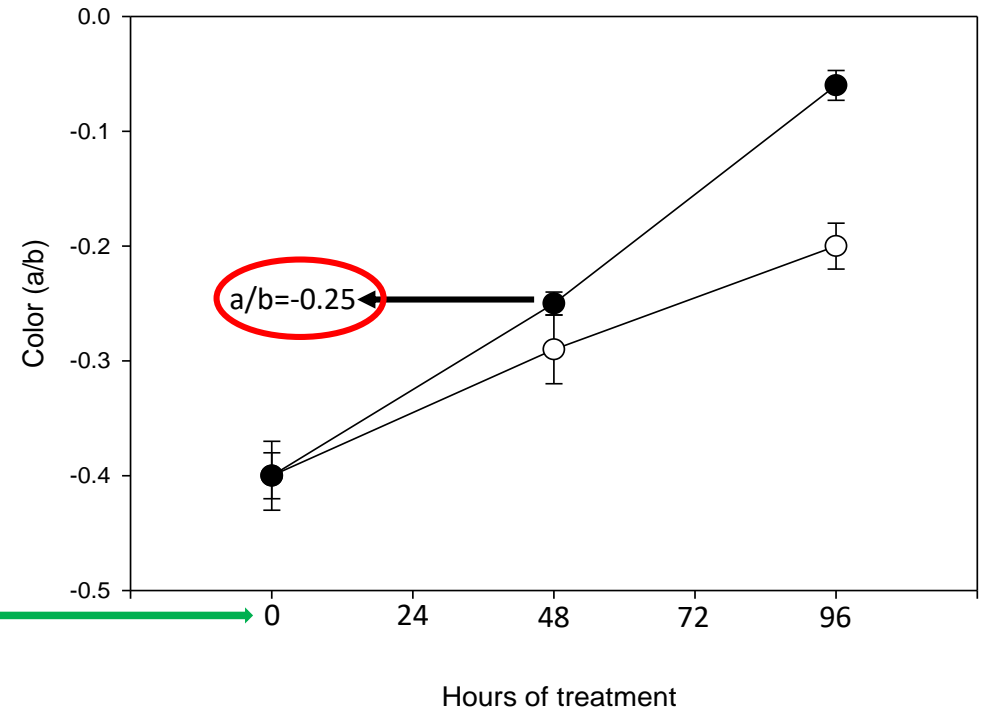


“Priming” effect of ABA application on color development

48h ethylene → Shelf-life →

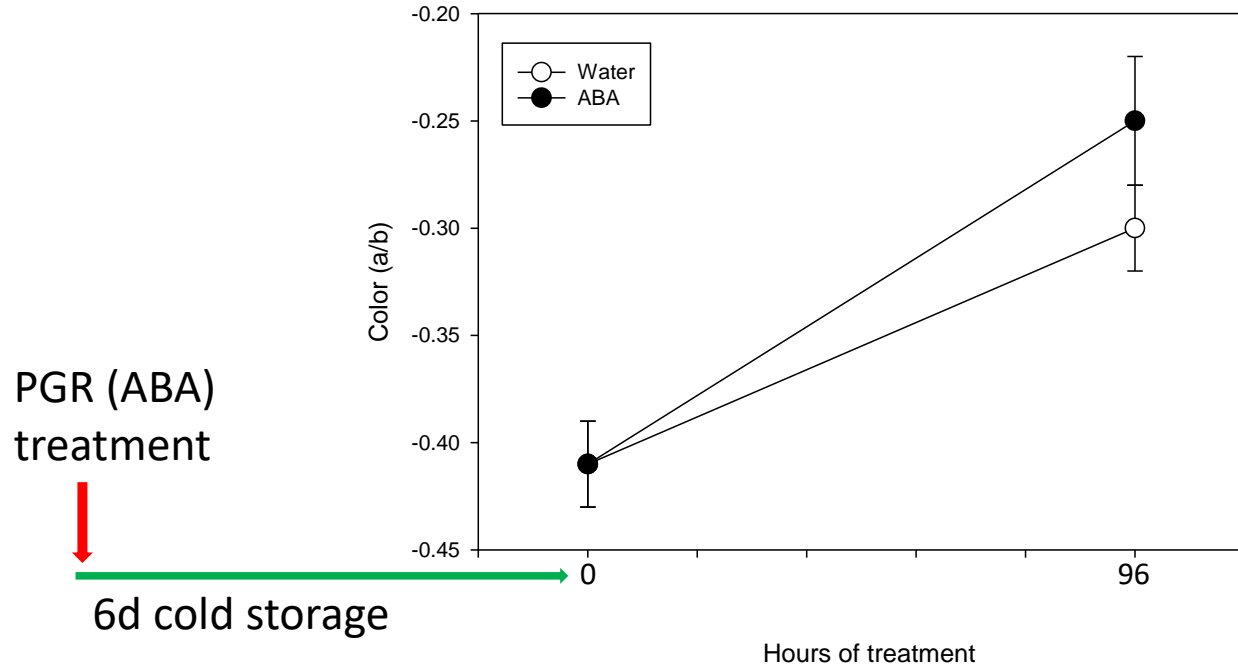
PGR (ABA) Treatment at (a/b=-0.4)

