

## NOVEMBER 2011 FUTURE ORCHARDS WALK

### Producing High Quality Fruit

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When Future Orchards 2012 started in September 2006, the main problems identified by a well-known and respected Australian apple grower mirrored many issues we at Agfirst observed. Those concerns were:-

- “yields are too low” as tree height was insufficient
- “Early yields from young trees were also too low – (young trees not performing to potential and not being pushed hard enough)”, Ian Armour, June 2010 orchard walk.

There were other problems, but most revolved around these issues. One issue that we constantly came up against and still do, is that of growers focusing on cost saving and not investment maximising. If I had received a dollar for every time that we heard that M9 or dwarf trees won't grow in Australia like they do in New Zealand, I'd be very rich today from this.

Five years on most would agree the some of these issues have been satisfactorily tackled. Time has proven, that with the right growing approach, which includes increased tree density, improved nutrition, pruning, irrigation, support structures, pest and disease programmes etc., that world class results can be achieved in young tree/orchard development. A significant paradigm shift has occurred by most growers whom now accept world class performance from younger trees is achievable. The quest continues.

To me, this paradigm shift was significant. Australian growers now believe you can achieve world best practice with new planted orchards, even when the trees you are provided with from the nursery are not up to the standard you would like.

#### **Now the paradigm shift must move towards increased fruit quality.**

Why was it relatively easy to achieve a change in young orchard development? Part of this paradigm shift is you have all been prepared to invest time, technology and money into making this happen. You are to be congratulated. The interesting thing is that it wasn't that difficult. Growers started to use the tools and technology that had been available for many years prior. Ian Armour summarised his progress over those five years and I believe it accurately reflects many growers development over this period.

#### **“What changed from 2006?”**

- Young blocks are now more intensively planted, better fertigation and nutrition programs are used, lower non-productive branches are removed sooner and training of branches below the horizontal is standard practice.
- In older blocks, more tree height has increased yields to 80 tonne/ha, we focus on calming trees down using Regalis™ growth regulator, root pruning, rolling over tops to below



horizontal. More aggressive spray thinning – use of ATS , fruit counting, hail netting and better support structures.”

As a consequence Ian noticed “staff morale has improved due to simpler and better defined systems” and “biennial bearing issues have been addressed, through adoption of all these tools and more”.

Overall you would think a satisfactory result, but Ian goes on to say “we are growing more even crops of better quality fruit with a higher pack out, however head winds have strengthened and these changes have come at a financial and liquidity cost.”

To continue forward, further paradigm change is required if you want to match and better your competitors. **The production of good volumes of “High Quality” fruit per ha has to become the norm. This begs the question, what is the quality standard you need to reach?**

The following summarises the produce specifications from your major supermarket retailers and a comparison with a typical New Zealand exporter. Overall the standards are not too different except in some key areas.

Table 1: Pink Lady Quality Specifications

	Woolworths	FreshSpecs	NZ exporter
<b>PINK LADY</b>			
Colour (%)	> 50%	> 50%	≥ 40%
Size	>64-72mm	>64-67mm	>65mm+
Maturity - Brix	>13.5% SS	>13.5% SS	>13.5% SS
<b>Minor Defects</b>			
Superficial bruises	<2 cm <sup>2</sup>	<2 cm <sup>2</sup>	<1 cm <sup>2</sup>
Healed injuries in skin (hail marks, limb rub)	<1 cm <sup>2</sup> aggregate	<1 cm <sup>2</sup> aggregate	<1 cm <sup>2</sup>
Stem end russet	<6 cm <sup>2</sup>	<6 cm <sup>2</sup>	<10%
Cheek russet	<2 cm <sup>2</sup>	<2 cm <sup>2</sup>	<1 cm <sup>2</sup>
Dropped shoulder angle from calyx	<15°	<15°	<15°
<b>Major Defects</b>			
Physical/ pest damage cuts, holes cracks or wounds (broken skin)	stem punctures <3/carton	stem punctures <3/carton	
<b>Consignment Criteria</b>			
Total minor defects/apple	<2	<2	-
Total minor defects / consignment	≤10%	≤10%	<6%
Total major defects /apple	<2	<2	-
Total major defects / consignment	<2%	<2%	<2%
Combined total defects	<10%	<10%	<6%
Shelf Life from receipt	≥8 days	≥14 days	100 days

The Pink Lady standards are set by the governing board and therefore are very similar irrespective of which country they are exported from.



