

Future Orchards 2012
Orchards walk 7, 14th November 2007

The talk component of the meeting was held at Batlow RSL club starting at 1pm, followed by “Wilgro Orchards” where the orchard walk was hosted by Ralph Wilson.

14 growers and 2 technical reps attended the meeting. Apology D Ashton.

Guest speakers: Martin Thomann & Bernhard Botzner (South Tyrol)
AgFirst: Ross Wilson

The event was advertised via local fax list and also a story was run in the Tumut & Adelong times the previous Friday.

Technical Talks as per notes in Web Library

Orchards walk discussions at Wilgro:

The walk started at a young block of Cripps Pink on M9, planted a year ago.



RW: This block was planted last year; the trees with yellow guards were planted this year as replacements for last year's losses. The trees were better quality than most I have been sent.

Ross- Martin, do you have any comments on the block?

MT: Next time I would take the low branches off at planting. Maybe head the trees if there are not enough useful feathers so you can grow branches where you want them. (Do this in winter, not now).

GM: How far back would you head them?

MT: Take about 20cm off the tops. If the tree has good feathers, leave it alone. Head soon after planting if needed. Bend the branches at the end of the season (late summer). If bent too early the tips will grow upwards again.

If trees are headed, take away any strong branches that grow from the heading cut.

RW: We have a problem getting trees to feather evenly along the trunk when headed; they mainly grow just under the heading cut at the top.

MT: Need to head in winter

RW: We used to head everything, now not so much as we've been told not to.

MT: If you need to, do it at planting. The tree will still grow as well in the first year. Don't wait until next winter, as the regrowth will be too strong.

RG: If you leave too many side shoots under a heading cut, it can constrict the top. If there's not four shoots produced I'd take them all off, otherwise the shoots will be strong and could end up dominating the leader.

MT: I would bend these shoots, this reduces the problem because then they are not upright.

Ross: Any branch that is greater than 50% of the trunk diameter must come off (2:1 ratio).

The 3:1 "rule" is too harsh and will take out too much vegetative growth that is needed to fill the canopy in the first few years. Bending branches stops apical dominance.

RG: We have discouraged heading rod trees. Any breaks will come out with good angles if left alone. When we head we tend to get 3-4 steep shoots.

MT: I agree when there are a few feathers, don't head. If there are no branches or they are too low, then head the tree at planting.

RC: Don't they get the amount of growth we do in Italy?

Ross: We focus on driving the top up; we think natural branching is good. It seems to be the reverse in Europe. We are really dealing with a different environment.

RG: If you take this tree and force it (with fertigation) you will get breaks (branching) without needing to head it

MT: We will also get that without heading, but it takes longer to fill the space. Only need to head whips

RG: This tree was a whip last year, and has filled out....

MT: You need to head trees in closer spaced blocks

RC: You (MT) seem to worry about the "Base" of the tree first, not the top like us.

RG: Ralph, what is your irrigation regime?

RW: We will water 2hrs daily, or up it to 2 x 2hr later. We are going to fertigate.

RG: The trees should meet up by Christmas

RW: We hope so, that why we bought the mulch. We have twice the water we had last year, hoping to get a bore in soon (when we can get a contractor to come and drill).

Ross: Martin & Bernhard, how do you grow trees in South Tyrol? How do you establish on replant ground?

MT: We prepare the soil, deep rip to get out the old roots (in autumn). Then we look at soil organic matter, incorporate nutrients. We want to be sure the roots will develop well. We drain wet soils. Our trees come from nurseries in the Netherlands (from cool storage) so we soak the whole tree for a day in water to re-hydrate them before planting. The larger the trees, the more likely they will have dried out.

RW: What fertilizers do you use?

MT: We fertilize when trees are growing. 3 or 4 lots of NPK fertilizer in spring, spread by hand on the root zone.

Ross: That's about 15g of Nitrogen per tree per year. For a 3000 trees/ha block this works out at 45 units of N/ha.

JT: A block we saw in Victoria was using 50 units per application, giving a 15T crop in the second year.

Ross: They don't need to force trees as much in Europe

RW: Our climate's harsh, not consistent weather. I don't think 15g N is enough. We need them to grow quickly.

RG: Martin what about mature tree rates?

MT: Mature trees get 50-70 units N.

Ross: We need to make the most of what we've got. Focus on water, weeds and fertilizers. At Stanthorpe the growth was a bit better (they just had 100mm of rain), so the whole country was jumping. They weren't thinking of irrigation, but when we checked the soil the top 2 inches was dry, only 2 weeks after the rain!

MT: root development on dwarf stocks is flat (horizontal). Regular water is needed more often, especially when branches are growing. You need to keep the topsoil moist on young trees.

Ross: *having just checked the soil under the mulch.* Here the root environment is close to optimal for water. It's not waterlogged. It's good. We need to have active root growth in young M9 for as long as possible to get good tree growth.