6d cold storage

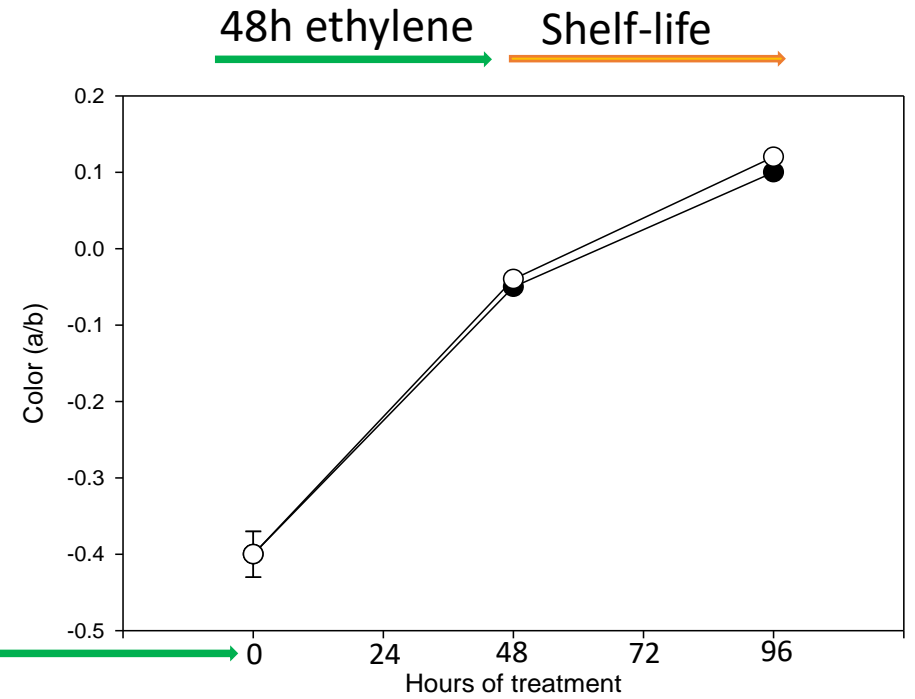
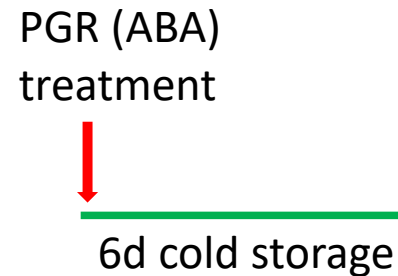


Studies on 'SugarBelle' peel maturation

Air



No effect of ABA application on color development (endogenous ABA content is already high)



