Vigour Management

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Sept 2009
Developing Young Blocks
Growth Objective

<table>
<thead>
<tr>
<th>Growing season</th>
<th>Leader extension target (3.5m M9)</th>
<th>Leader extension target (4.0m M26 or CG202)</th>
<th>Percentage of Ultimate tree Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursery</td>
<td>1.5m</td>
<td>1.8m</td>
<td>45%</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>0.7m</td>
<td>0.8m</td>
<td>20%</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>0.6m</td>
<td>0.7m</td>
<td>17%</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>0.5m</td>
<td>0.5m</td>
<td>13%</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>0.2m</td>
<td>0.2m</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>3.5m</td>
<td>4.0m</td>
<td>100%</td>
</tr>
</tbody>
</table>
## Crop targets

<table>
<thead>
<tr>
<th>Growing season</th>
<th>Target crop load (t/ha)</th>
<th>Exceptional performance (t/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2nd</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>3rd</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>4th</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>5th</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>6th</td>
<td>65</td>
<td>75</td>
</tr>
</tbody>
</table>
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.
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.
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 cm²)
• Pest and Disease control
• Weed control
Monitor growth performance and be ready to act!
Controlling Excess Vigour
Branch Type and Pruning Style

>3cm per m, heavily shortened and upright

<3cm per m, weak shortening and pendant

= High vigour

= Low vigour
Pendant, simple, unmodified, weak shortening, <3cm/m, highly fruitful

= Controlled vigour
Crop Load

- Crop Load is the best vigour control
- 4-5 fruit per cm² BCA
- Understand your blocks optimum crop load per tree

Refer FO2012 Crop Load Notes
## Trunk Girdling and Scoring

<table>
<thead>
<tr>
<th>Grower developed tools</th>
<th>12 months after scoring</th>
</tr>
</thead>
</table>

![Image of a person scoring a tree trunk](image-url)
Girdling

Double C, 50mm overlap both ways, removes a proportion of phloem cells for a period.
Stem incisions using a chainsaw
Root Sawing
Root Pruning
Growth Regulators

- 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.
Australian growers are experts in RDI

2008

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

2009

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

Any questions