



2023 TRIAL DATA:

Comparative Summary for Hydrogen Cyanamide, Synchron® and Untreated Control

Key Metrics and Comparisons

1. Budbreak Percentage

- **Synchron® (33 DBBB):** Achieved the highest budbreak percentage, averaging 57.2% in certain trials.
- **Hydrogen Cyanamide:** Followed closely with a 55.1% budbreak in targeted conditions, slightly behind Synchron® across trials.
- **Untreated Control:** Consistently lower at 52.2%, highlighting the efficacy of both products.



Implications:

- Synchron®, when applied 33 days before budbreak (DBBB), provides a reliable alternative, with performance comparable to Hydrogen Cyanamide in Gold3 kiwifruit orchards.

2. Budbreak Duration

- **Hydrogen Cyanamide:** Achieved synchronization with a budbreak duration of 28–30 days.
- **Synchron® (33 DBBB):** Slightly longer duration, averaging 30–33 days.
- **Untreated Control:** Significantly prolonged duration of 40+ days.
- **Implication:** Synchron® is effective in improving synchronization, though not as condensed as Hydrogen Cyanamide.

3. Yield Metrics

- **Flowers per Winter Bud:**
 - > **Hydrogen Cyanamide:** 0.55 king flowers/winter bud.
 - > **Synchron® (33 DBBB):** 0.43 king flowers/winter bud.
 - > **Untreated Control:** 0.35 king flowers/winter bud.
- **Crop Load (Fruit/m²):**
 - > **Hydrogen Cyanamide:** 85 fruits/m².
 - > **Synchron®:** 73 fruits/m².
 - > **Untreated Control:** 44 fruits/m².



Implications:

- Both products significantly enhance fruit yield, with Hydrogen Cyanamide maintaining a slight edge over Synchron®.



2024 TRIAL DATA:

Comparative Summary for Hydrogen Cyanamide, Synchron® and Untreated Control

KEY METRICS AND COMPARISONS

1. Budbreak Percentage

- **Hydrogen Cyanamide:** Achieved the highest budbreak percentage at 66.9%, reinforcing its reputation as a highly effective budbreak enhancer.
 - > Performance is consistent but tied to strict timing (optimal 28–42 days before natural budbreak).
 - > Dependent on precise weather conditions, which can limit flexibility for growers.
- **Synchron® (Double Application):** Delivered 61.3% budbreak, significantly higher than the Untreated Control (48.3%).
 - > Double application protocol (6 days apart) improves efficacy by creating a “second window” for activation, minimizing weather-related risks.
 - > Narrowing performance gap with Hydrogen Cyanamide suggests potential for long-term adoption.
- **Untreated Control:** Showed the lowest budbreak percentage at 48.3%.
 - > Useful as a control to evaluate product effectiveness.



Implications:

- Synchron's® double application demonstrates high reliability and reduced dependency on weather precision compared to Hydrogen Cyanamide.
- It is a promising alternative for regions with unpredictable environmental conditions.

2. Budbreak Duration

- **Hydrogen Cyanamide:** Achieved a condensed budbreak duration of 28.5 days, ensuring synchronised budburst and uniform flowering.
 - > Particularly useful for streamlining subsequent orchard management practices like thinning and pest control.
- **Synchron (Double Application):** Extended budbreak duration at 27.4 days, comparable to Hydrogen Cyanamide.
 - > Benefits from a balanced synchrony without risking uneven growth.
- **Untreated Control:** Longest duration at 31.2 days, leading to uneven growth and staggered management.



Implications:

- Synchron's® duration is competitive with Hydrogen Cyanamide and provides more uniform growth compared to untreated vines.
- Growers benefit from manageable flowering and fruiting timelines.



3. Yield Metrics

- **Fruit per Winter Bud:**
 - > **Hydrogen Cyanamide:** Produced the highest number of fruits per winter bud at 2.11, maximising yield potential.
 - > **Synchron® (Double Application):** Achieved 1.84 fruits per winter bud, a slight improvement over previous years.
 - > **Untreated Control:** Lowest at 1.24 fruits per winter bud, indicating the importance of budbreak enhancers for productivity.
- **Crop Load (Fruit/m²):**
 - > **Hydrogen Cyanamide:** Highest crop density at 96 fruits/m².
 - > **Synchron®:** Competitive at 80 fruits/m², highlighting substantial yield improvements compared to untreated vines (44 fruits/m²).



Implications:

- > Synchron® offers a balanced trade-off between yield enhancement and safety, appealing to growers seeking reliable productivity.
- > Slightly lower yields (vs. Hydrogen Cyanamide) are offset by its superior safety and environmental profile.

SAFETY METRICS FOR 2024:

HYDROGEN CYANAMIDE vs SYNCRON® vs UNTREATED CONTROL

| Safety Metric | Hydrogen Cyanamide | Synchron® | Untreated Control |
|----------------------|--------------------------------|-----------------------------------|-------------------|
| Worker Health | High risk, PPE required | Low risk, standard PPE sufficient | Safe, no hazards |
| Environmental Impact | Potential for contamination | Eco-friendly, no residue | No impact |
| Residue on Fruit | Withholding period required | Residue-free | Residue-free |
| Crop Phytotoxicity | Possible under poor conditions | None observed | None observed |

PRACTICAL IMPLICATIONS

1. **Regulatory Compliance:** Synchron® meets stringent safety and environmental regulations, including organic certifications.
2. **Cost Efficiency:** Synchron® eliminates PPE, training, and compliance costs associated with Hydrogen Cyanamide.
3. **Marketability:** Residue-free certification allows growers to access high-value export markets sooner.

1. Synchron® is a registered trademark of Daymsa.