



# Vigour Management

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Sept 2009

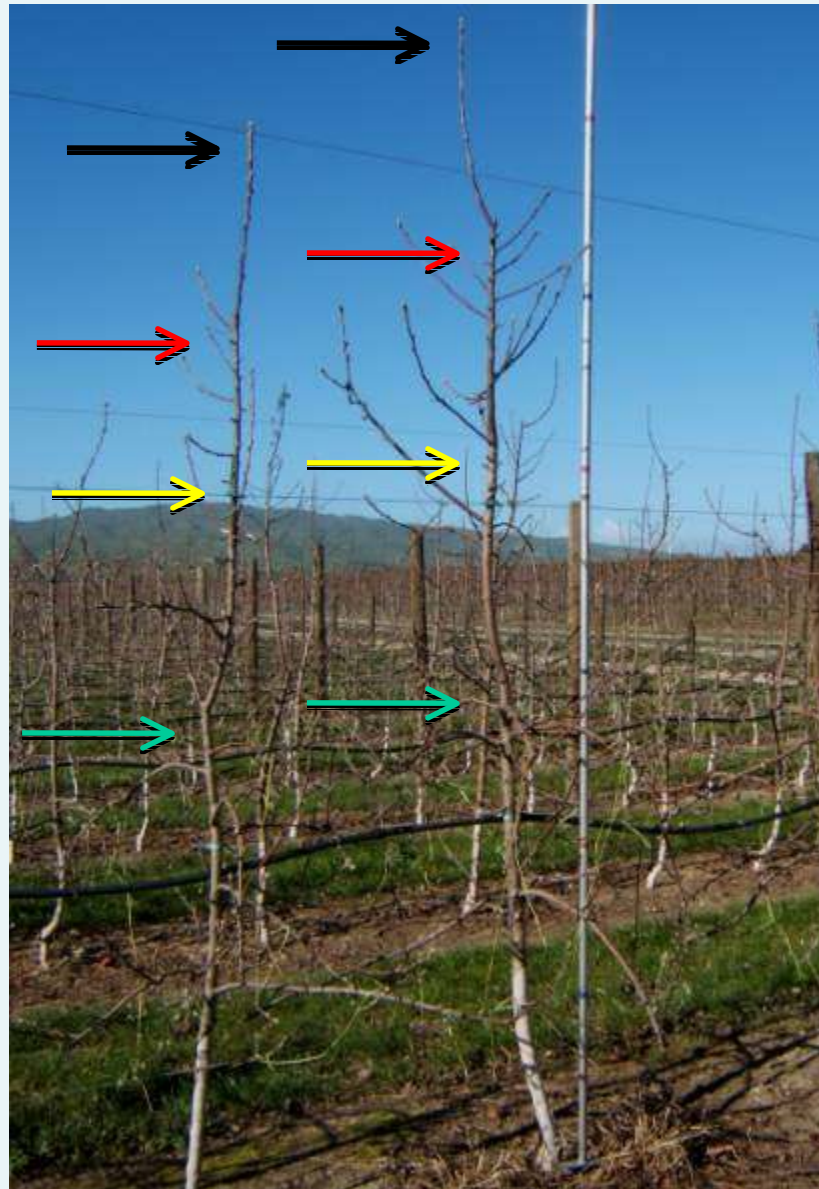




# Developing Young Blocks Growth Objective

Growing season	Leader extension target (3.5m M9)	Leader extension target (4.0m M26 or CG202)	Percentage of Ultimate tree Height
Nursery	1.5m	1.8m	45%
1 <sup>st</sup>	0.7m	0.8m	20%
2 <sup>nd</sup>	0.6m	0.7m	17%
3 <sup>rd</sup>	0.5m	0.5m	13%
4 <sup>th</sup>	0.2m	0.2m	5%
Total	3.5m	4.0m	100%





Year	Target	Actual
Nursery	1.5	1.5
Year 1	2.2	2.1
Year 2	2.8	2.6
Year 3	3.3	3.1
Year 4	3.5	3.5





# Crop targets



<b>Growing season</b>	<b>Target crop load (t/ha)</b>	<b>Exceptional performance (t/ha)</b>
1 <sup>st</sup>	0	0
2 <sup>nd</sup>	15	20
3 <sup>rd</sup>	30	40
4 <sup>th</sup>	50	60
5 <sup>th</sup>	60	75
6 <sup>th</sup>	65	75







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# Assess your current performance

- Identify any poor areas within the orchard.
- Objective assessment of tree and orchard management practices that caused the problem.
- Rectify the underlying problem or problems.



# In most new developments in Australia



Low vigour is the problem





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# Tools to maximize vigour

- Control SARD
- Ensure drainage needs are met, hard pans are ripped, and soil prep is ideal
- Ensure main cation nutritional needs are addressed preplant and to depth
- Good supply of P early and N throughout the growing season, in an available form.





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# Tools to maximize vigour

- Avoid water stress. (preplant, post plant and throughout the entire growing season)
- Prune and train to maximize tree height and side branch development
- Set realistic crop loads (fruit/TCA cm<sup>2</sup>)
- Pest and Disease control
- Weed control







# Monitor growth performance



And  
be  
ready  
to act!





