

Future Orchard 2012 – Batlow, NSW Orchard Walk 7 September 2006

The walk was held on the 7th of September from 12pm to 5pm at Wilgro Orchards, Batlow

Attendance:

Ross Wilson (AgFirst)
Julie Dart (facilitator)

Attendees: 22 (head count) as below

Growers who signed on	Other attendees noted
James Turtle	Matthew Skein
Mark Herring	Michael Smart
Beth Dodds	Graham Coventry
Liza Connolly	Marcel Veens
Peter Forsyth	Ralph Wilson (HOST)
Mick Hardwick	
Bruce Wilkinson	
Jeff Kynaston	
Angela Kennedy	
Steve Bunter	
Greg Winzer	
Warren Duffy	
Ron Gordon	
Greg Mouat	
Rob McLeod	
John Leijer	
Peter Wilknson	
Darral Ashton (APAL)	

Attendees highlighted in yellow are people associated with monitoring blocks in Batlow.

28 folders were distributed to attendees, at the orchard walk and the MB meeting.



Ross Wilson talks to the Batlow group.



Ross talks about canopy measurements.

Notes from the orchard talks:

- Julie Dart welcomed the group to the orchard walk and thanked Ralph for hosting the event
- Darral Ashton spoke on behalf of APAL

Ross Wilson’s Talk

- Ross started by talking about the need to increase quality and consistently supply fruit at a profit
- No reason why Batlow can not be a world class production district

WHAT IS WORLD CLASS? - WHITEBOARD

- Sustainable, mature yield greater than 50tonnes/ha
- 45 tonnes plus MARKETABLE yield
- Rapid yield accumulation

2 nd leaf	3rd	4th	5th	Mature
10 T/ha	20	30	40	45

- High class 1 recovery- at least 85%
- Crunch, flavour and appearance
- Variety- pays well, preferred by buyers
- Differentiated- possibly organic
- Environmentally sustainable- SAFE, nil residue
- Consistent production
- Hail netted to maximise class 1 pack out

INTENSIVE PLANTINGS (DWARF STOCK)

PRO’S	CONS
<ul style="list-style-type: none"> • Reduced cost of production • Efficiency of canopy- fruit to tree row volume • Consistent quality • High early production • Less ladders • Easier to manage • Simplification • Improved quality- colour, flavour, higher sugar, better shelf life 	<ul style="list-style-type: none"> • High establishment cost • More precise irrigation management, due to smaller soil water buffer for small root zone • No room for error • Machinery size • Higher level of grower & nurseryman skill required

- NZ Braeburn- costs \$18 to grow (carton) returned \$9. Ross has decided to plant other varieties that return a profit
- Options for NZ growers:
 1. go organic
 2. Jazz on M9 (80% of new plantings) returns \$35 per carton
 3. Red Fuji
- NZ used to produce 8 million (cartons?) Braeburn, this will drop to 5.5, and 7 M royal Gala- will drop to 5

The world scene

- In Italy, land is very expensive at \$700, 000 per hectare compared to Batlow at \$2, 000. The average Italian grower farms 2-4Ha, it is around 15 ha in Batlow (small family farms).
- Average Yields- Italy 50T +/-ha, NZ 42T/ha, Batlow 25T/ha
- In France where land is cheaper, most plantings are M9 at 2,000 trees/ha
- In New York State, 2,000 to 3, 500 trees per hectare on m9 and CG series rootstocks.

SO WHAT IS A “WORLD CLASS” SYSTEM FOR BATLOW?

- Intensive orchards on M9 or M26 rootstocks

LAND TYPE	ROW SPACING	TREE SPACING
Flat (for Batlow- mild slope)	3.25-3.5m	0.8-1.2m
Hilly- lots of side slope	3.5 minimum- 4m 4.5m if really steep	0.8-1.2

THE LENSWOOD TRIALS (page 11 in notes)

- 25% IRR is a very good return
- Cripp’s Pink at 2,000 to 3,000 trees per ha- IRR about 25%. This drops off at higher densities (see graph in printed notes)
- In comparison, returns for Cripp’s Red in the trial are marginal (at around 12% IRR)
- In the New York trials, 2,200 trees per ha gave the best investment return (notes p12)

New Zealand

Tree density Trees/ha	667 on 106	1250	2500	2500 (high input)	3030
IRR	6%	15%	20%	24%	24%

You need around 2,500 trees per Ha in NZ to make money
Jazz- IRR = 35% at the moment

Q- So how long do you reckon we have, until we have to look at densities again?

