Environmental Protection Authority
Te Mana Rauhī Taiao

New Zealand Government

Hydrogen cyanamide reassessment

MAY 2021

Summary of risks and benefits for Māori consultation

Kia hiwa rā	*Be alert*
Kia hiwa rā	*Be watchful*
Korihi te manu	*The morning chorus sings*
Tākiri mai te ata	*as a new day dawns*
Tēnā koutou e ngā rangatira	*Greetings to you the respected ones,*
e ngā iwi me ngā karangaranga maha	*the many people far and wide*
Tēnei te mihi ki a koutou katoa	*We acknowledge you one and all*
Tihei mauri ora	*Behold the sneeze of life*

Reassessment overview

Introduction

The Environmental Protection Authority (EPA) is holding regional hui to hear Māori perspectives, as part of preparing an application to reassess the plant growth regulator hydrogen cyanamide (HC). We have prepared this document in order to:

- Provide some background to the HC reassessment
- Provide information on the next steps of the reassessment process
- Summarise our risk and benefit analysis of HC use in Aotearoa New Zealand to inform our regional hui.

We have prepared this summary in order to facilitate meaningful engagement with you on any aspects of concern regarding HC use. We value the insights and perspectives that you will be able to offer, and encourage you to participate in the hui if you are able. Feel free to provide us with any written feedback, particularly if you are unable to attend one of the hui.

We encourage you to circulate this document through your own networks.

Background

HC is a plant growth regulator used in the production of kiwifruit and other fruit. Using HC in kiwifruit production ensures that growth of shoots (known as 'bud-break') happens in a controlled way. It is also applied to some apple, cherry, apricot, and kiwiberry crops for the same bud-breaking purpose, but to a much lesser extent than kiwifruit.

Bud-break happens naturally when a plant experiences sufficient frost, but can also be stimulated chemically using the likes of HC. This type of stimulation offers a number of practical advantages, and leads to profitability for growers. Crops treated with HC result in so-called "king flowers", which produce higher quality fruit, and will flower in a shortened period (e.g. over one week, rather than four). This reduces harvest costs, and increases overall numbers of fruit.

Warmer regions where kiwifruit are grown are increasingly dependent on HC in order to maintain crop viability, due to frosts becoming milder with climate change.

Approval history

HC was first registered by the Pesticides Board in 1988. The use of HC as a pesticide is now regulated under the Hazardous Substances and New Organisms (HSNO) Act by the Environmental Protection Authority (EPA).

In New Zealand, all pesticides are required to have both a HSNO approval and registration under the Agricultural Compounds and Veterinary Medicines Act (ACVM Act). There are six commercial products that contain HC registered under the ACVM Act, including the

well-known product name, Hi-Cane.[1] HC was reassessed in 2006 by the EPA's forerunner, the Environmental Risk Management Authority.

2006 reassessment

The reassessment of HC started in 2005 and the decision was made in 2006.[2] The reassessment was initiated due to the increased use of HC, and a steady flow of reports of adverse effects to human health and the environment. The 2006 reassessment involved a variety of stakeholders including Zespri, New Zealand Kiwifruit Growers Incorporated (NZKGI), Māori kiwifruit growers, and iwi.

Based on the evidence at the time, the Decision-making Committee decided that the kiwifruit industry was best placed to regulate itself, through measures required by NZKGI and Zespri. Accordingly, the only additional control imposed under the HSNO Act as a result of the reassessment was adding a label statement warning against consuming alcohol before and after using HC (to prevent cyanamide flush). The Decision-making Committee considered that the standard controls prescribed in the Hazardous Substances Regulations, spray management provisions in regional plans, and Good Agricultural Practice (GAP), were adequate to manage the risks. The provisions in the regional plans and GAP included applicator qualification and bystander notification requirements.

The current reassessment

Reassessments are a two-step process. The first stage is to determine whether there are grounds for reassessment, and if so, then the second stage is the actual reassessment.

Grounds for reassessment[3]

Grounds to reassess can be established if there is significant new information on the effects of a substance, available alternative substances with more benefits and less risks, or information showing a significant change in use or quantity used. Once there are grounds, then the EPA can proceed with a reassessment of the substance, which fully reviews the risks and benefits of use in New Zealand.

Newly available information on the effects of HC led to reassessment grounds being established in September 2019[4]. The new information included regulatory action by the European Food Safety Authority (EFSA) and their human health and environmental risk assessments. The EFSA review, other assessments published by regulatory authorities in the United States (US) and Europe, and risk assessments provided by stakeholders will be used to inform our assessment of risks and benefits of HC use in New Zealand.

