NZKGI
NEW ZEALAND KIWIFRUIT GROWERS

Hi-Cane: the science behind safe and responsible use

Hydrogen cyanamide, the active ingredient in Hi-Cane, has played an important role in New Zealand's kiwifruit industry for decades. Applied once each year in late winter, it supports consistent flowering, improved fruit quality, and more uniform harvests.

In 2024, the Environmental Protection Authority (EPA) confirmed the continued use of hydrogen cyanamide, subject to strict controls, following a comprehensive 4.5-year reassessment process. The review considered extensive scientific research, expert evidence, submissions from stakeholders, and a public hearing.

This factsheet highlights the scientific evidence demonstrating how hydrogen cyanamide can be used safely and responsibly while protecting people, animals, and the environment.

Did You Know?

Hydrogen cyanamide is used in approximately 30 countries.



Risks can be minimised

The EPA concluded that, when used according to the approved controls, risks are:

- Mitigated below levels of concern for bystanders
- Negligible for birds and in-field soil organisms
- Reduced to negligible levels for aquatic environments, pollinators, non-target plants and beneficial insects

Did You Know?

Hydrogen cyanamide exposure during orchard application is significantly lower than exposure levels and durations associated with its therapeutic use in the treatment of alcoholism.

Modern science supports safe use

The EPA's reassessment included a detailed review of international and local scientific research on hydrogen cyanamide.

During the reassessment process, expert analysis concluded that there is no identified mechanism by which hydrogen cyanamide causes cancer. Following this review, the EPA's final hazard classification proposal did not include a suspected carcinogen classification.

The EPA ultimately approved continued use of hydrogen cyanamide under robust controls that ensure safe application.



Strict controls ensure responsible application

Hydrogen cyanamide is one of the most highly regulated crop protection tools used in New Zealand horticulture.

EPA controls include:

- Maximum application rates
- A limit of one application per year
- Maximum wind speed requirements
- Mandatory operator training
- Personal protective equipment requirements
- Buffer zones to protect neighbouring properties and sensitive environments



Application practices have also evolved significantly over the past 15 years. Low-drift spraying technology, including AI nozzles, is now required by Zespri for all hydrogen cyanamide applications.

Protecting people

The EPA concluded that appropriate buffer zones effectively protect people living, working, or moving near orchards where hydrogen cyanamide is applied.

For kiwifruit orchards, EPA requirements include:

- A 6-metre buffer where effective shelter is present
- An 8-metre buffer where shelter is absent

Growers are encouraged to maintain a 30-metre buffer around sensitive areas, including property boundaries, waterways, and other sensitive environments, but it's not a requirement.

Additional safety measures apply for orchard workers, including glove requirements when handling kiwifruit canes within five days of application.

Growers must also comply with all local authority rules and G.L.O.B.A.L.GAP requirements.

Protecting birds and wildlife



The EPA considered a wide range of scientific information when assessing potential impacts on birdlife.

This included:

- Independent risk assessments
- Bird surveys conducted before and after spraying
- Expert ecological evidence
- Grower observations
- Mātauranga Māori evidence presented during the hearing process

After considering all available evidence, the EPA concluded that risks to birds are negligible when approved controls are followed.

Supporting responsible pet safety

As with any agrichemical, it is important that pets do not enter areas during spraying operations.

Growers are required to notify neighbours when spraying takes place, helping ensure animals remain safely away from treated areas.

Did You Know?

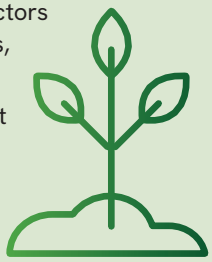
Growers regularly monitor soil health and have not observed detrimental impacts on soil organisms associated with hydrogen cyanamide use.

Healthy soils matter

Healthy soils are fundamental to productive and sustainable kiwifruit orchards.

In 2023, Manaaki Whenua Landcare Research (now the Bioeconomy Science Institute) assessed the effects of hydrogen cyanamide on soil invertebrates, including springtails (Collembola), in a Green kiwifruit orchard.

The research found that populations recovered strongly following application, with results supporting the view that several factors help minimise any potential impacts, including:



- Rapid breakdown of the product
- Once-yearly winter application
- Interception by leaf litter, grass, and other ground cover

Did You Know?

Many growers, including Māori growers who participated in the EPA hearing process, reported no observed decline in the health of aquatic environments surrounding orchards where hydrogen cyanamide is used.

Protecting nearby plants



Some plant species are particularly sensitive to spray drift. Plants include casuarina, lemons, tamarillos and gum trees. For this reason, buffer zones and application controls form an important part of EPA requirements.

The approved controls are designed to minimise exposure and protect neighbouring vegetation, while enabling growers to use hydrogen cyanamide safely and responsibly.

Protecting waterways

The EPA requires both spray drift and runoff buffer zones to protect streams, waterways, and aquatic ecosystems.

These controls were specifically designed to minimise environmental exposure and support safe use.

Did You Know?

Hydrogen cyanamide breaks down rapidly in the environment and does not accumulate in people, animals, or ecosystems.

We're here to help

NZKGI is committed to maintaining open dialogue with local communities and ensuring concerns are addressed appropriately. For information, enquiries, or assistance relating to spraying activities, contact 0800 232 505