Ross- depends on the variety; we thought Braeburn has been around 35 years (?), Gala 25 years.

WHAT ARE THE WORLD CLASS “BEST BETS” FOR BATLOW?

- Red Fuji (Aussie shoppers don’t like striped Fuji- unlike the rest of the world)- provided it can be consistently cropped
- Pink Lady- both standards (growers say they have the best eating quality) and red sports such as Rosy Glow and Ruby Pink
- Red Delicious (Marcel)- Is Batlow already “world class” for this variety with Smart Fresh - most growers will need to manage existing trees well, rather than going to the expense of replanting
- Red Gala strains- Galaxy, Buckeye & Brookfield

The wish list – yet to be proven in Batlow

- Jazz (provided growers can get it)
- Honey crisp? Ralph has some trees that he is reasonably happy with. It is a different apple.

KEYS TO SUCCESS

- Must get trees up high fast- a canopy row volume of 10,000 to 11,000 cubic metres on M9 is required to get world class tonnages
- Fruit quality at 15,000 cubic metres struggles due to shading in the canopy
- PROFIT= PRODUCTIVITY & QUALITY
- If there are issues with colour with the chosen varieties, extenday mat can help, but you must get the TRV right first
- Target 7 fruit per square cm of Butt Cross sectional area on M9 for good fruit size in NZ- this measurement factor is only relevant for the first 10 years of a trees life, but is a good indicator of the trees productive potential

Farm walk- led by Ralph Wilson

Block 1 Monitor Block:

Cripp's Pink on M9 (1996) and Grafted Cripp's pink on Jonagold on M9 (grafted 2000 & 2001)

4m x 1.75m



- It took 4 years to graft over 7,000 trees
- Advantages: grafts grew really well on an established root system. There were lots of side shoots early
- Produced 25T/ha (2006)
- Rows are 4m, If this was done again he would grow trees at 3.5m x 1m- trees have too much space in this block
- Used extenday last year with good quality result

Pruning

- Takes out big limbs from the tops of the trees
- Uses the ½ trunk rule in the tops and 2/3 rule in the lower tiers
- Don't want any big branches in the orchard. At the moment trees are spaced too wide, so some branches are larger than Ralph would like to fully utilise the space

Hail net

- The local contractor charges about \$45,000 per hectare
- Did own for \$26,000, sourced own contractors. The trellis is built onto the netting posts to save money

Ross's comments:

- Flat or slightly pendant branches are good – grow quiet fruiting units of good quality
- Branches have good angles
- 2:1 rule is working well
- With a 5th year scion, 25T/ha is probably not high enough- would target 50T/ha
- Trees are nice and calm, but probably not big enough – they are growing at half throttle at the moment

- There is a row that could produce 35T/ha
- Need to either grow larger wood low in the tree, or expect lower yields
- Ralph: net profit/ha is the driver, tonnage is not everything, this block is returning around \$500 a bin (360kg) – standard Cripp’s pink
- Goal- to get to 45T (high quality) within 5 years, 15T/ha may not be profitable in the future
- Ron Gordon: if the block was planted at 1m spacings, productivity could have been 40% higher
- On replant ground, need more like 3,000 trees/ha to get the canopy fast with M9, or 2,000 trees on virgin ground
- How high? 3m on 3.5m rows, 3.4m on 4m rows. In Italy tree height + row width.
- Ron: Simon Middleton’s work suggests that in Australia it is a waste to grow trees any taller than 3.5.
- Ross: You would need to go to 3.5m high to do 54-50T/ha on this block

Block 2: Cripp’s pink on M9 (planted 93). 3.5m x 1.3m



- This block has produced 70T in the past, but produced 40T in the last 2 years
- They are older trees that were let go about 4 years ago, not pruned properly
- This winter Ralph chain sawed the tops and removed over large limbs
- Last years 40T crop should have been 60T but it was all small fruit
- We need to look after our older trees
- This is a replant site, and there is a need to put more growth into the canopy early
- We need to learn how to manage replant ground better.
- Ross: in NZ they get 30% better growth using chloropicrin fumigants- why don’t growers fumigate here?
- Ralph- here, its because he is trying to use less chemicals (personal philosophy)
- Ron- it’s mainly because there are no local fumigation contractors, so it is hard to get it

done. Here the district has focussed more on Phosphorus and pH. Soils MUST be tested before planting because there are issues with aluminium toxicity in the area. 106 rootstocks have not been successful on replant ground because it is susceptible to *Phytophthora*.

