



Optimising Chemical Thinning Removing some of the magic arts

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AgFirst



Introduction – Presentation summary

- Setting the target
- Historical information
- Chemical thinning fundamentals
- The new plan
- Boots on the ground
- Take home messages





Setting the targets





What does good look like for your blocks?



- Fruit size by variety.
- Max yield (at the size and quality)
- Canopy limitations - (% full, km of fruiting wood)
- Location limitations – (Pest/Disease/ Water/Soil/Heat)
- Hand thinning spend risk
- Over chemical thinning risk



Optimised crop load management

Optimized block target

- Market wants - Yield / Size / Quality
- Historical block results (including biennial status)
- Tree metrics – TCA, Canopy, tree age

Prune to the target

- Actual bud # vs target buds = What?

Assess flowering

- Include chill hrs and pollination weather

Set chemical thinning targets

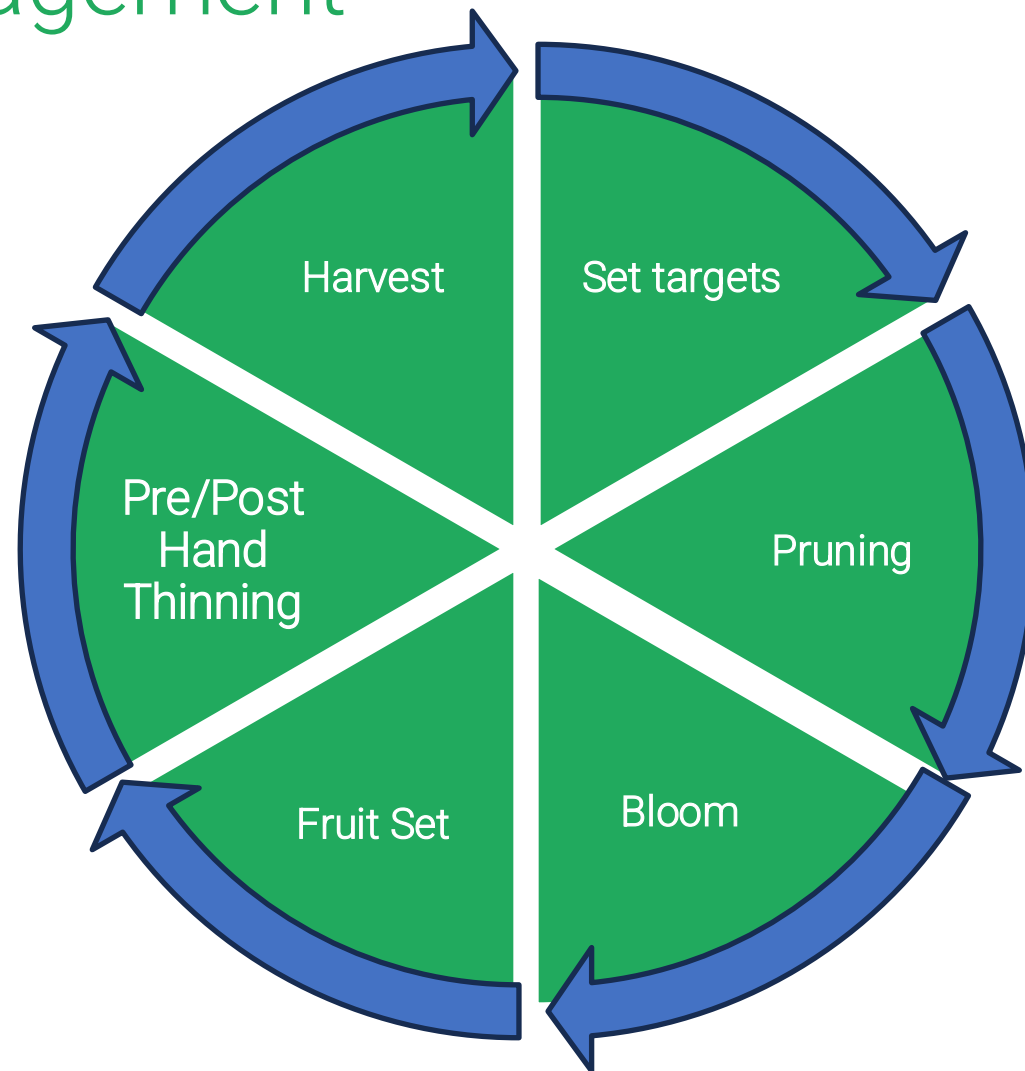
- History, block target, pruning and conditions
- Adjust on the day if needed - Weather