Table 2: Royal Gala Quality Specifications

	Woolworths	FreshSpecs	NZ exporter
<b>ROYAL GALA</b>			
Colour (%)	> 60%	> 60%	≥ 66%
Size	>64-67mm	>64-67mm	>60mm
Maturity - Brix	>12.0% SS	>12.0% SS	>10.5% SS
<b>Minor Defects</b>			
Superficial bruises	<2 cm <sup>2</sup>	<2 cm <sup>2</sup>	<1 cm <sup>2</sup>
Healed injuries in skin (hail marks, limb rub)	<1 cm aggregate	< cm <sup>2</sup> aggregate	<1 cm <sup>2</sup>
Stem end russet	<6 cm <sup>2</sup>	<6 cm <sup>2</sup>	<10%
Cheek russet	<2 cm <sup>2</sup>	<2 cm <sup>2</sup>	<1 cm <sup>2</sup>
Dropped shoulder angle from calyx	<15°	<15°	<15°
<b>Major Defects</b>			
Physical/ pest damage cuts, holes cracks or wounds (broken skin)	stem punctures <3/carton	stem punctures <3/carton	
<b>Consignment Criteria</b>			
Total minor defects/apple	<2	<2	-
Total minor defects / consignment	≤10%	≤10%	<6%
Total major defects / consignment	<2%	<2%	<2%
Combined total defects	<10%	<10%	<6%
Shelf Life from receipt	≥8 days	≥14 days	120 days

Reviewing the fruit specifications for both varieties, there appear very few differences. Colour requirements are slightly higher in Australia for Pink Lady, however with Royal Gala, some NZ exporters pack banded colour lines 50%-75% as one grade and 75%+ as high grade. The colour standard depends on the marketer and its market requirements.

Fruit size requirements are similar, however this is sometimes governed by the OECD minimum standard. Small fruited varieties are allowed to pack down to 60mm and large fruited varieties down to 65mm.

Fruit finish such as superficial bruises are lower, and certainly more stem punctures are allowed in Australian retailers. However this might be due to the 10-14 days shelf life compared with New Zealand exporters requiring growers remain responsible for “inherent problems” with fruit up to 100 days from harvest. Any inherent problems up to 100 -120 days after harvest are the responsibility and cost of the grower. Although this sounds harsh, both are not too dissimilar when Australian fruit has been coolstored for the same time as the NZ inherent vice. One standard is at the market door and the other is at the coolstore door, ready for market. Over the length of the storage season, they are not too dissimilar. The major difference lies in the allowable tolerances which are less in NZ 6% compared to 10% in Australia.

Perhaps a major difference is Australian retailers have the potential flexibility to make changes to these specifications to take into account of any specific regional effects or adverse seasonal impacts on quality . With NZ exporting fruit to the other side of the world means any product not meeting the minimum OECD class 1 standards is either dumped for juice or downgraded to class 2 and sold



for a significantly lower price (often below the cost of shipping). Another interesting difference in the world fruit market is if you can't meet the retailer's standards, due to climatic conditions they will replace your product not meeting their requirements with that from another supplier or country. There is plenty of fruit awash in the world market place and consumer quality will not be allowed to suffer. **Moto, if you don't supply to the customers standard, someone else will.**

Branding has reduced the standing of some NZ exporter's fruit, as retailers have taken over the brand. In other words, fruit sold into a retailer such as Tesco's is branded Tesco fruit and there is little evidence to signify the country of origin or the exporter/growing a region. Exporters have lost the ability to differentiate their fruit, now the branding is controlled by the retailer.

### **The consumer is always right.**

When all is said and done, we still have to listen to the consumer. That is one area that must always be addressed. HAL have reported "a lack of consumer satisfaction". Fruit in general, rates 7 out of 10. Apples are lower at 6 out of 10 which is acceptable but not as high as it should be. A score of 10 is perfect, but difficult to achieve. **The biggest problem they state for apples is that "there isn't any consistency of product and consumers need to love the product".**

How can the grower achieve high volumes of high quality fruit? Improved eating quality is one attribute that will have significant benefits. Craig Hornblow in March 2006 –spoke about the first step in this process with his presentation "More is not always better". He spoke about maintaining an open canopy to keep fruit in the light and to help achieve this.

In another earlier FO2012 presentation, the following quote was used to highlight:-

- (i) Sunlight is the guarantee for quantity and quality and
- (ii) in the shadows grows only little fruit of poor quality. Therefore we must strive to position our production in the sun. Vigh J., Italy, Compact Fruit Tree, Vol 37, 2004.

This requires a calm tree. Previous FO2012 presentations have covered this in detail. It includes better pruning, fertiliser, irrigation, vigour control, crop loading chemical thinning etc.

Crop loading also has a major impact on fruit out-turn, and this was well covered by a presentation written by John Wilton and Ross Wilson on FO2012 November 2007. This should form the basis of your crop loading strategy. Match variety, trees size, canopy volume along with limitations imposed by seasonal weather conditions, climatic site conditions and finally market requirements (fruit size, colour, length of selling season). Like making young trees grow, this too takes a paradigm shift. The tools are here now, are you using them?

Extreme temperatures can also affect quality. Innovative growers are coming up with ways to lessen climate impact on fruit quality. These include hail nets, overhead irrigation, mulching, sunscreen sprays, etc.

Finally Desmond O'Rourke highlighted in his FO2012 presentation, 3 keys to prosperity:

1. Increase productivity and value of output per unit of input
2. Embrace technology
3. Systematic removal (troll your own and other businesses for ideas).

**The paradigm shift continues as the reality of dealing with retail chains and managing consumer expectation is that if you don't look after the consumer, someone else will.**