- Ross: In NZ M9 works better in replant situations than M26
- Ross: is concerned that there are not enough buds in this block (Ron Gordon has been counting buds during the talk). Ron: the block could pull 40T this year if Ralph keeps doubles in the tree.
- Scion rooting is a problem in this block due to nursery trees grafted low
- In M9 the length of the shank determines size. A 20cm shank will have the maximum dwarfing effect (use on strong soils). A 10cm shank is better for weak soils as it allows more vigour
- There are problems with scion rooting, due to the use of tree planters (trees also tend to sink) and short shanked trees

The talk then turns to wood:

- You can get long, pendant wood on M9 (Italy), the branches can stay in the tree for quite a few years if it is well placed.
- Need the right type of wood
- Greg M: How do you get light wood in old trees?
- Ron: the tree should throw new shoots in the care patches because there is lots of light
- Ross: would like to see 15, light fruiting branches in each tree. Bend it into place, don't cut it
- Ron: need to be careful not to run wood too long – it affects colour
- Ralph: prefers wood to drop under fruit weight once trees are older, rather than using lots of string

Block 3- Rosy glow, grafted onto Jonagold on M9 in 2003

This block is similar to block 1, both in spacing and growing technique

- Ralph prefers to cut upright out, rather than tying them down
- It is really expensive and time consuming to tie
- Uses rubber bands to train new blocks- they don't strangle the tree and naturally break off after the branch has set
- This block has grown better than the monitor block
- Grafting over can be a success

Training:

- Depends on the block
- Ross: In NZ aim to train 10 branches per tree. Costs \$1 per tree
- You probably will need to train young trees if you force early growth by fertigation

Block 4: Rosy Glow on M26 (planted 2004) 3.5M X 1.2M

The only reason M9 was not used was that the nursery was short of M9, so decided to supply them on M26

- These trees are way behind
- Ralph is disappointed, because he considers this to be his most well prepared block. He used 25T/ha cow manure, lots of Kelp, humic acid and fish emulsion. Ralph prefers a more "organic" approach to soil management. Some urea gets used in autumn to clean up the leaves, and because he doesn't use "chemical nitrogen" he applies more sprays of light rates of urea than most growers in the area. Overall he would end up applying a third more urea than most growers would for black spot control
- Ralph was short of water when it was needed towards the end of the season. He wants to get strategies in place for good early growth

Block 5: Brand new Ruby Scarlet (CP strain) on M9

- Trees are 2 year olds from the nursery, but are barely more than rods
- Water management in the first year needs to be excellent to power the trees
- Ideally would want the root zone to be near field capacity for the whole season
- Force feed new trees via fertigation in the first year
- We are lucky that Australia doesn't have apple leaf curl midge. That and powdery mildew in NZ can really wreck young trees in the first year

- Steve: at our place we fertigate young trees fortnightly to get them growing well on replant ground
- Ralph will trellis early. Trees have only been planted 3 weeks ago, wants to get trellis up in next 2 weeks
- Ron: we need to get M9 to grow like 106- water and fertigation is the key
- Using inline (60cm spaced) drip on this block. Is aiming to have the root zone wetted as a continuous strip
- Will water twice a day for 1 – 1.5 hours
- Ross: you must keep M9 growing, if they stop in the first 2 years you're stuffed!

Block 6: Honeycrisp on M9 (planted 2003?) 3.5 x 1m



- Ross: This is world class!
 - Ralph: this variety is very biennial. It had no crop last year, 35T the year before
 - Thinning sprays are the key to manage biennial bearing, hand thinning is not so effective
 - The block has not yet been chemically thinned, but there are plans to use 2 x ATS, 1 NAA and maybe a secondary thinner
 - Ron: suggests using Ethrel to thin
 - Will leave the tops to tip over this year
 - As M9 is a weak stock it is important to support trees within 0.5m of the ultimate height.
 - At 3.5m rows, need to buy at 3.6m post, rammed to 0.7m= 2.9m of post above ground
- Must keep the tops upright to 3m
 - 12m between post – this is really too far apart for the height
 - If you are aiming for a 35T crop that is a lot of load on the trellis, you really need posts to be 7-10m apart, and 3m above the ground (3.6m posts)- this would cost \$8,000 NZ \$