meeting the challenge

2007 NATIONAL APPLE & PEAR CONFERENCE
Profitability of Australian Orchards

Results to date

and

opportunities going forward

Ross Wilson
AGFIRST
August 2007
Highly successful with great grower participation.
September 2007 will be the 6th Orchard Walk with another 3 programmed this year.
AGFIRST have been joined by International and Australian experts
Wide range of orchard related topics discussed primarily in the field
Monitor Block program

- 108 of Australia’s top apple and pear blocks are within the MB program.
- All Australian growing states are involved
- Key performance indicators are being measured
- Data is available on the APAL secure web site
- Go to www.apal.org.au and USE THE RESOURCE

Block Code SA 17, Cripps Pink, M9, 2857 trees/ha, $50K/ha est cost, planted 2001 hence photo 6th leaf, 6400m³ TRV, 69,000 cm³ TCA/ha, 40t/ha (4th leaf), 26t/ha (5th leaf). 66t/ha (6th leaf)
Additional components

- Overseas study tour July 2008 to Europe.
- Seminar program carried out by AFFCO to complement OW’s (Presentations include: orchard costing, business planning, plant physiology)
- Youth Exchange program
- FO2012 Library Resource

FO2012 Library
www.apal.org.au
Gross yield vs profit
Cripps Pink 2006 FO2012

Block Profit ($/ha) vs Gross Yield (kg/ha)
Gross yield vs tree age

Cripps Pink 2006 F02012

TARGET
Tree Row Volume (TRV)

Cripps Pink 2006 FO2012

Tree Age (years)

TRV

target
Trunk Cross Sectional Area (TCA)

Cripps Pink 2006 FO2012

Tree Age (years)

TCA/ha

target
Key opportunities going forward

- Climate Modification
- Profitability Mindset
- Intensification using dwarfing rootstocks
- Access to new premium varieties and rootstocks
- Access to high quality nursery trees
- Increased rate of canopy development
- Increase in mature canopy volume and hence increased light interception
- Improved tree architecture maximising fruit quality and class 1 recovery
Climate Modification

- Netting providing protection against hail, sunburn, wind, drought stress, and potentially birds
- Matching water supply to production area and then using the irrigation water resource as efficiently as possible.
- Frost Protection
- Reflective foils for colour enhancement

QL10~ Frost free, netted, irrigation and foil
FROM
“I need to save costs”
TO
“The biggest cost to my business will be poor crop performance"
## New varieties and modern rootstocks

<table>
<thead>
<tr>
<th>Variety examples</th>
<th>Apple and Pear rootstocks</th>
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<tbody>
<tr>
<td>o New Cripps Pink selections</td>
<td>o M9</td>
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<tr>
<td>o New Aus. bred vars. eg RS103130, Western Dawn</td>
<td>o CG202</td>
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<tr>
<td>o High coloured Fuji strains eg Kiku,</td>
<td>o Malling Merton Series MM106 etc</td>
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<tr>
<td>o International releases Jazz, Galaxy, Mariri Red, Honeycrisp, Ambrosia, Tentation, Cameo etc</td>
<td>o Ottawa 3</td>
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<td>o Prevar releases</td>
<td>o Quince A, C and BA29</td>
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<td>o The list is endless</td>
<td>o BP1</td>
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High Quality Nursery Trees

- High quality trees
- Virus free
- True to type
- Nurseries supplying to a known specification with large well feathered trees being in good supply

European Knip Boom trees ready for planting
High Quality Nursery Trees

CG202 Autumn budded Tree just planted
To achieve high marketable yields there must be sufficient canopy (TRV) and tree potential (TCA)

- TRV target of 13,000 m³/ha or TCA 60,000 cm³/ha
- In Australia it's taking 18 years on average to achieve 13,000 m³ TRV in Gala
  - This is too long!
**FO2012 target rate of new canopy development**

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Yield (kg/ha)</th>
<th>TRV (m³/ha)</th>
<th>TCA (cm³/ha)</th>
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**How to achieve target**

- Precocious dwarfing or semi dwarfing rootstocks
- High quality nursery trees
- Planted intensively (2000-3000 trees/ha)
- Superior management in Years 1 and 2 that aims to maximize canopy development (soil prep, water, weeds, fert, p&d,)
- Tree canopy full of simple, calm fruiting units spread evenly throughout the whole canopy

Cripps Pink, Italy, 3rd leaf, 50 t/ha
Mature Canopies are often too small

NW13
- M9
- 1481 trees/ha
- 9th leaf
- TRV 2900m³
- Current yield = 50t/ha
- Potential Yield = 80 tonne /ha

FO2012 TRV mature target = 10,000-13,000m³/ha
Why are Australian canopies so small

- Aiming for pedestrian orchards
- Paranoia regarding OSH issues
- Often strict mindless adherence to simple pruning rules eg 3:1

Orchard canopies harvest light turning it into fruit.
Small canopies = small yield = small profits
Improved Tree Architecture

- Calm simple fruiting units spread evenly throughout the whole canopy
- No heading
- Limited shortening
- Fruiting units trained or allowed to drop into a flat or pendant position

High volumes of high quality fruit
Tree Architecture ~ from this
Tree Architecture ~ to this
Tree Architecture ~ from this
Tree Architecture ~ to this
Tree Architecture ~ from this
Tree Architecture ~ to this
QL10 stand up and be applauded

QL10
- Cripps Pink
- MM106
- 2076 trees/ha
- Planted 2002 therefore 5th leaf in 2006/07
- Branch bending ~ no heading
- TRV 6256 m³
- TCA 50,364 cm³
QL10 ~ Achieving a great result

QL10

- Gross Yield = 53 t / ha
- Class 1 packout 85%
- $2.62 average return/kg
- Block profit $120,000/ha

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Profitability of Australian Orchards ~ Absolutely possible and happening
ACKNOWLEDGEMENTS

Thank you