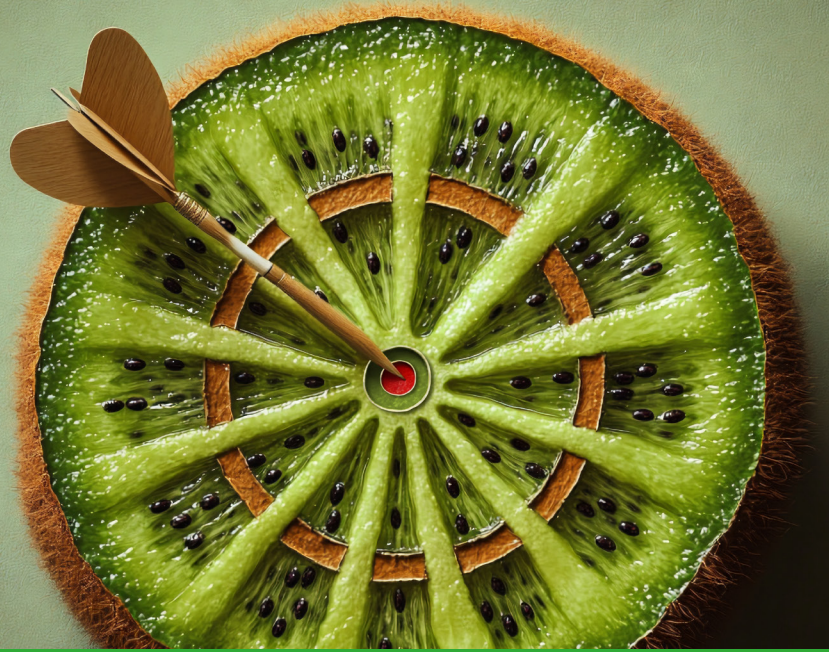


# HITTING THE BUD-BREAK BULLSEYE



Can growers have a product that is **Effective and Safe?**

Like all companies, kiwifruit growers are in business to make profit. That means consistently hitting the highest yields for the lowest costs.

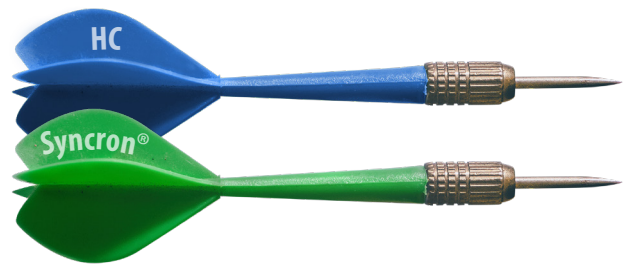
The key is a product that breaks buds effectively. For 35 years, *Hydrogen Cyanamide* has been the bud-enhancer, trusted to deliver that yield.

**It almost hits the Bullseye.**

**Where Hydrogen Cyanamide misses the mark is in SAFETY.**

It is well-established that Hydrogen Cyanamide exceeds toxicity levels at crucial points, which is why the industry has been looking for a safe, high-performing alternative.

**Is Synchron® the Bullseye answer?**



**FOUR YEARS OF TRIALS: The results are in.**

Over a four-year period, researchers from three independent organisations have carried out trials, some under the oversight of Zespri. All trials were randomised and were replicated in multiple orchards in several regions.

### THREE CLEAR OBJECTIVES

1. To discover if Synchron® could match Hydrogen Cyanamide's *performance* in breaking buds.
2. To determine if Synchron® is *safe* – remaining within globally accepted boundaries.
3. Establish clear protocols for using Synchron® – to make it easy for growers to try Synchron® without risk, and in ways that add value to their existing operations.

# BREAKING BUDS EFFECTIVELY

## HITTING THE YIELD SWEET SPOT

The *Yield Sweet Spot* is the ideal balance between fruit volume and fruit size. **It's where growers make their biggest returns.**

In defining the sweet spot, there isn't a Holy Grail number to aim for. In reality, **there are two Holy Grail ranges.** For fruit volume, it's 50-70 fruit/m<sup>2</sup>. For fruit size, it's 110-160g.

### The Holy Grail Volume Range: 50-70 fruits/m<sup>2</sup>

The ideal range of 50-70 fruits/m<sup>2</sup> strikes a balance between maximising yield and ensuring fruit quality. This range allows the vine to support enough fruit to fully utilise its nutrient capacity, but without overloading it.

