Department of Primary Industries

Research update

2016-17
- Auxin navel end trials
- GA flower fruit set trials

NSW DPI citrus roadshow 2017

Steven Falivene (NSW DPI)

NOTE: GA and Auxin are not registered for these purposes. This is an update on activities to gain your/industry feedback and comment to help direct next steps.

www.dpi.nsw.gov.au

Special thanks

Darren Minter

John & Toby Hederix

MILDURA FRUIT COMPANY

MFC

Bill Robinson

John Chavarria

Justin Lane

Rohan Ashley

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Auxin: Background

+ full bloom timing (~ 85% flowers opened)

Sites

- Washington
- Lengs

2 X treatments, 10 ppm + wetter

1. One spray a little after full bloom (18 Oct)
2. One spray 12 days after full bloom (31 Oct)

12 days + full bloom timing

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Citrus program

Auxin: Fruit size & yield

Yield – no difference

Average fruit size mm (trend larger size)

	Control	1st timing	2nd timing	Statistical significance
Washy	80.5	81.6	82.5	X (22%)
Leng	76.4	78.0	79.2	X (7%)

RCBD Anova @ 5% significance

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Citrus program

Auxin: Blemish

Percent 1st grade pack-out: blemish scoring

- Lengs less blemish, washy similar trend

	Control	1st timing	2nd timing	Statistical significance
Leng	81% a	85% b	85% b	✓ (2%)
Washy	70% a	78% a	76% a	X (20%)

5% extra 1st grade packout @ $400/t @ 45t/ha = **$900**

RCBD Anova @ 5% significance

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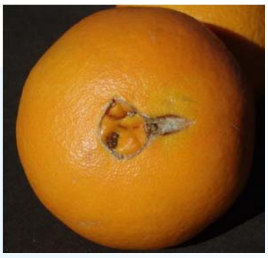
Citrus program

24D: Navel end reduction



Percent of fruit with small navel end (0 to 6 mm)

	Control	1st timing	2nd timing	Statistical significance
Washy	77% a	97% b	92% b	✓ (0.03%)
Leng	53% a	93% b	78% c	✓ (0.01%)

RCBD Anova @ 5% significance

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Auxin: Rind texture

Leng

Washy

Washy

Percent of fruit with 1st grade rind texture

- lengs no difference, Washy coarser,

	Control	1st timing	2nd timing	
Leng	100% a	99% a	100% a	X (39%)
Washy	92% a	71% b	79% b	✓ (0.1%)

RCBD Anova @ 5% significance

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Auxin: Fruit splitting

Percent no splitting (less than 3 mm)

- Washy no difference, Lengs less split

	Control	1st timing	2nd timing	Statistical significance
Washy	99% a	99% a	100% a	X (18%)
Leng	86% a	94% b	92% b	✓ (1%)

RCBD Anova @ 5% significance

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Auxin: Fruit drop

Fallen fruit under tree at harvest

- Washy no difference, Lengs 38% less drop

	Control	1st timing	2nd timing	Statistical significance
Leng	23 a	14 b	16 b	✓ (2%)

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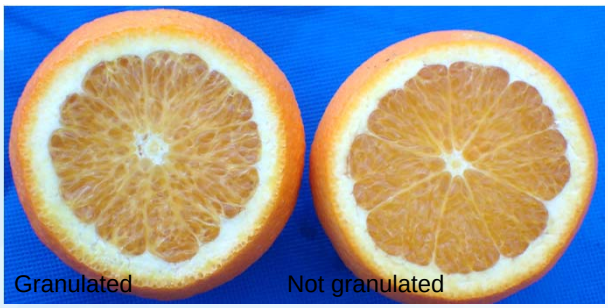
Auxin: Granulation



- Lengs no difference, Washy 4% more granulation

	Control	1st timing	2nd timing	Statistical significance
Washy	4 %	8%	7%	✓ (4.3%)

RCBD Anova @ 5% significance

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Auxin: Juice: Brix, Acid, % juice

- Lengs no difference, Washy less % juice & acid

	Control	1st timing	2nd timing	Statistical significance
Juice	47%	43%	42%	✓ (3%)
Acid	0.91	0.85	0.86	✓ (4%)

RCBD Anova @ 5% significance

GA to increase fruit set

GA fruit set

Treatment

- Two consecutive spray (double knock) of GA 20 ppm + wetter
- Mature Lanes & 8 yo Barnfield

Timing

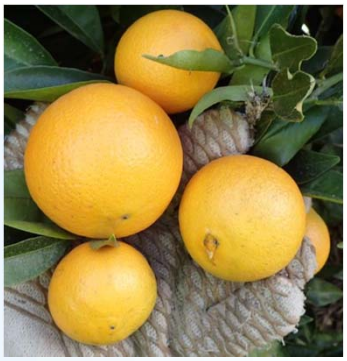
- 1st : 90% petal fall (24 Oct)
- 2nd : + 4 days of 1st (28 Oct)

~ 90% petal fall

~ 4 days + 90% petal fall

GA fruit set: Lanes

- Yield: no difference (70T/ha)
- Fruit numbers: no difference but trend higher
- Fruit size: variable & smaller



Large Lane trees	Control	GA treated	Statistical significance
Fruit / tree	556	592	X (54%)
Av. Fruit size (mm)	77.7	72.3	✓ (0.1%)

GA fruit set: Barnfield

- Yield: no difference (25T/ha – med. for small trees)
- Fruit numbers: 20% more fruit with GA
- Fruit size: variable & smaller

Large Lane trees	Control	GA treated	Statistical significance
Fruit / tree	202	240	✓ (4.6%)
Av. Fruit size (mm)	77.3	72.3	✓ (0.01%)

Summary

- Auxin potential use for
  - Varieties with good juice levels
  - Smoother rinds (variety, tree age, nutrition & site specific)
- GA potential fruit set
  - Positive result but;
    - Smaller fruit size – “runts”
    - Needs more trials in typical flowering years and possibly earlier timing
- If consistent result over years will explore registration