RW: It was pretty depressing last year. The trees stopped growing early as there was no water spare to get them to grow.

Ross: The organic matter levels will increase over time, but what the mulch is really doing here is conserving soil moisture, which is really good.

WD: Martin, do you rest your land for 12 months between plantings?

MT: No. We replant as soon as possible, no fumigation. We do see better growth on virgin ground. We can't wait, all the land (small parcels) is fully used up.

Ross: 1 square metre of soil in the South Tyrol area is worth 60€ (euros) - that's about 1 million dollars (Aus) per hectare.

JD: Our soils are also different, probably not as fertile, low OM?

RW: Our OM here is around 3-5% (which is good) do we need to go higher?

MT: That's the same as us.

BB: Our soils are alkaline (6.5-7)

RW: Ours are acid (4.5-5)

MT: We would try to plant new trees off the old rows where this is possible.

JT: It's not about growing a (nursery) tree in the orchard over there. The trees are bigger at planting.

RG: Ralph, Would you take the flowers off these trees this year?



RW: No I want to let them set, but I did hand thin to singles 2 days ago. The reason for this is that I read (and John Wilton also said) that setting a little fruit helps hormone balance in young trees. The BA in the seeds helps growth. Last year I took all the flowers off, took out new competing shoots and singled out the growing tips.

RG: There are a few forms of BA formed by seeds, but not all of them will increase leaf growth. We take our fruit off on young trees.

LEFT: Bernhard demonstrated how he ties trees to trellis, note that the tree can't rub directly on the trellis wire

Cripp's Pink on M9, 5th leaf.



branch angles. Fuji is more vigorous and would need more training. These are good trees!

Ross: *Talking about crop load:* These trees are in their 5th leaf, and are still narrow 20cm above the graft. TCA should work here. Measuring the circumference is more accurate than callipers. *Ron worked out the TCA was 13.6cm² on one tree.* This tree is M9; we are happy with the canopy development, don't need to push tree growth.

RW: I am working on a crop factor of around 7-8.

Ross: Typically on M9, 3rd leaf we need to develop the canopy. The crop factor would be around 6-7 to balance with growth. Imagine this block a few years ago. You could expect the following crop factors to apply:

Year 3: 6 fruit/cm².

Yr 4 7-8

Once canopy is full, around 10

Here we will choose a crop factor of 8, which equals 109 fruit/tree (31.3T/ha)

RW: I was working on 90 pieces / tree when I did bud counts. I was aiming for 40T/ha. Last year the trees suffered drought stress, fruit had hail and cracked. I am aiming for a lighter crop to help the trees recover.

Here the trees were delivered with very long rootstock shanks.

Ralph planted them higher than usual in an effort to avoid scion rooting and control size, however they were still planted lower than the nursery would have intended!

RW: These rootstocks were "smooth" to start out, but then became rough at about the 3rd leaf.

Ross: Those shanks are 30cm long- It's really too high and we would expect growth to be weaker.

RW: We haven't done much bending here; we rely of natural fruit weight. We did tie the first few down in the first year. We also have tied some of the tops to control them.

Ross: Martin, any comments?

MT: These are good open trees, good

Ross: Let's work on a 40T crop target as an example.

$40\,000(\text{yield in Kg}) \div 2898 (\text{trees/ha}) = 13.8\text{kg per tree (in the bin)}$

At 5 pieces/kg (200g) = 69 pieces per tree

Loss factor of 7% (culls, damage) = 74 pieces per tree target

(Ralph works on 10% loss = 76 pcs)

To work out crop factor from TCA:

$74 (\text{pieces per tree}) \div 13.6 (\text{TCA}) = 5.5 \text{ fruit/cm}^2$

A crop factor of 5.5 is low for a mature M9 canopy, but this reflects Ralph's recovery objective this season.

Use both TCA and Target yield counts to cross check crop loads, if you can.

RW: This year fruit set is lower than expected, so will thin purely for cosmetic reasons later (summer).

Honeycrisp Block on M9

RW: This block I tried something different. I have "pruned" by breaking out branches- no secateurs. I rip out upright shoots, break out the laterals to a single lined branch. I try to keep the trees calm.

Honeycrisp are VERY biennial.

MT: These trees are well trained, all I'd do is take out inside (shaded) branches. Only when there is less vigour than you'd like cut them to take out strong side branches for more light.



BB: These are calm trees- leave them alone!

1988 Royal Gala on MM106, 4.5m x 2m (1111 trees/ha)- photo on left

RW: These were planted in the first year of release here, when we were into wide tree & row spacings. We had frost last year, and hail the last 5. I am long pruning this block, with the lowest branches longer and wider to fill the space.

MT: This block is very good!

The meeting concluded after looking at another 2 blocks at 5pm