## THE TRADE-OFF

Because of a vine's limited resources, a trade-off occurs. As fruit volume goes up, fruit size comes down.

### Too much Volume?

A high Bud Break percentage and the resulting fruit volume can be detrimental to financial returns. When fruit numbers exceed the vine's nutrient supply, competition for resources causes nutrients to be spread too thinly. The result is smaller fruit.

Hitting the Sweet Spot requires growers to strike the right balance.

### Added Labour Costs

To avoid missing the Yield Sweet Spot, growers must thin their over-burdened vines.

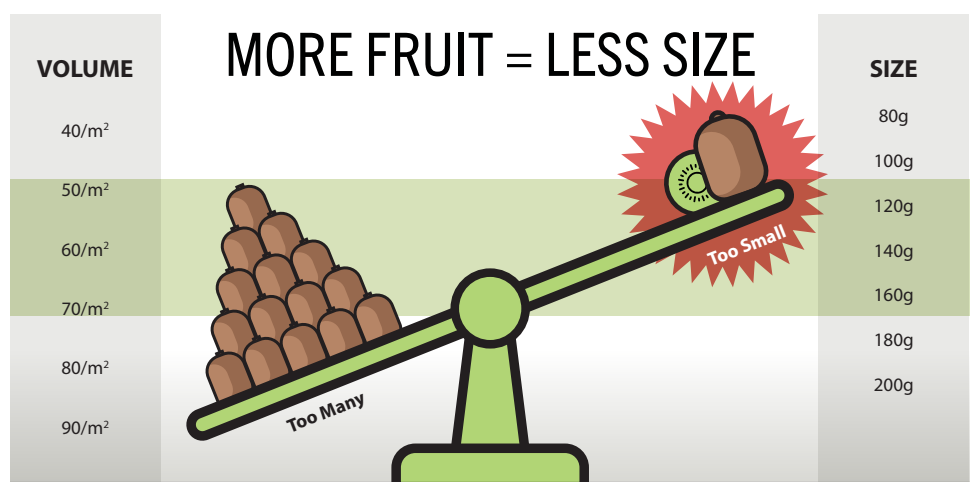
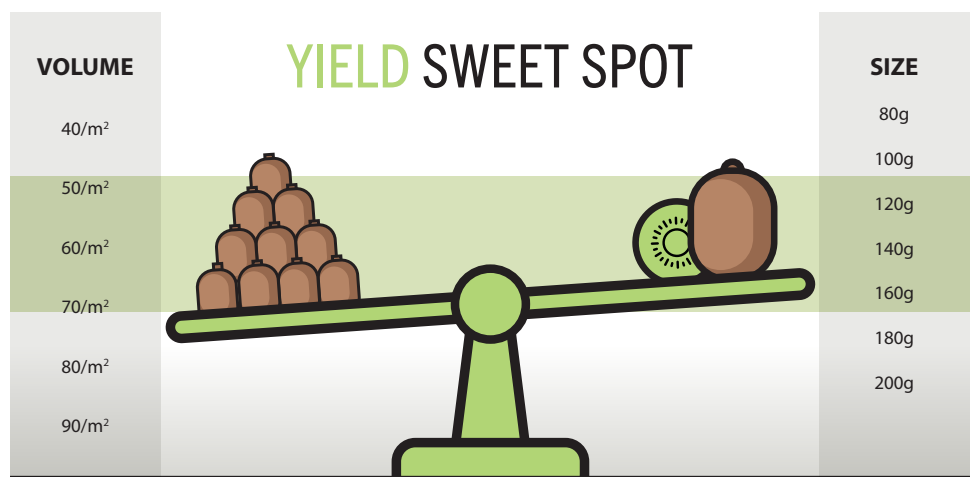
Above 70 fruits/m<sup>2</sup>, nutrient competition can become intense. When nutrients are spread too thin, the result is smaller fruits that are less valuable in the market. Overcrowding also causes uneven ripeness.

Conversely, if volumes drop below 50 fruits/m<sup>2</sup>, the vine's potential is underutilised, resulting in lost productivity and revenue.