Studies of HBr effects on 'Valencia' fruit maturation

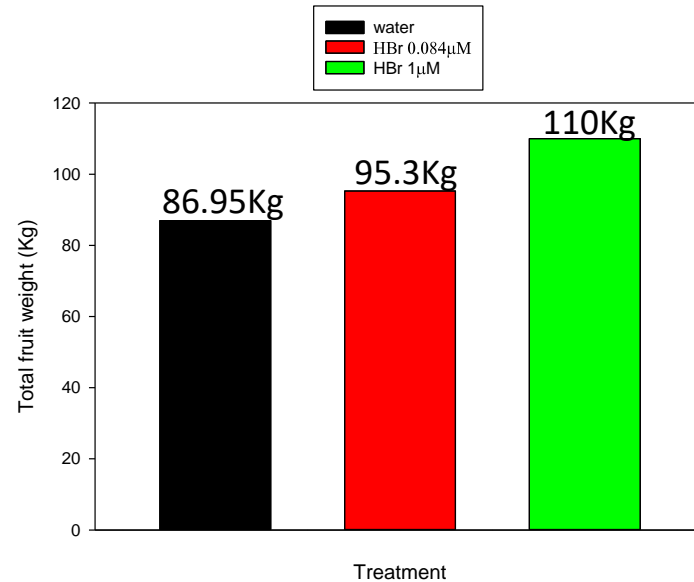
Can HBr cure HLB-affected trees?



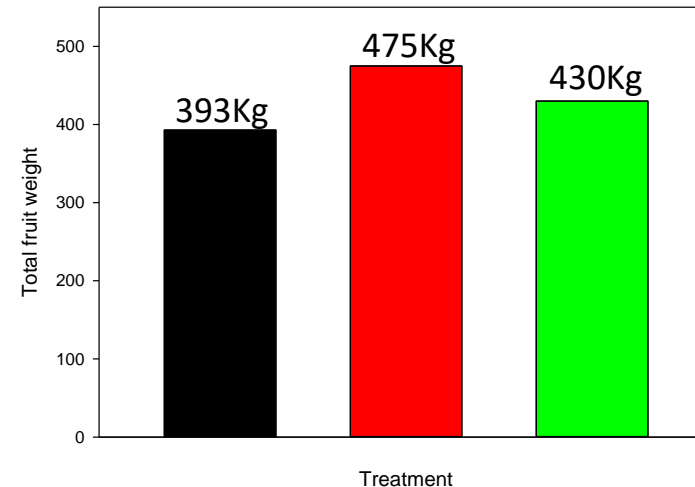
Our approach

- Experiments started in January 2018.
- 'Valencia' mature trees (6 year-old trees) on Swingle.
- 45 trees, 5 reps of 3 trees each.
- Biweekly application of two concentrations of Brassinosteroid

Fruit Yield (totals per 15 trees)