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[1] See the appendix for details of other hydrogen cyanamide products.
[2] The 2006 reassessment documents can be found at the link below.
https://www.epa.govt.nz/database-search/hsno-application-register/view/HRC05001
[3] Grounds for reassessment must be established before a reassessment can proceed. See the link below for further information on the reassessment process.
https://www.epa.govt.nz/industry-areas/hazardous-substances/chemical-reassessment-programme/the-reassessment-process/
[4] The application and decision on the grounds for reassessment can be found at the link below.
https://www.epa.govt.nz/database-search/hsno-application-register/view/APP203865

Available information

Last year, we ran a public call for information on hydrogen cyanamide which received 12 responses from industry groups, iwi, and individuals. Risk analyses, economic assessments, information on alternatives, and general concerns were provided to us and will inform the reassessment application.

Other significant information that will inform our assessment includes:

- the EFSA review
- information published by the United States Environmental Protection Agency (US EPA)
- risk assessments provided by stakeholders

Our review of these assessments will factor in how HC is used in New Zealand. This means we form our position on risks to human health and the environment by carrying out an assessment that is appropriate and relevant to New Zealand's use of HC, using our own expertise supplemented by information from stakeholders and overseas regulators.

The European EFSA review found that risks to the health of operators and by-standers were of concern and exceed the acceptable exposure level in a number of scenarios. This means that HC is not approved in Europe (apart from narrow exempted uses in Greece).

HC is currently undergoing re-registration review in the US.[5] In 2016, the US EPA issued an interim decision which applied additional restrictions to the use of HC which came into effect before the completion of the re-registration process. The risk mitigation measures that were applied included closed cab application, closed mixing and loading systems, restricted entry intervals, droplet size specification, and removal of hand-gun and aerial application methods.

Reassessment questions for New Zealand

The key questions for this reassessment are:

- What impacts does use of the substance have on the health, environmental, social, economic, and cultural wellbeing of Māori?
- What are the risks that are posed by hydrogen cyanamide to human health and the environment?
- Are the risks able to be mitigated to an acceptable level?
- What measures need to be in place to mitigate risk to an acceptable level?
- Are any outstanding risks outweighed by the benefits offered by using the substance?

The above questions can be used to guide the reassessment through key issues.[6] These will be addressed in our reassessment application.

[5] Human health and environmental risk assessments were published by the US EPA in 2014.

[6] Please note that the decision-making criteria for reassessments are set out in the HSNO Act, and the Hazardous Substances and New Organisms (Methodology) Order 1998. The questions are provided to help understanding of the reassessment. A video explaining this is available on our website: https://www.epa.govt.nz/about-us/what-we-do/#Making_HSNO_decisions

Risk analysis

Hazard assessment

Hazards to both human health and the environment are associated with use of hydrogen cyanamide.

Current New Zealand product labels identify the substance as being toxic if swallowed, inhaled or in contact with skin. It can cause skin irritation and serious eye irritation, possibly causing an allergic skin reaction. It is suspected of damaging fertility or the unborn child, can cause damage to organs through prolonged or repeated exposure, and is ecotoxic to aquatic organisms, terrestrial vertebrates, and terrestrial invertebrates.

HC also interferes with the metabolism of alcohol in humans, which can lead to a build-up of acetaldehyde in the blood and symptoms of reddening of the face (cyanamide flush).

The hazards of HC have been reviewed and some changes are proposed to the current hazard classifications.

New study data on the human health hazards of HC supports additionally classifying it as carcinogenic (suspected of causing cancer).

Our human health hazard review also recommends changing the current skin and eye irritation classifications to the higher hazard skin and eye corrosive classifications (causing severe skin burns and eye damage).

New ecotoxicity study data supports classifying HC as hazardous to soil organisms (such as earthworms).

Risks to human health

We have modelled the risks to human health from typical HC usage in New Zealand from the perspective of operators, re-entry workers, and bystanders.

In order to model the human health risks around HC use, we need to make some assumptions on how it is used. These assumptions are based on product labels, responses to the call for information, scientific studies, and/or guidance from other regulatory agencies, and we refer to them as input values. For example, using the label information on the highest possible application rates, we assume that HC is applied to kiwifruit vines at a rate of 25 kilograms of active ingredient per hectare with one application per season by airblast. We also make an assumption that each operator sprays 10 hectares of kiwifruit orchards per day.

The full list of input values used in the HC human health risk assessment are provided below in **Table 1**. As noted, these input values are assumptions based on the information available to us at this time, and could change if we receive any better data or applicable information to refine our assessment.

Table 1: Input values for HC human health risk assessment

Acceptable Operator Exposure Level (AOEL)	Application rate	Application method	Work rate	Dermal absorption (concentrate)	Dermal absorption (spray dilution)
0.01 mg/kg bw/day	25 kg ai/ha	Airblast	10 ha/day	14.3%	8.2%

The acceptable operator exposure level sets an upper level of HC that a person using the chemical can be exposed to on a daily basis that will minimise the risk of them developing any long-term health problems.

Risks to operators

We have modelled the risks to operators to determine risks for various scenarios with different levels of personal protective equipment (PPE), with those risks being compared to the acceptable level.