### The Holy Grail Size Range: 110-160g

110-160 grams per fruit is ideal for premium kiwifruit in domestic and export markets. Fruits within this range meet consumer preferences for visually appealing, well-sized produce, while ensuring consistent nutrient density and taste.

Fruits smaller than 110g often fail to meet market grading standards, reducing their value and marketability. Fruits exceeding 160g risk structural weaknesses, cracking, or uneven ripening.

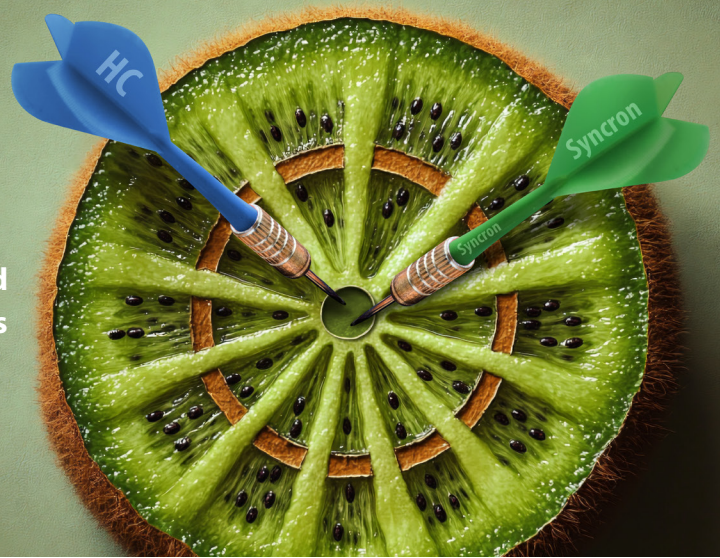




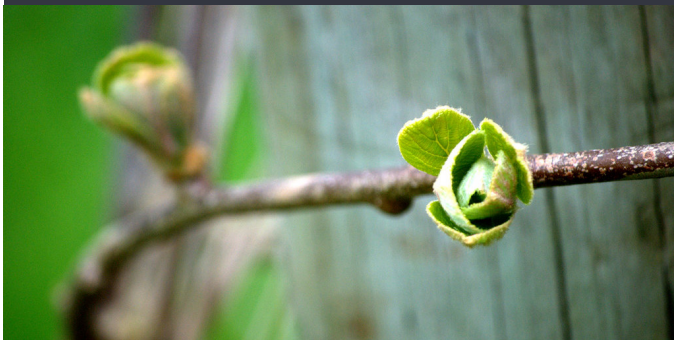
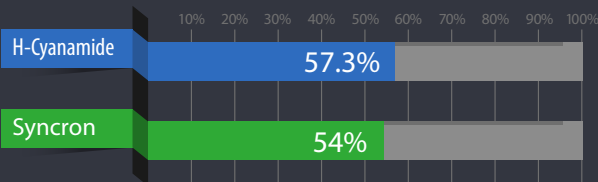
# PERFORMANCE RESULTS

Over the four years, randomised and replicated trials were designed to measure the key drivers that determine fruit volume and fruit size.

1. Bud Break Percentage
2. King Flower/Bud
3. Lateral Flowers/Bud



## Bud Break Percentage



## King Flowers/Bud

H-Cyanamide

1.79

Synchron

1.53



## REPLICATED TRIALS: FOUR YEARS OF DATA FROM 17 INDIVIDUAL TRIALS.

- ▶ **Extensive Replication for Reliability:** Each trial included up to eight replicates per treatment. This ensured statistical confidence in findings.
- ▶ **Both Green & Gold Varieties Tested:** Trials covered Gold3 and Hayward Green, establishing the effectiveness of Synchron® across cultivars.
- ▶ **Comparison Against Industry Standards:** Synchron® was tested against Hydrogen Cyanamide and untreated controls for direct benchmarking.