Hand thin based on need

- Counts, priority, timing, rules to thinners
- Use post thin counts to finalise harvest yields

Harvest

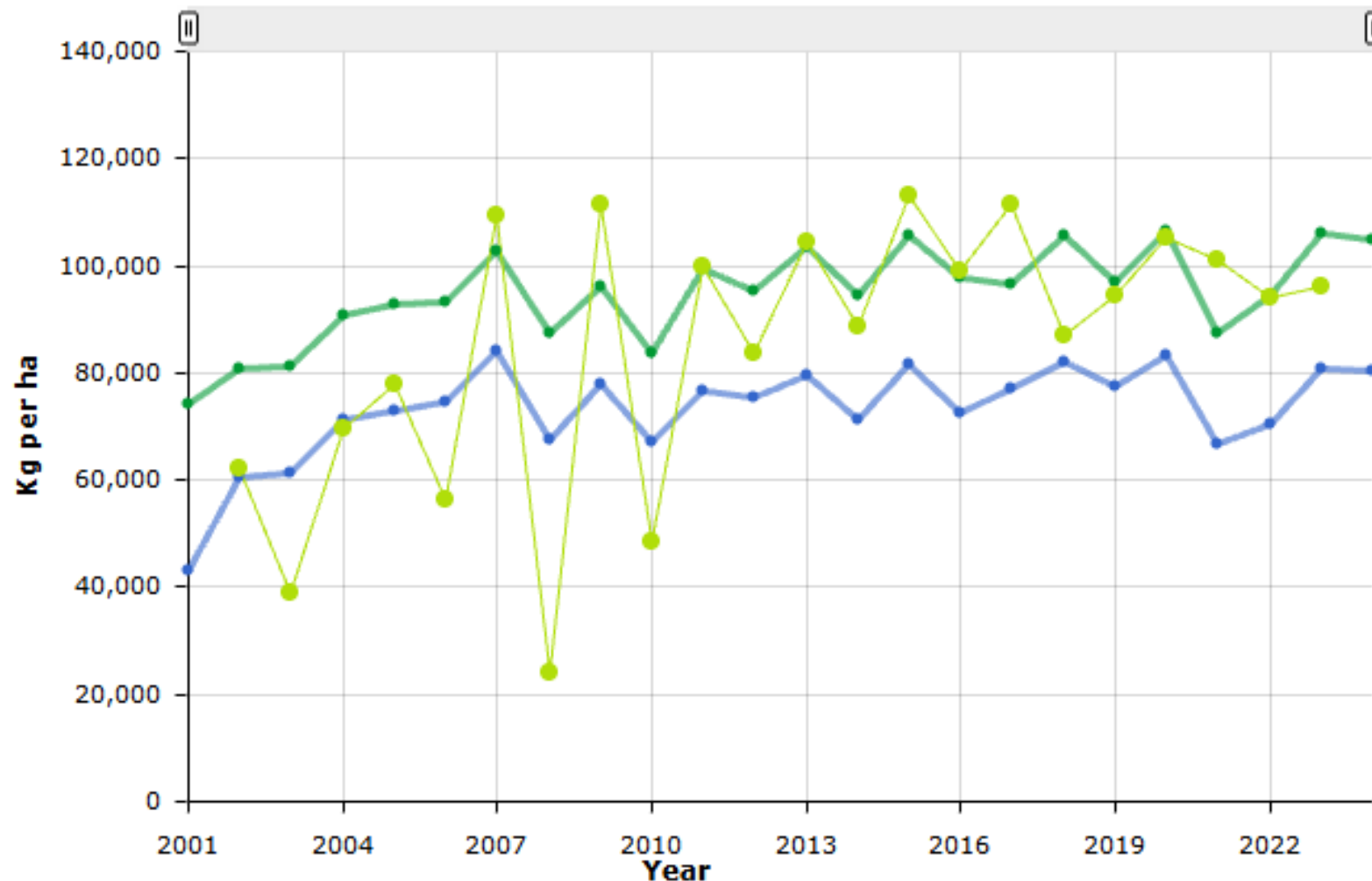
- Review harvest yield, fruit size and pickout% for next year





Historical Info

**What can you learn
from history?**





Previous target vs result

Targeted fruit aims (yield, quality, size)
Historical and current.

