Future Orchards 2012

Cripps Pink
Monitor Block
Data Analysis

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AgFirst
Monitor Block Data Analysis

Will look at data:

• On an individual tree basis
• On a per hectare basis
• As individual case studies of high performing blocks.
Individual Tree Performance

Age vs TCA/tree

$R^2 = 0.3833$

- All Densities
- Under 1000 trees/ha
- 1001-1750 trees/ha
- Over 1750 trees/ha
- Log. (1001-1750 trees/ha)
- Log. (All Densities)
- Log. (Over 1750 trees/ha)
- Log. (Under 1000 trees/ha)
Individual Tree Performance

Age vs Gross Yield/tree

- Age vs Gross Yield (kg/ha)
- All Densities
- Under 1000 trees/ha
- 1001-1750 trees/ha
- Over 1750 trees/ha

Gross Yield (kg/ha)

Age

Log. (1001-1750 trees/ha)
Log. (All Densities)
Log. (Over 1750 trees/ha)
Log. (Under 1000 trees/ha)
Individual Tree Performance

kg/cm² vs TCA

R² = 0.0088

All Densities
Under 1000 trees/ha
1001-1750 trees/ha
Over 1750 trees/ha
QL10
Log. (1001-1750 trees/ha)
Log. (All Densities)
Log. (Over 1750 trees/ha)
Log. (Under 1000 trees/ha)
Per Hectare Performance

Age vs TCA/ha

- $R^2 = 0.5341$

- All Densities
- Under 1000 trees/ha
- 1001-1750 trees/ha
- Over 1750 trees/ha

TCA (cm²)/ha vs Age

- Log. (1001-1750 trees/ha)
- Log. (All Densities)
- Log. (Over 1750 trees/ha)
- Log. (Under 1000 trees/ha)
Per Hectare Performance

Age vs TRV

$R^2 = 0.2878$

TRV (m$^3$) vs Age

- All Densities
- Under 1000 trees/ha
- 1001-1750 trees/ha
- Over 1750 trees/ha
- QL07

Log. (1001-1750 trees/ha)
Log. (All Densities)
Log. (Over 1750 trees/ha)
Log. (Under 1000 trees/ha)
Per Hectare Performance

Age vs Gross Yield

-20000 0 20000 40000 60000 80000 100000

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Gross Yield (kg/ha)

All Densities

Under 1000 trees/ha

1001-1750 trees/ha

Over 1750 trees/ha

Log. (1001-1750 trees/ha)

Log. (All Densities)

Log. (Over 1750 trees/ha)
Per Hectare Performance

TCA/ha vs Yield

$R^2 = 0.4749$

Yield (kg/ha)

TCA (cm$^2$/ha)

- All Densities
- Under 1000 trees/ha
- 1001-1750 trees/ha
- Over 1750 trees/ha
- Log. (1001-1750 trees/ha)
- Log. (All Densities)
- Log. (Over 1750 trees/ha)
- Log. (Under 1000 trees/ha)
Per Hectare Performance

TRV vs Yield

$R^2 = 0.1804$

Yield (kg/ha) vs TRV (m$^3$/ha)

- All Densities
- Under 1000 trees/ha
- 1001-1750 trees/ha
- Over 1750 trees/ha
- Log. (1001-1750 trees/ha)
- Log. (All Densities)
- Log. (Over 1750 trees/ha)
- Log. (Under 1000 trees/ha)
Per Hectare Performance

Yield vs Profit

$R^2 = 0.8731$

Profit ($/ha$)

Gross Yield (kg/ha)

- Under 1000 trees/ha
- 1001-1750 trees/ha
- Over 1750 trees/ha

Linear (All Densities)

Standard returns:

- Class 1 $2.00/kg
- Class 2 $0.80/kg
- Process $0.10/kg
Per Hectare Performance

![Graph showing age vs profit with different densities.]
Orchard Case Studies
QL10

Cripps Pink on MM106 at 2076 trees/ha.

Planted 2002 on fumigated replant land.
Specific crop load 2007 1.05 kg/cm² = 5.84 fruit/cm²

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (tonne/ha)</th>
<th>Grade 1 Packout</th>
<th>Fruit Size Count</th>
<th>Profit/ha (standard returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd leaf</td>
<td>40</td>
<td>80%</td>
<td>NA</td>
<td>$50,511</td>
</tr>
<tr>
<td>4th leaf</td>
<td>35</td>
<td>43%</td>
<td>NA</td>
<td>$26,248</td>
</tr>
<tr>
<td>5th leaf</td>
<td>53</td>
<td>85%</td>
<td>100</td>
<td>$73,492</td>
</tr>
</tbody>
</table>
Orchard Case Studies
QL07

Cripps Pink on MM106 at 1333 trees/ha.

