



DANGER
Keep out of reach of children
Read label completely before use

HORTCARE®

Hi-break®

A plant growth regulator which promotes uniform increased bud-break and flowering of kiwifruit, and earlier concentrated flowering of apples

Active Ingredient: 540 g/litre hydrogen cyanamide
in the form of a soluble concentrate

Beware: Apply this product carefully. Spray drift can
cause serious damage to other desirable plants

SCH-B545/F05



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HORTCARE® HI-BREAK
NET CONTENTS: 20 Litres



HORTCARE® HI-BREAK®

HAZARD CLASSIFICATION:

Acute oral toxicity Category 3, Acute dermal toxicity Category 4, Acute inhalation toxicity Category 4, Skin corrosion Category 1C, Eye damage Category 1, Skin sensitisation Category 1, Reproductive toxicity Category 2, Specific target organ toxicity (repeated exposure) Category 2, Hazardous to soil organisms, Hazardous to terrestrial vertebrates, Hazardous to terrestrial invertebrates, Hazardous to the aquatic environment chronic Category 3.



TOXICITY

DANGER: HORTCARE® Hi-break® is toxic if swallowed, and harmful if inhaled or absorbed through the skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Long term or repeated oral exposure may affect foetal development or cause organ damage. In combination with alcohol, a severe temporary reaction known as 'cyanamide flush' may be produced. Symptoms of cyanamide flush include skin flushing, dizziness, headache, shortness of breath and a rapid pulse.

ECOTOXICITY

Toxic in the soil environment, to terrestrial vertebrates and terrestrial invertebrates. Harmful to aquatic life with long-lasting effects.

Do not apply directly into or onto water. Do not allow animals to come into contact with spray mist or tank washing. **Dogs are particularly sensitive to HORTCARE® Hi-break® poisoning and must be restrained away from any spraying operation.** Non-grazing animals should not be exposed to residues on grass for three days and grazing animals for seven days. Toxic to bees: spray must not contact plants in flower if they are likely to be visited by bees. Apply this product carefully. Spillage or spray drift can cause serious damage to other desirable plants. Casuarina spp, lemons, tamarillos and gum trees are very susceptible. As a matter of good practice warn neighbours of your intent to apply this product.

RECORD KEEPING: A written record must be kept as described in the Management of Agrichemicals NZS: 8409 if using 3 kg or more within 24 hours, in a place where the product is likely to enter air or water and leave the application area.

PERSONAL PROTECTION: When mixing or loading wear full protective clothing such as impervious gloves, respirator, waterproof hat, coat and trousers (worn outside boots) and boots, and eye/ face protection. Wash splashes of concentrate from skin at once. Wash hands and exposed skin after work. Do not eat, drink or smoke while using. **DO NOT DRINK ALCOHOL FOR 24 HOURS BEFORE, AND FOR UP TO 7 DAYS AFTER USING HORTCARE HI-BREAK.**

Do not apply this product in a manner that will directly, or through drift, expose workers or other persons. The area being treated must be evacuated by unprotected persons. Where workers are in contact with kiwifruit canes within five days of spraying, gloves should be worn.

Wash contaminated protective clothing and equipment before re-use.

STORAGE: Store in original container tightly closed and in a locked, dry, cool, well ventilated area, away from foodstuffs. Stores containing more than 100 L are subject to requirements for signage, secondary containment and emergency response plans. Storage must be in accordance with the current version of NZS 8409 Management of Agrichemicals. A Location compliance certificate is required if more than 1000 L is stored.

If stored from one season to the next, store at 0–5°C in a coolstore. When stored appropriately this product should show no significant degradation for 15 months from the date of manufacture. Contact the proprietor for further information about the use of this product fit is older than this.

SPILLS AND DISPOSAL: When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Contain and absorb with suitable inert absorbent material and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority. Avoid contamination of any water supply with chemical or empty container.

Product disposal: If possible dispose of by using according to the label, otherwise dispose of in an approved landfill. **Container disposal:** Triple rinse container and add residue to mixture. Do not re-use container for other purposes. Recycle empty container through Agrecovery (0800 247 326; www.agrecovery.co.nz). Otherwise dispose of at an approved landfill. Do not cut, puncture or weld near unlined empty container.

EQUIPMENT: To minimise corrosion, flush sprayer and hose down equipment with plenty of clean water at the end of each day's spraying. Do not leave material standing in the spray tank overnight.

SAFETY DATA SHEET: A safety data sheet is available from Sipcam New Zealand Ltd.

SYMPTOMS OF POISONING by HORTCARE® Hi-break® are irritation of mucous membranes, severe dermatitis on moist skin, flushing of face, headache, dizziness, shortness of breath and rapid pulse.

FIRST AID: If exposed or concerned, get medical advice. For advice call the National Poison Centre, telephone 0800 POISON (0800 764 766). Have product label or container at hand.