- Did the fruit results match expectation
- Actual yield vs targeted yield
- Was the result positive or negative for quality and size.





Previous conditions Buds / Flowers / Weather

- Historical or current winter bud counts (vs target)
- Biennial bearing status (last yr)
- Historical flower cluster counts (vs target)
- Use of dormancy breakers (vs length of flowering)
- Historical winter chill
- Historical pollination weather





Previous bud load and quality



- *Assuming a post thinning fruit target of 350 fruit / tree @ 6 flowers per fruit bud on every bud.*

- A very heavy bud load @ 5 buds / fruit = 9000 flowers / tree.

- Shift 96% of the flowers - and space the fruit in singles

- A very light bud load @ 0.5 buds / fruit = 1050 flowers / tree.

- Shift 66% of the flowers - and the fruit needs to be in doubles





Previous application information

- What chemistry including surfactants
 - What rates including surfactants
 - Where in the tree have you been targeting
 - What timing - Flowering vs fruitlets.
 - What was the weather
-
- **What would you like to do differently?**





Previous hand thinning requirement – How much was needed

- Pre and post hand thin counts (last year)
- How easy was it to set the rules for the thinners
- How even was the crop spread throughout the tree
- Was the cost of hand thinning within expected budget





Chemical thinning fundamentals





• **TARGET**

Tree profile

- Variety, age, size
- Health and vigour

Canopy balance

- Light status
- Wood balance

Fruiting pressure

- Crop load
- Pollination strength

• **WEATHER**

Temperature

- Heat and frost risk
- Day / night profile

Conditions

- Wind and humidity
- Rain and sunshine

Spray window

- Weather prediction vs reality
- Opportunity vs timing

Chemical Thinning – Key Influences

Outcomes depend on a combined total impact of the Target, the Weather the Chemistry and the Application.

• **CHEMISTRY**

Product fit

- Mode of action
- Rate and surfactant

Use conditions

- Water rate
- Uptake / dry time

Timing fit

- Growth stage
- Weather window

• **APPLICATION**

Spray method

- Concentrate vs dilute
- Sprayer type

Set-up quality

- Water quality
- Agitation and filtration

Execution

- Target zones
- Coverage consistency



Orchard factors – What impacts results

Factors making thinning easier:

- Vigorous trees
- Upright branches
- Young unsettled trees
- Dense trees - shaded fruit buds
- High vigour
- Waterlogged root systems
- Nutrient deficiency – N, B....
- Lack of pollination
- “Off” crop year - weak flower
- Compressed blossom periods (inter-fruit competition)
- Shy setting varieties
- Netting

Factors making thinning harder:

- Weak growing trees
- Pendant branches
- Mature well settled trees
- Open trees - good canopy light levels
- Trees on dwarf rootstocks
- Healthy trees
- Well balanced nutrition
- Strong cross pollination
- Sparse, but strong blossom
- “On” crop trees
- Extended flowering periods
- Cultivars that consistently set heavy crops
- High carbohydrate production into fruit

Make sure the plans are block specific, suitable for the target.



