

Future Orchards Trial: Final Report

Project title:	Regulation of fruit set in pears with plant growth regulators
Region:	Northern Victoria – Goulburn Valley
Contact:	Julie Godwill Email: info@fgv.com.au Ph: 03 5825 3700
Objective:	<p>The aim of this study was to increase fruit set in pears. Aminoethoxyvinylglycine (AVG) is a plant regulator used on apples, pears, and ornamentals. In apples, it may delay fruit maturity, leading to benefits such as a reduction in pre-harvest fruit drop and improved fruit quality. In pears, AVG may help maintain fruit firmness. Fruit set in pears can be low and unpredictable.</p> <p>According to literature findings, the influence of aminoethoxyvinylglycine (AVG) application was investigated in Argentina during the 2009-2010 season. The applications were randomly performed on eight rows at two stages of growth (full bloom and 14 days after full bloom) and two rates (125 and 250 mg L⁻¹) with an untreated control. In this cultivar, a 22% increase in fruit set and a 33% increase in yield were recorded with AVG application at 250 mg L⁻¹.</p> <p>Literature:</p> <p>E. Sánchez and M. Curetti: Effect of AVG Application on Fruit Set, Yield and Fruit Size in ‘Abate Fetel’ and ‘Packam’s Triumph’ Pears in a Semi-Commercial Statistical Trial Instituto Nacional de Tecnología Agropecuaria Estación Experimental Agropecuaria Alto Valle CC 782, General Roca (8332), Río Negro Argentina</p> <p>Williams, M.W. 1980. Retention of Fruit Firmness and increase in vegetative growth and fruit set of apples with aminoethoxyvinylglycine. HortScience. 15(1): 76-77.</p>

Outline/method/ (what you did):	<p>Small size trial. The effect of Aminoethoxyvinylglycine (AVG) to be observed on fruit set and harvest on pears.</p> <p>Different bays of trees to be treated with different concentrations of AVG.</p> <p>Instructions: Prepare 4 litres of 250mg/L dilution. Apply 2 litres of dilution on first 2 trees (1litre per tree). Add two litres of water to sprayer to make 4 litres of dilution and apply only 2 litres on second 2 trees (2 litres will remain in sprayer).</p>
---	--

	<p>As above applications did not deliver enough spray “to point of run-off” greater volume was applied at recommended concentrations – Full strength – 15.43 grams, ½ strength – 7.25 grams.</p> <p>Whilst trial was in progress all trees in block were sprayed for normal fungal diseases and pests. Routine application of Winter Oil, Sylitt for black spot, Syd-X for codling moth, Altacor for Codling Moth.</p>
--	--

Results Summary (measurements and observations, photos, photos of control area if applicable)

Location: Kialla East

Pear Variety: WBC

Year Planted: 2004

Rootstock: D4

Soil type: Sandy

Date of 1st Application Full bloom – 17/10/16




Date of 2nd Application – 2 weeks later 31/10/16


At time of application the weather was fine and mild. However, greater than normal rain conditions were experienced across the spring flowering period.

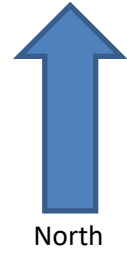
The WBC pears are conventional 6x6 metre plantings in a traditional vase shape. The health of the trees is excellent.

Flowering prior to AVG application was consistent and even across the block. (As demonstrated in photos below)

Grid and map below shows treated and untreated trees and fruit count per tree prior to harvest in Feb. 2017

- Untreated trees 
- Treated trees (Low rate) 
- Treated trees (High rate) 

187	196	175	North 
190	250	210	
156	275	265	



Weight/size data not collected. From observation, fruit was not smaller on blocks treated with AVG than untreated controls.



Implications (What did we learn? How will this impact on the business? What will we change? What are the road blocks/obstacles to change?)

In a year of low frost prevalence, it appears AVG may have a positive effect on both fruit set and fruit retention.

Of major concern is the cost of AVG. Use of AVG on high value market crops of pears, when low chill hours through winter have been recorded, would appear to be beneficial.

Recommendation: This trial should be repeated, on a larger scale, using a higher value market variety crop of pears, in closer planting conditions. A minimum of 2,700L (1 full vat) of spray should be used to obtain better data. The cost of this application would be \$1,000.

Trees should be monitored in spring 2017 and again at harvest in 2018 to measure the impact of AVG on return bloom, fruit set and harvestable yield.

The use of pear trees planted in a more suitable soil type may also give a different result.

*Should further information be required a detailed spray program and watering program can be supplied.

Value of In-kind Contributions

Has your organisation or any other organisation contributed to the cost of the trial with goods or services other than money? Please provide an estimate below;

Nature of Goods or Services	Provider	Approx Value
Application of AVG – 2hrs x 2 applications at different rates	Worsall Pty Ltd	\$200