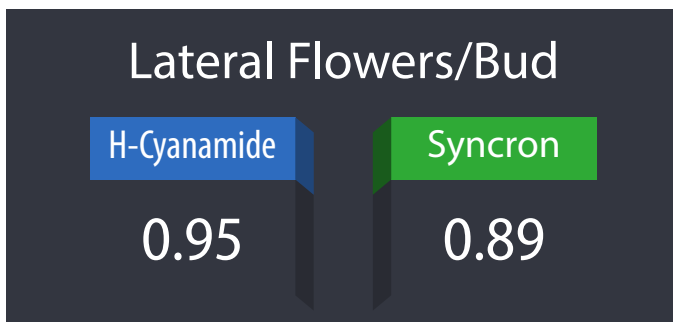
- ▶ **Trials align with New Zealand's EPA regulations and Zespri's crop protection standards,** making Synchron® a fully compliant, grower-ready alternative.
- ▶ No significant differences between treatments were observed at any of the assessment timings for bud-break percentage and final bud-break percentage.
- ▶ No significant differences between treatments were observed for:
  - **shoot type:** floral or non-floral
  - **flower type:** king, double or triple per winter bud
  - **flowering compaction**

“ If your bud breaker produces s\*\*\*loads, then you’ve got s\*\*\*loads to pull off. Thinning costs can be as high as 13k a hectare. There seems to be a tipping point of around 16 to 17,000 trays a hectare where dry matter starts to become problematic. For me, around 50 fruit/m<sup>2</sup> is a good place to make money. ”



**DAVID KELLY: Kerikeri Grower Comparative Trial Participant**

# THE FINAL RESULT

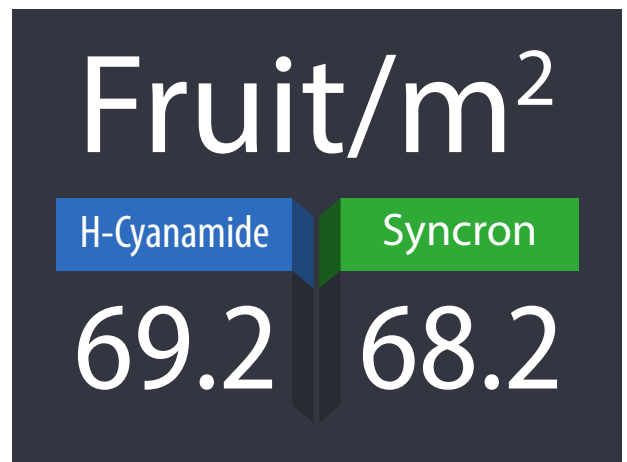


## COMPARATIVE TRIALS IN COMMERCIAL ORCHARDS

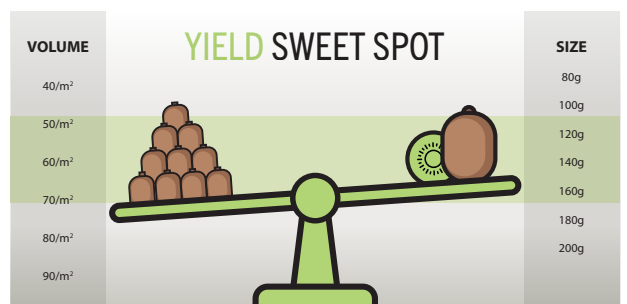
- ▶ Data was collected from seven comparative trials completed in commercial orchards. This data was not included in the replicated research.
- ▶ Grower feedback was incorporated into trial assessments, allowing researchers to evaluate practical usability, application logistics, and operational efficiency.

### Grower’s comment and analysis:

- ▶ Synchron’s® performance compared favourably to Hydrogen Cyanamide.



- The total yield/m<sup>2</sup> is best summarised by what is harvested. There was no statistical variation between Synchron® and Hydrogen Cyanamide.
- Yield specifics vary, and while 50-70 fruit/m<sup>2</sup> is often considered the sweet spot, different management practices and/or outside influences can alter these numbers.
- After four years of trial work and multiple grower appraisals, we are satisfied that Synchron® will give growers a viable alternative for stimulating dormant bud movement.





# SAFETY: ONLY ONE HITS THE MARK

The world demands a safe bud breaker

Europe banned the use of Hydrogen Cyanamide as a bud breaker in 2008. With our own possible ban approaching, NZ has been seeking a Next-Generation product that is effective and safe.