The Plan



Chemical Thinning Plan Season Ending 2026



Crop Stage	Date Applied	Product	Rate/100	Rate/ha	Water Rate	Total Water	Nozzle Config	Notes
560 TeAute-A ~ Front-Brookfield 560								
Full bloom + 2	15/10/25	NAA(10%)	16 mL	144 mL	900 l/ha	324	Bottom 3 off	Dropping rate to 16 mls due to 793 rootstock. Average het followed
		Regulaid	250 mL	2250 mL				
		Buff-IT	50 mL	450 mL				
8-12 mm fruitlets	30/10/25	BA(10%)	180 mL	1620 mL	900 l/ha	324	Bottom 3 off	
		Regulaid	250 mL	2250 mL				
		Buff-IT	50 mL	450 mL				
Dazzle Grafts 560 2.5m								
Full bloom	09/10/25	Ethephon(48%)	60 mL	540 mL	900 l/ha	630	Whole Tree	Being conservative with the Ethrel rate this first year , sprayed front third on the 10th , 50ml because of heat
		Regulaid	150 mL	1350 mL				
8-12 mm fruitlets	20/10/25	BA(10%)	180 mL	1800 mL	1000 l/ha	700	Whole Tree	Hot for the next 3 days.
		NAA(10%)	12 mL	120 mL				
		Regulaid	250 mL	2500 mL				
		Buff-IT	50 mL	500 mL				
13-18 mm fruitlets	30/10/25	BA(10%)	160 mL	960 mL	600 l/ha	420	Top Half	Trying an ethrel and 2 BA approach to break the biennial cycle , next year increase Ethrel to 75 mls Still a big handthin completed 27/11/25
		Regulaid	250 mL	1500 mL				
		Buff-IT	50 mL	300 mL				
Dazzle Trees 560 ex Fuji land								
Full bloom + 2	05/10/25	NAA(10%)	16 mL	144 mL	900 l/ha	515	Whole Tree	Not using ethrel here due to low vigour
		Regulaid	250 mL	2250 mL				
		Buff-IT	50 mL	450 mL				
8-12 mm fruitlets	16/10/25	BA(10%)	180 mL	1620 mL	900 l/ha	515	Whole Tree	28/10. Look done
		NAA(10%)	12 mL	108 mL				
		Regulaid	250 mL	2250 mL				
		Buff-IT	50 mL	450 mL				



Chemical Options - What to use and how?

- ***If it's not broken don't fix it***
 - Don't change for change's sake.
- ***Try not to over complicate the process***
 - Chem rates / water rates / weather / growth stage
- ***Target optimum weather over optimum growth stage***
 - Weather pre during and post application is key
 - Know your products and read the labels
- ***Product rates, surfactants and growth stage will have differing effects.***
 - Standardise these as much as possible.



Chemical Options – Tips and tricks

Bloom / Flower thinning:

- Ethephon
 - Pink / Balloon blossom
 - Needs heat
 - Keep away from frost and flood
 - Can decrease vigour
 - Helps with return bloom
- ATS
 - Early flower (pre pollination)
 - Does not need heat
 - Keep away from re wetting
- NAA
 - Full Bloom and later
 - Needs heat
 - Risk of pygmy fruit in some varieties - Fuji

Fruitlet thinning:

- BA
 - Needs heat
 - Increases fruit size independent of thinning
 - Not particularly aggressive unless hot temps
 - Fruit size????
- Metamitron
 - Works best on low carbohydrate production
 - Does not need heat
 - Needs shady days
 - Clear warm days and cool night not as good
 - Can over thin depending on rate etc.
 - Fruit size????
- Accede (1 ACC)
 - Have you trialed it?

Mixes are also options

Optimum growth stage windows can change quickly

If conditions are not correct move onto the next suitable choice.



Weather

Weather often determines the effectiveness of a chemical thinner application.

Weather factors affecting application include:

- **Temperature** – Response, respiration, slow drying, stress.
- **Humidity** – Slower drying, better uptake, more russet risk.
- **Wind** – Coverage, uptake, stress, cuticle formation.
- **Rain** Wash off, re activation, phyto toxicity
- **Frost** – Over thinning (stress) russet.
- **Hail netting** – Less cuticle, better uptake, slower drying, shade.
- **Winter Chill** – Condensed bloom

Conditions can change the application outcome, or create the need to change the application



Spray Application

The way the sprayer is set up and applied can also vastly influence results.

- **Method** – Concentrate vs dilute, water rates, sprayer type
- **Set up Quality** – Water quality, filtration, agitation, nozzle types, droplet size
- **Execution** – Target zones, calibration, coverage consistency

**Aim to get the application as good as it can be for the target.
Different targets and product choices might need different applications.**



What will help you decide to keep the plan or change?

Counts

- Bud numbers after pruning – what are they vs target and history?
- Flower cluster count – Shows if the winter buds were viable or not

Weather

- Was the winter chill good? How does it compare to history?
- Is the pollination weather good? How does it compare to history?
- Is the weather around the chemical thinning timing suitable for the product you have chosen?
- Do you have a Plan A and a Plan B depending on the weather?

Should you change something in the chemical thinning because of the counts or weather data?



Boots on the ground





Take home messages:

- Collect and fully utilise your historical information
- Know what good looks like for you and plan to make it happen
- Be all over the fundamentals of Chemical Thinning
- Create a plan, track KPI's to see if it needs adjustment
- Get boots on the ground – constantly monitor each block
- Measure the final results - Clearly record what you want to improve

Thank you