If swallowed, rinse mouth with water. Do NOT induce vomiting. Immediately call the NATIONAL POISONS CENTRE or a doctor for advice. If on skin, remove contaminated clothing and wash skin with plenty of soap and water. Get immediate medical advice if person feels unwell. Wash contaminated clothing before re-use. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice. If inhaled, remove person to fresh air and keep at rest in a position comfortable for breathing.

EMERGENCY RESPONSE 0800 CHEMCALL (0800 243 622)

GENERAL INFORMATION

Ensure label instructions are read and safety precautions understood before use.

• Over cropping and fruit size reduction. As the use of **HORTCARE® Hi-break®** may significantly increase crop load, good management (eg, crop thinning, ample water and fertiliser) is essential to optimise export yield in the desirable size counts.

EPA Controls Restrictions

For kiwifruit, the maximum application rate is 25 kg of hydrogen cyanamide active ingredient/ha (equivalent to 46.3L product/ha), with a maximum application frequency of one application per calendar year.

For apples, the maximum application rate is 16.9 kg of hydrogen cyanamide active ingredient/ha (equivalent to 31.3L/ha), with a maximum of one application per calendar year.

A person may apply this product only during the period from 1 July to 10 September (inclusive of those dates).

The buffer zones apply as following, according to the relevant application method, application rate/crop treated, and sensitive area:

Bystander buffer zones

Use pattern description	Downwind buffer zone
Kiwifruit ≤ 25 kg ai/ha - Air blast	6 m (with shelter)
Kiwifruit ≤ 25 kg ai/ha - Air blast	8 m (without shelter)
Apple ≤ 16.9 kg ai/ha - Air blast	10 m

Aquatic environment buffer zones

Use pattern description	Waterbody downwind buffer zone	Waterbody run-off buffer zone
Kiwifruit ≤ 25 kg ai/ha	6 m (with shelter)	< 5% slope: 10 m 5 - 10% slope: 15 m > 10% slope: 20 m
	10 m (without shelter)	
Apple ≤ 16.9 kg ai/ha	45 m	< 5% slope: 0 m 5 - 10% slope: 10 m > 10% slope: 15 m

Non-target plant downwind buffer zones

Use pattern description	Downwind buffer zone - non-threatened species	Downwind buffer zone - threatened species
Kiwifruit ≤ 25 kg ai/ha - Air blast	6 m (with shelter)	15 m
	10 m (without shelter)	
Apple ≤ 16.9 kg ai/ha - Air blast	30 m	50 m

Notes to tables:

Effective shelter is defined as planted trees or artificial materials situated at the boundaries of an application plot, that have been shown to form a barrier that can reduce spray drift by 80%.

Non-target plants: These downwind buffer zones are designed to protect non-target seeds, seedlings, and established vegetation from effects on yield parameters (for example, weight, height) and not from phytotoxic effects (for example, chlorosis). For clarity where natural shelter belts are used, the plants forming these shelter belts are not considered as non-target plants for the purposes of compliance with buffer zone requirements.

APPLICATION METHODS

Only apply spray via ground-based methods using nozzles and appropriate mixtures of hydrogen cyanamide, water, and/or adjuvants that will produce a coarse or larger droplet size as defined, for example, in ISO 25358:2018 Crop protection equipment, droplet-size spectra from atomisers.

The person applying this product must ensure that the spray is not applied when wind speeds are more than 20 km/h as measured at the application plot or when there is an air temperature inversion layer. In winter, an air temperature inversion occurs when cold air close to the ground is trapped by a layer of warmer air. Temperature inversions occur when there is little, or no wind and the sky is clear. Under these conditions, in the evening and during the night, heat from the ground is radiated into the atmosphere, and the air adjacent to the ground cools relative to the layer above. This creates stagnant air near the ground, which traps particulate matter such as smoke, pollution, or sprayed substances.

The product may not be compatible with integrated pest management (IPM). Hydrogen cyanamide is very toxic to some plant species. Certain plants may be damaged or killed from contact with this product. The product should not be applied within a specified distance of a downwind area containing any non-target plants, the distance varies per use pattern. Before application, users should be aware of any wetlands, indigenous vegetation habitat areas, or reserves that may contain threatened plants adjacent to the application area, in which case it is recommended to increase the buffer zone, the distance varies per use pattern. See buffer zone information.

DIRECTIONS FOR USE - APPLES

General: HORTCARE® Hi-break® may be applied to apple trees to obtain the following effects:

• **Advanced bud-break and a compressed earlier flowering period.** Flowering can be advanced to improve the synchrony of flowering between varieties to achieve better cross pollination. Larger and more uniform fruitlets allow thinning sprays to be timed earlier and more accurately. An earlier flowering reduces the fire blight risk but may increase the risk of frost damage.

• **Advanced harvest date, especially in early varieties in warmer regions.** Fruit may be ready for harvest 7–10 days early. If temperatures are especially warm at harvest, red colouration may be compromised by an early harvest date.