# Controlling Excess Vigour



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# Branch Type and Pruning Style

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**>3cm per m , heavily shortened and upright**

**<3cm per m, weak shortening and pendant**



= High vigour



= Low vigour





Pendant , simple , unmodified , weak shortening,  $<3\text{cm/m}$ , highly fruitful



**= Controlled vigour**





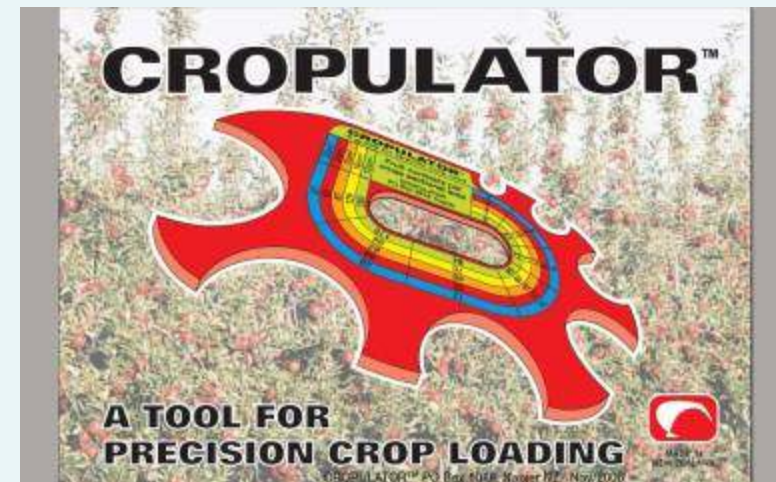


# Crop Load

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- Crop Load is the best vigour control
- 4-5 fruit per cm<sup>2</sup> BCA
- Understand your blocks optimum crop load per tree



Refer FO2012 Crop Load Notes





# Trunk Girdling and Scoring



**Grower developed tools**

**12 months after  
scoring**







# Girdling



**Double C, 50mm overlap both ways, removes a proportion of phloem cells for a period.**





# Stem incisions using a chainsaw

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# Root Sawing







# Root Pruning





# Growth Regulators

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- Both can lower vigour
- Regalis significantly more effective than Ethrel
- Timing and rates are critical
- Regalis can be used on specific parts of the tree
- As with any growth regulator, have side effects that need to be managed.

## Ethrel





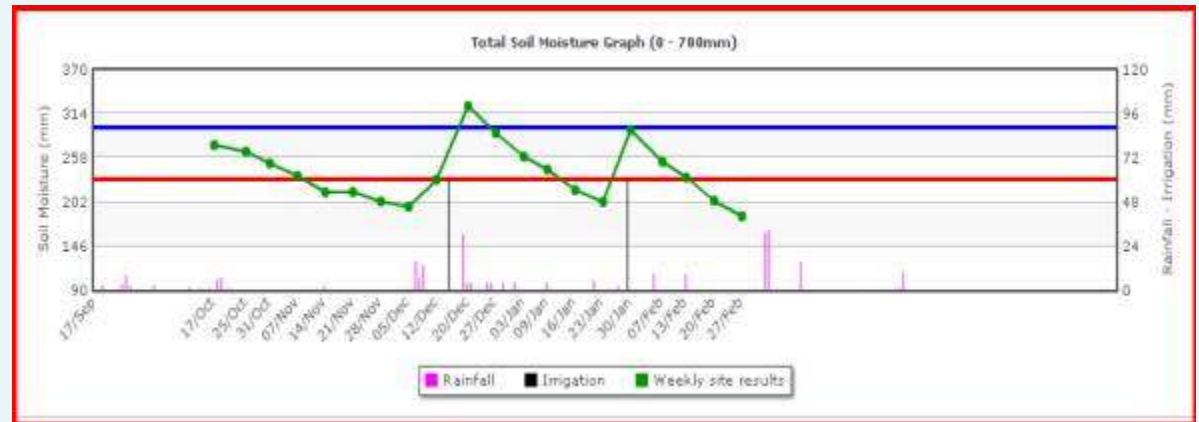


# RDI ~ Fuji M793 2008 and 2009

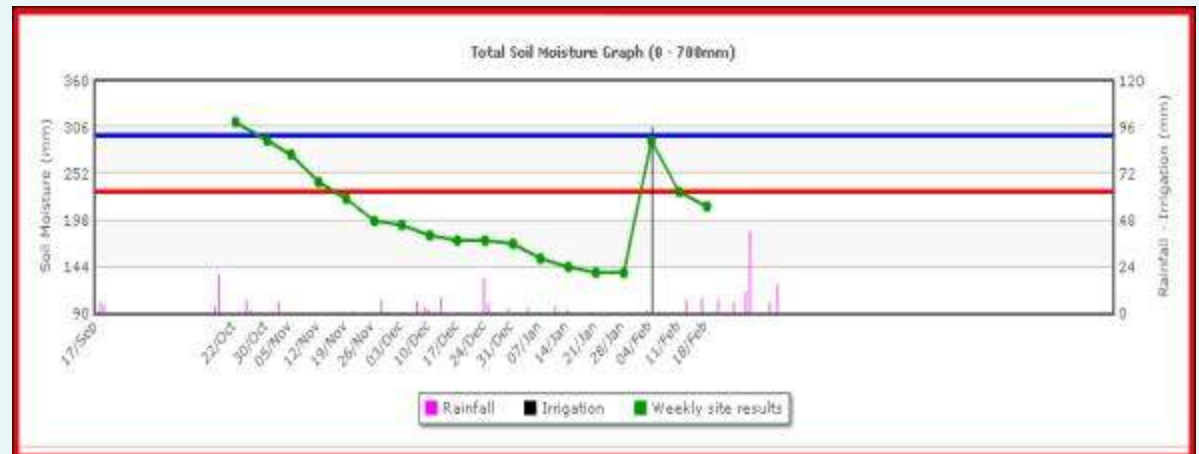
- 1m growth
- \$2/tree summer prune
- Poor fruit colour, 30% picked for juice

- 40cm growth
- No SP
- Great colour and size
- No juice

2008



2009



Australian growers are experts in RDI







# Thank you



## Any questions



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