

Horticulture Innovation Australia

Final Report

Managing Fruit Maturity and Harvest Dates in Canning Peaches

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Summary

Managing an efficient harvest in canning peaches is a difficult issue with growers struggling to harvest all fruit from individual varieties at the optimum ripeness for canning. SPC then have difficulty holding fruit prior to canning and managing maturity at this stage to maximise canning yield and minimise losses due to over ripening or rots. In recent years, the product ReTain[®] has been registered and used to some extent to delay maturity in the field for between 5-7 days. This assists with harvest on farm, and then managing the logistics of moving fruit from the farm, to the processor, then through the canning operation. Many farmers struggle with accurate timing for this product and if it is applied too late, will not be effective. As the cost per hectare is high, correct application timing is essential. Gibberellic acid (GA₃) is also known to have an effect upon maturity development and fruit firmness and is currently registered for use in cherries. GA₃ is significantly cheaper than ReTain[®] and its use as an alternative to ReTain[®] or as a mix with ReTain[®] has been studied overseas and has been shown to be effective.

This project was conducted to:

- Determine if an easy physiological test or measurable physical characteristic can be used to better determine the optimum application timing for ReTain[®] to be applied in canning peaches.
- Investigate options for a more cost effective treatment regime with ReTain[®].

Fruit maturity development in three common canning varieties, namely Tatura 204, Tatura 215 and Golden Queen, was monitored in the 3 weeks leading up to harvest. Fruit was sampled every 2-4 days until commercial harvest started. Fruit sampled on each date was evaluated for external and internal colour, firmness, solids, titratable acidity and ethylene production.

Results from this work have shown that ethylene production, internal flesh colour, external colour, acidity and solids do not have a large enough change, prior to 7 days before harvest, to be used as a simple indicator of application timing. Flesh firmness may be a good indicator of the best time to apply these products as a large change in firmness was seen in two varieties around 10-14 days prior to the first commercial pick.

In three other studies, a range of ReTain[®] and GA₃ treatments was evaluated for effectiveness in the same orchards that the maturity evaluation work was conducted. Treatments were applied at around 7-10 days before commercial harvest then assessments were done weekly for three consecutive weeks. Assessments of return bloom in the following season were also done.

A number of treatments in the product efficacy studies resulted in delayed maturity of fruit. The delays were equal to that seen with the current ReTain[®] registered rates, with no adverse effect upon fruit colour, size or return bloom in the following year.

Further work to confirm the correct application timing based upon changes in fruit firmness is recommended.

Possible permit applications with alternative treatments to ReTain[®] are being investigated.

Keywords

Peach

Canning

Maturity

ReTain

Gibberellic acid

ProGibb 40 SG