

Thinning Strategies: Build a Plan

Craig Hornblow, Agfirst

We tend to hear talks and read a lot about the thinning chemistry we use, how they work and when to use it, but with decades of experience we still get varying results. Why is crop load management not a simple structured system instead of a complicated art form? I believe a lot of our variation in results is not the chemistry we use but the biennial nature of growers. We all blame the trees but at times we can overreact from year to year as well as the trees.

All through the thinning period I get calls asking ‘what rate?’, ‘today or tomorrow?’, ‘what about this block it’s different, I think?’, ‘ANA or ATS?’, ‘what rate of BA again?’.

In the heat of the battle we seem to be jumping around a lot where, with a little planning, we should be limiting the decisions during flowering and fruitset to a few key variables.

I think one of the areas we need to focus on to improve thinning results is the variability within blocks and application, we need to integrate these with our understanding of the tools and what we want the results to be.

I want to build a thinning strategy as a process covering key areas:

- Clear objectives
- Block to block and within block variation
- Understanding the tools
- Application options
- The final plan

Objectives

Growers all have different marketing channels and can also have slightly differing requirements for size, colour and quality. “One size” does not fit all! It is also important to communicate to the rest of the staff in your business what you are trying to achieve so everyone is on the same page. Bienniality may also be a variety issue that needs to be focussed on as a variety, rather than just block to block. Different strains of the same variety may need slightly different strategies due to colour and market options.

I have started to build the following plan up variety by variety rather than block to block as I see more similarities between varieties, but you can do either. Through these notes I will add more to the plan as an example.



eg, Starting the plan

Variety	Objective	Block variations	Strategy
Pink Lady	<ul style="list-style-type: none">• 55 tonne/ha• Medium size, 180g fruit (70 mm)• Colour and ease of picking		

Block to Block and within Block variations

Recording and reacting to variations between blocks is critical to achieving the desired result. Things to consider might be:

- Tree Age
 - It's not just size but smaller trees are easier to apply chemicals to as well as being more sensitive to chemistry.
- Detailed Prune
 - We have talked about more detailed pruning to specific bud numbers over the last few visits. The information about bud number variation between blocks will guide you as to where more or less effort needs to be directed.
- Volume of spurs to 1 year wood
 - Quite often I see growers going out and applying ATS over all Royal Gala blocks creating all sorts of variation. Young and vigorous blocks will benefit from later applications to remove unwanted 1 year wood while spurred blocks will need earlier, closer timed sprays to impact on compact flowering.



These 2 trees need very different thinning jobs.

- Flowering variation
 - Wet blocks, or wet areas within a block, put trees under stress and are unlikely to set well
 - Planting orientation of east/west can create considerable variation between either side of the tree, and thinning these on different days with differing chemical rates may be appropriate
- Pollination
 - Poor pollination due to isolation of a block from an adequate cross pollination source which may mean less fruit set and less thinning is required.
 - Also outside rows and headlines set more so increase the thinning.

The more specific you can be about these issues the easier it is to shift thinning from an art form to a science. Being specific also helps with communication between those involved.

eg, Plan continued

Variety	Objective	Block variations	Strategy
Pink Lady	<ul style="list-style-type: none"> • 55 tonne/ha • 180g fruit (70 mm) • Colour and ease of picking 	<ul style="list-style-type: none"> • Home Block. Progressive flowering lots of 1 year wood: • Shed Block. Vigorous tree east/west flowering differences 	

Understanding the tools

There is a lot written about the range of thinning tools, bloom thinners to secondary thinners. John Wilton's 'Future Orchards' article in September 2007 and Sally Bound's articles in the *Tree Fruit* over previous years are both excellent articles in understanding the use of a range of chemistry.

Everyone has many years of experience to call on but invariably people always ask me the same questions about water rate usage, concentrate etc. All these questions should be asked and answered well before you need to act.

90% of the time you can decide on many aspects of thinning two months from thinning by calling the block managers together to review past diaries and results. You will find you can decide many things that won't change during the thinning period, e.g. the active ingredient rate, the water rate and the variation around timing. These are not variables to be left until flowering. Lock them down and then during flowering focus only on the things that change and your response to that, like the weather.



Write up a table like the one below that is suitable for your orchards.

Product	Active Ingredient Rate	Water Volume	Variations
ATS	1%	1500 full dilute adjust rates for other blocks by tree size Sprayer calibration 1.	Do not apply if rain expected within 24 hours
ANA	7ppm	1000L Sprayer calibration 2.	Do not apply under 15 C Wait for temperature

Ethrel may need a specific table relating rate with forecast temperature.

eg, Plan Continued

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Pink Lady	<ul style="list-style-type: none"> • 55 tonne/ha • 180g fruit (70 mm) • Colour and ease of picking 	<ul style="list-style-type: none"> • Home Block. Progressive flowering lots of 1 year wood: • Shed Block. Vigorous • East west rows 	<ul style="list-style-type: none"> • ATS ½, top 1/3, (if warm use ANA in tops), calibration 2 • Carbaryl be careful with bottoms. • Carbaryl late only west side

Application

First, ensure the basics like agitation, nozzles and filtration. I have seen many examples of poor sprayer setup and operation with ATS. Poor agitation causing burning and excessive thinning at the start of spraying and nothing after that. Blocked or worn nozzles giving a strip of thinning through the tree (photo below) etc, all very visual problems which growers attribute to ATS only. However, it might just be that other applications could have similar problems and it's just that we don't see it as clearly as we do with ATS, we only notice a variation in thinning result and blame it on the weather.





Specific burning from ATS

Make sure operators understand the sprayer calibrations and report any change in pressure or output which is likely to indicate problems.

With younger, intensive plantings good spray coverage is easier to achieve and appropriate rates need to be considered. These plantings are also likely to be more consistent with light conditions through the canopy and full coverage is likely. As planting age and tree height increases it will be harder to target the tops of trees because of the narrow row width, adjustments in calibrations and the use of small tower sprayers is highly likely.



older intensive plantings can also be hard to spray the tops

The Plan

Now you're set to follow the plan through, eg:

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Lastly, ask yourself 'what are the variables that would cause to me alter the plan?' The answer always seems to be weather. So again, think about your response now and write it down.

For example:

If it was cold and flowering was draw out.

Substitute ANA for ATS

Warm and flowering compact

Substitute ATS for ANA.

Frost early in flowering

Delay first thinner

Spend a little time putting the plan together and integrate the various aspects of thinning to make the decisions around thinning a little less hectic and the results a little more reliable.