**Synchron® has passed the test.**

Synchron® gives you:

- Peace of mind about your health, and the health of your workers and neighbours
- Fewer requirements to follow:
  - ▶ no buffer-zone requirements
  - ▶ no weather restrictions
  - ▶ no spray-drift restrictions
  - ▶ no restricted entry intervals

## Hydrogen Cyanamide

Hazard Type	Category	Severity
Acute oral toxicity	3	High (toxic if swallowed)
Acute dermal toxicity	4	Moderate (harmful to skin)
Acute inhalation toxicity	4	Moderate (harmful if inhaled)
Skin irritation/corrosion	1	Very High (causes burns)
Serious eye damage	1	Very High (causes permanent damage)
Skin sensitisation	1	High (may cause allergic reactions)
Reproductive toxicity	2	Moderate (suspected fertility harm)
Specific target organ toxicity	2	Moderate (organ damage over time)
Hazardous to terrestrial vertebrates	2	Environmental hazard to wildlife
Hazardous to terrestrial invertebrates	2	Environmental hazard to insects (e.g., bees)
Hazardous to soil organisms	2	Environmental hazard (soil health)
Hazardous to the aquatic environment	3	Moderate (long-term aquatic impact)

## Synchron®

Hazard Type	Category	Severity
Acute toxicity	Not classified	Levels too low to detect/classify
Aspiration hazard	Not classified	Levels too low to detect/classify
Respiratory irritation	Not classified	Levels too low to detect/classify
Skin corrosion/irritation	Not classified	Levels too low to detect/classify
Serious eye damage/irritation	Not classified	Levels too low to detect/classify
Respiratory or skin sensitization	Not classified	Levels too low to detect/classify
Germ cell mutagenicity	Not classified	Levels too low to detect/classify
Carcinogenicity	Not classified	Levels too low to detect/classify
Reproductive toxicity	Not classified	Levels too low to detect/classify
Specific organ toxicity	Not classified	Levels too low to detect/classify
Narcotic effects	Not classified	Levels too low to detect/classify
Ecotoxicity	Not classified	Not classified as being ecotoxic

# SYNCRON® HITS THE BUD-BREAK BULLSEYE



## SECURING THE FUTURE



*"Even though we have been given legal licence to use Hydrogen Cyanamide, we may not have social licence or acceptance. So why not adopt a sustainable, long-term alternative? Synchron is safe and effective - let's learn how best to use it"*

**ALAN DOBBIE:** Craigmore Sustainables project manager (Kerikeri)  
Comparative Trial Participant

# USE SYNCRON<sup>®</sup> IN BUFFER ZONES

ZESPRI HAS BEEN CLEAR WITH GROWERS:  
HYDROGEN CYANAMIDE CAN NO LONGER  
BE USED IN DEFINED BUFFER ZONES.

## THESE BUFFER ZONES INCLUDE:

- *Bystander areas* (e.g., public spaces, roads, neighbouring properties)
- *Waterways* (streams, ponds, drainage)
- *Sensitive, non-target plants* (including areas with threatened plant species)

## THIS PUTS GROWERS IN A TRICKY SPOT

### 1. Filling in the spray diary:

- ▶ Growers are reluctant to sacrifice fruit yield by leaving these zones unsprayed, or treated with ineffective products.
- ▶ The uncomfortable alternative is to use Hydrogen Cyanamide and fudge the diary.
- ▶ **Spray with Synchron<sup>®</sup> and solve both problems**

### 2. Talking to neighbours

- ▶ Discussing toxic spray with the neighbours is tricky, especially when children are involved.
- ▶ **Spray with Synchron<sup>®</sup> and know you're using a safer, non-toxic alternative.**

## PRACTICAL TIPS FOR USING SYNCRON<sup>®</sup>

1. Concentrate the area to be sprayed in required buffer zones, or where your most spray-sensitive areas are located.
2. Try to make the sprayed area as practical as

possible (partial tanks or spraying just the end of rows can be time-consuming. It will be easier spraying the whole block)

3. If in doubt on DBB timing or application process, ask your advisor or spray rep.



## 6 VIDEOS



1. Change Has To Come
2. The Trials Explained
3. The Performance Results
4. How Safe Is Synchron<sup>®</sup>?
5. How To Use Synchron<sup>®</sup>

## DATA SHEETS

- Trial Results & Performance Metrics – Scientifically validated data from multi-year, replicated trials
- Application Guidelines – Step-by-step instructions on how to apply and maximise Synchron<sup>®</sup>.
- Regulatory & Compliance Information
- Safety data for Synchron's<sup>®</sup> eco-profile.



## CALL US

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- Warren: 027 211 8947 (North Island)
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- 0800 539 463
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