Rate of Use: Use 2.5 litres **HORTCARE® Hi-break®** per 100 litres of water, in 800–1200 litres of water per hectare, depending on tree size. Apply as a fine spray mist to give complete tree coverage. Treatment should be made 30–45 days before the natural budbreak (50% green tip on spurs) of each variety. Applications farther out from natural budbreak will have a greater effect on advancing budbreak and flowering, but may reduce the level of budbreak and flowering. Do not apply closer than 25 days before budbreak. Warm temperatures in the three days following application improve the response.

COMPATIBILITY: Do not mix with other pesticides.

MIXING: Add the required amount of **HORTCARE® Hi-break®** to the half-filled spray tank. Add the remainder of the water and agitate thoroughly before and during spraying.

DIRECTIONS FOR USE - KIWI-FRUIT:

General: HORTCARE® Hi-break® can cause the following beneficial effects on kiwifruit, particularly useful in orchards which receive inadequate winter chilling:

- An improved uniform budbreak
- An increased number of floral shoots and higher flower numbers, giving a significant yield increase.
- A short (4–7 day) flowering period, ideal for spray pollination.
- An advanced flowering in one part of the orchard to better fit the management programme (eg, male vines may be treated to supply early pollen for artificial pollination).
- A reduction in the number of doubles and trebles.
- **HORTCARE® Hi-break®** gives good control of green algae and lichen.
- Assist in the control of greedy scale.

Rate of Use: Use 4–6 litres **HORTCARE® Hi-break®** per 100 litres of water. Use the highest concentration at the beginning of the application period. A lower concentration within the recommended range may be used as the application period progresses. To minimise damage use lower rates after a cold winter or in cooler areas of the orchard (shaded, frost pockets). Apply as a fine spray mist to give complete coverage. Spray all dormant buds or effects will be uneven. Ensure the spray reaches in to the central leader and covers the inner canopy. Accurately calibrated airblast sprayers are recommended.

DO NOT SPRAY TO RUN-OFF AND MINIMISE DRIP POINTS.

On mature vines apply 500–700 litres spray volume per hectare. Do not exceed water rate. The addition of a non-ionic wetting agent is recommended to improve coverage.

DO NOT APPLY UNDER SLOW DRYING CONDITIONS AS VINE DAMAGE MAY OCCUR. (eg, under high humidity; before 9.00am if dew is present or after 4.00pm in shaded parts of the orchard; or during periods when cold frosty nights occur).

Rainfall occurring within four hours of treatment may reduce efficacy.

Timing of Application:

- **Var. Hayward.** Apply **HORTCARE® Hi-break®** in the period between the last week of July and the 24th of August. Applications after this time have more risk of cane damage in a normal year, but may be effective in a very mild winter when budbreak is naturally delayed. The optimum timing is normally the second week of August. Applications towards the beginning of the recommended time period may be less effective, especially in a mild winter and in areas of low winter chilling.
- **Var. Hort 16A (Zespi Gold).** Limited experience suggests that the optimum timing is mid-late July. In a very mild winter (eg, 1998) applications during late July to the first week of August were effective.

HORTCARE® Hi-break® misuse may result in the following adverse effects on kiwifruit:

- Frost damage to new growth. Do not use in orchards subject to late frosts as damage will be greater where budbreak has been advanced.
- Cane damage. Death of individual buds, spurs or whole canes has been associated with higher than recommended rates of use, high water rates applied to run-off or application under slow drying conditions. Ensure application equipment is accurately calibrated and that recommended rates of use are not exceeded. Avoid spray drift from one row to the next. If damage occurs, reduce rate of use/water rate in the following season. Damage is more likely to occur following cold winters or in colder areas of the orchard. In such circumstances, reduce the rate or do not use.
- Do not apply to weak vines or vines with broken or green cane. Stubbing, if carried out, should be completed by the end of October and male vine pruning completed by late December.
- Poor fruit pollination. Ensure sufficient bees and/or artificial pollination to adequately pollinate an increased number of blossoms, flowering over a short period.

It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice: Maximum Residue Levels for Agricultural Compounds.

Registered pursuant to the ACVM Act 1997, No. P7018
See www.foodsafety.govt.nz for registration conditions.

Approved pursuant to HSNO Act 1996, Approval Code: HRC000001
See www.epa.govt.nz for approval controls

CONDITIONS OF SALE: The use of **HORTCARE® Hi-break®** being beyond the control of the suppliers, no warranty expressed or implied is given by Sipcam New Zealand Ltd regarding its suitability, fitness or efficiency for any purpose for which it is used by the buyer, whether in accordance with the directions or not and Sipcam New Zealand Ltd accepts no responsibility whatsoever resulting from the use of this product.

REGISTERED AND DISTRIBUTED BY:

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Batch No:

Date of Manufacture:

Expiry Date:



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