Year 1
May 31, 2018*

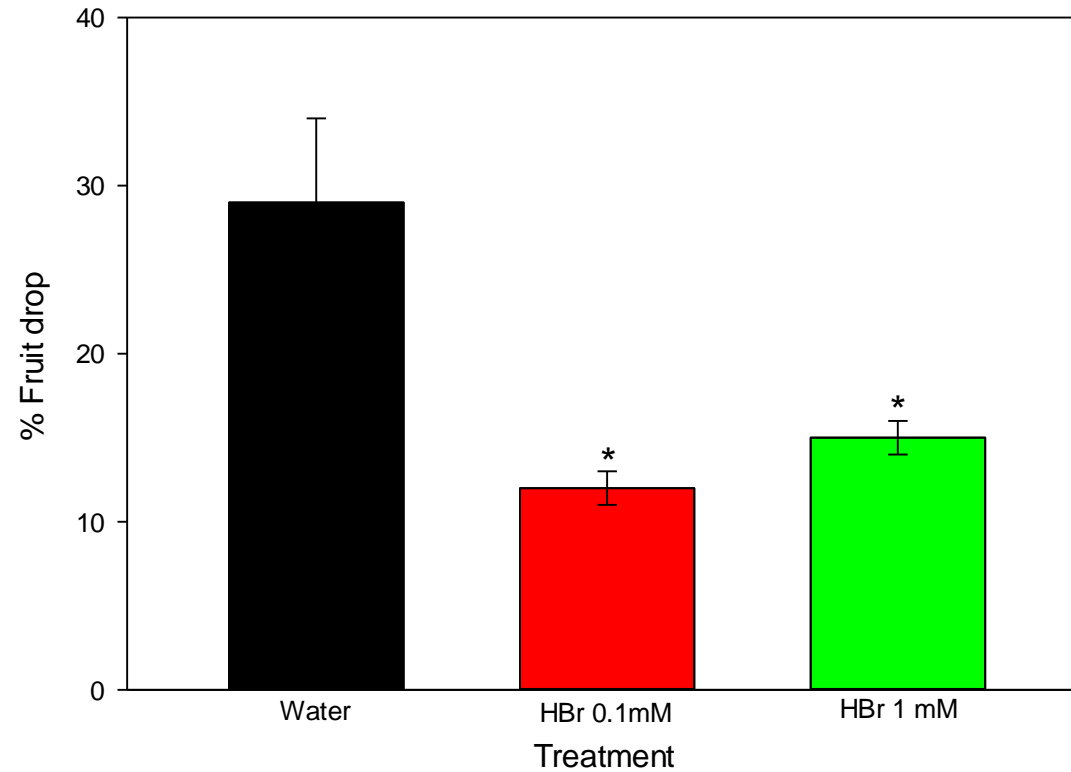


Year 2
March 27, 2019

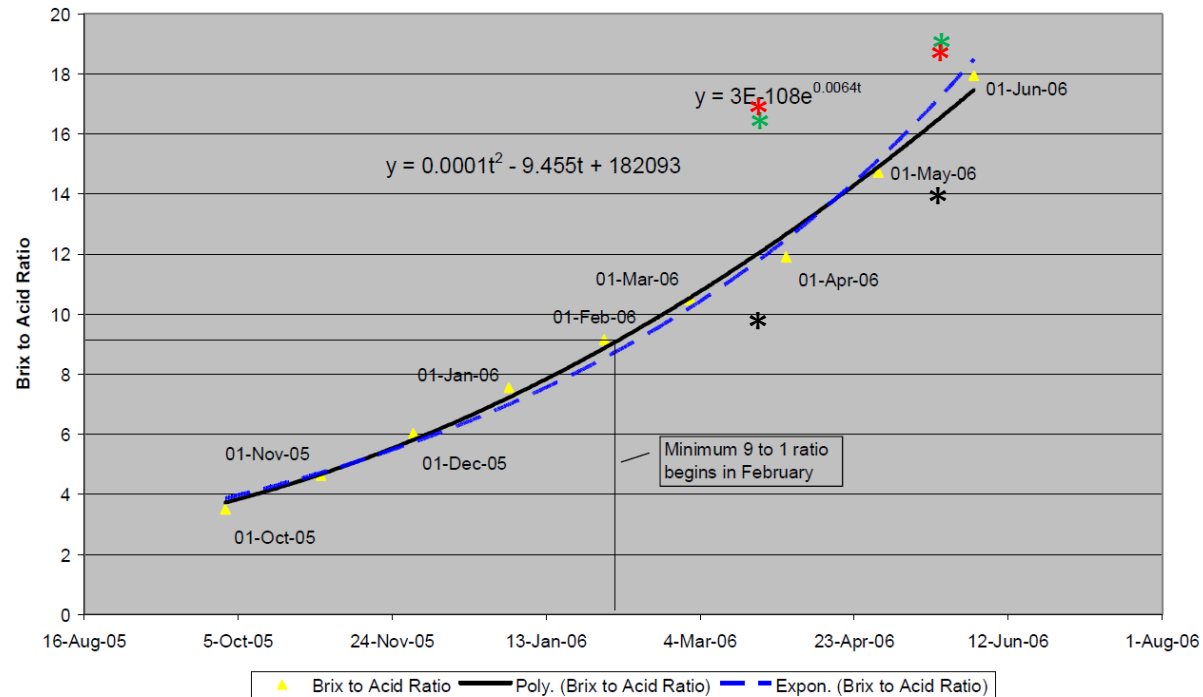
*Irma effect?

Advancing harvesting may have a great impact in yield

Fruit drop was significantly reduced after 2 years



Internal fruit quality in 'Valencia' oranges



Adapted from Searcy, Roka and Spreen, 2007

Conclusions

- Application of ABA seems to prime Tango peel to achieve better coloration. There is a time-window (-0.25 to -0.4 a/b) for this effect.
- 'SugarBelle' fruit did not respond to ABA application.
- HBr application increased 'Valencia' yield in two consecutive seasons.
- HBr advanced internal maturation in 'Valencia' fruit.
- The use of HBr for advancing 'Valencia' maturation has the potential of avoiding fruit drop and advance harvesting before March. This merits further investigation.