Planted 1997 on new orchard land.

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (tonne/ha)</th>
<th>Grade 1 Packout</th>
<th>Fruit Size Count</th>
<th>Profit/ha (standard returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th leaf</td>
<td>68</td>
<td>80%</td>
<td>120</td>
<td>$79,672</td>
</tr>
<tr>
<td>9th leaf</td>
<td>67</td>
<td>80%</td>
<td>113</td>
<td>$68,216</td>
</tr>
<tr>
<td>10th leaf</td>
<td>91</td>
<td>80%</td>
<td>112</td>
<td>$116,250</td>
</tr>
</tbody>
</table>
Orchard Case Studies
VC29

Cripps Pink on MM106 at 2514 trees/ha.

Planted 2000 on replant soil – no fumigation.

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (tonne/ha)</th>
<th>Grade 1 Packout</th>
<th>Profit/ha (standard returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th leaf</td>
<td>84</td>
<td>60%</td>
<td>$97,294</td>
</tr>
<tr>
<td>6th leaf</td>
<td>60</td>
<td>60%</td>
<td>$65,178</td>
</tr>
</tbody>
</table>
Orchard Case Studies
SA02

Cripps Pink on M26 at 2963 trees/ha.

Planted 2000 on replant soil – no fumigation.

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (tonne/ha)</th>
<th>Grade 1 Packout</th>
<th>Fruit Size Count</th>
<th>Profit/ha (standard returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd leaf</td>
<td>39</td>
<td>89%</td>
<td>NA</td>
<td>$54484</td>
</tr>
<tr>
<td>4th leaf</td>
<td>46</td>
<td>87%</td>
<td>NA</td>
<td>$66775</td>
</tr>
<tr>
<td>5th leaf</td>
<td>66</td>
<td>74%</td>
<td>110</td>
<td>$81783</td>
</tr>
</tbody>
</table>
Cripps Pink on M26 at 2857 trees/ha.

Planted 2001 on replant soil – no fumigation.

2007 produced 51.8 tonnes/ha gross with 80% packout.

2008 crop expected to be 20% down
– only 25 mm rainfall since November 2007
Orchard Case Studies
SA11

Cripps Pink on M26 at 2667 trees/ha.

Planted 1995 on replant soil – no fumigation.

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (tonne/ha)</th>
<th>Grade 1 Packout</th>
<th>Profit/ha (standard returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th leaf</td>
<td>77</td>
<td>70%</td>
<td>$85961</td>
</tr>
<tr>
<td>11th leaf</td>
<td>48</td>
<td>91%</td>
<td>$69646</td>
</tr>
</tbody>
</table>
Orchard Case Studies
SA19

Cripps Pink on M9 at 5000 trees/ha planted in a double row V-trellis system.

Planted 1999 on replant soil – replanted after one year with mustard crop as a bio-fumigant.

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (tonne/ha)</th>
<th>Grade 1 Packout</th>
<th>Profit/ha (standard returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th leaf</td>
<td>89</td>
<td>73%</td>
<td>$124103</td>
</tr>
</tbody>
</table>
Cripps Pink on M26 at 2962 trees/ha.

Open tatura system with 4.5 m x 0.75 m spacing

Planted 2000 on replant soil fumigated with Chloropicrin.

<table>
<thead>
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<th>Fruit Size Count</th>
<th>Profit/ha (standard returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7th</td>
<td>80</td>
<td>83%</td>
<td>105</td>
<td>$108239</td>
</tr>
</tbody>
</table>
Gala on M26 at 3809 trees/ha.

Spindle trained with 3.5 m x 0.75 m spacing

Planted 2006 as feathered rods on new orchard land.
Orchard Case Studies
VC48

Cripps Pink on M26 at 1586 trees/ha.
Spindle trained with 4.2 m x 1.5 m spacing
Planted 2006 as rods on new orchard land.
Orchard Case Studies
September 2006

VC46
2962 trees/ha

VC47
3809 trees/ha

VC48
1586 trees/ha
Orchard Case Studies
September 2006

VC46
2962 trees/ha

VC47
3809 trees/ha

VC48
1586 trees/ha
Orchard Case Studies
March 2007

VC46
2962 trees/ha

VC47
3809 trees/ha

VC48
1586 trees/ha
Orchard Case Studies
March 2007

VC46
2962 trees/ha

VC47
3809 trees/ha

VC48
1586 trees/ha