Without any PPE, predicted operator exposures are much higher than acceptable levels, indicating a risk of adverse long-term health effects.

Even when the operator wears a respirator as well as full personal protective equipment, predicted operator exposures are still higher than acceptable levels. This means that risks to operators may not be manageable at current maximum application rates.

In the US, operators that mix HC products with water to the correct dilution and load them in to the spraying machinery must use a closed mixing and loading system, which is usually a mechanical device that empties pesticide from its container, rinses the container and transfers this to the sprayer; this is called closed mixing and loading. As well as this, operators that carry out HC spraying, typically by mounting the airblast spraying equipment to a tractor, must use an enclosed cab which has adequate chemical filtering and an enclosed barrier preventing any contact with pesticide spray outside the cab; this is called enclosed cab application. Both closed mixing and loading systems and enclosed cab application are referred to as engineering controls.

Since these engineering controls can reduce an operator's exposure to pesticide spray compared with use of PPE and/or respirators, they could be a possible option for HC users in New Zealand. Therefore, we modelled the effect of using closed mixing and loading and an enclosed cab for application in New Zealand scenarios. However, our modelling showed that, although much reduced, risks to operators were still above an acceptable level.

Risks to re-entry workers

No assessment was necessary. Spray application of HC is timed for the winter when kiwifruit vines are not growing and there is little reason for workers to re-enter orchards. Kiwifruit vines are likely to be bare, with no leaves, and therefore spray residues on leaves will also not be an issue.

Risks to bystanders

We have modelled the risks to bystanders when HC is applied to kiwifruit crops using airblast application at a rate of 25 kilograms of active ingredient per hectare and based on one application per season.

The modelling determines what, if any, buffer zone is required to protect bystanders from possible adverse effects of the substance. The buffer zone is the distance that must be kept between the area that is sprayed and roads, pavements, or neighbouring properties. We have determined that a buffer zone of at least 8 metres is needed to protect bystanders.

As an alternative to setting a buffer zone control, it is possible that risks could be managed through the use of shelter belts, which are typically trees, hedging or fences surrounding an orchard. However, we would need more information to understand how effective shelter belts are in blocking spray and reducing risks to bystanders.

Conclusions on human health risks

The key human health risks are to operators who spray HC in kiwifruit orchards, and to bystanders in areas next to spraying activities.

Setting a buffer zone control would reduce the risks to bystanders. Other measures could possibly be considered as an alternative to buffer zones, such as the use of shelter belts. We would need more details on shelter belt effectiveness to assess this possibility.

We have not identified a straightforward single control that would mitigate the significant risks to operators.

Given these risks to workers, and the fact that these cannot be reduced sufficiently even with closed mixing and loading systems and enclosed cab application, we will likely need input on alternative control measures to protect users. Additional information may help us identify measures that are practical and can adequately manage the risks to users.

A combination of measures may be needed to reduce the human health risks to operators to an acceptable level. The options which could be considered include:

- reducing the application rate of HC, if it can be demonstrated that HC use is effective at lower rates (noting that the lower application rate of 19.73 kg active ingredient per hectare in the US, and the much lower application rate of 9.36 kg active ingredient per hectare in Europe)
- reducing the work rate (the area a person can spray per day), if it can be demonstrated that the default value of 10 hectares per day is an overestimate
- closed mixing and loading systems and/or using an enclosed cab for application (but noting that these measures alone do not reduce risks sufficiently)
- separating out the mixing/loading and application activities so that these are done by different operators, if it is agreed that this is a workable measure

Key discussion points – human health

You may wish to consider some of the following questions:

- How do you feel about the proposed bystander buffer zone?
- Would you like us to investigate the use of shelterbelts in protecting bystanders?
- What are your thoughts on the risks to workers?
- Do you have any comments on our assumed operator work rate (10 hectares per day)?
- How do you feel about the suggestion of using closed mixing and loading systems?
- Do you have any comments on using an enclosed cab for application of HC?
- Would it be workable for separate operators to do the mixing/loading and application activities for HC spraying?
- Do you have any comments about reducing the HC application rate?

Environmental risk assessment

We have modelled the risks to the environment from typical HC use in New Zealand, including use on kiwifruit and apples. As for the human health risk assessment, modelling for kiwifruit assumes that HC is applied using airblast application at a rate of 25 kilograms of active ingredient per hectare with one application per season.

Risks to aquatic species

We assessed both short-term and long-term risks to fish, crustaceans, aquatic insects, algae and aquatic plants, taking into account both threatened and non-threatened species.

Risks above the level of concern were identified for crustaceans, algae, and aquatic plants (whether these were threatened or non-threatened species). Some risks were also identified for threatened species of fish and aquatic insects. Therefore there is potential for harm to culturally significant species of ika (fish), mawhiti (crustaceans), kaiwhao (molluscs), and otaota wai (aquatic plants) including the food species tuna (freshwater eels), īnanga (whitebait), kōura (freshwater crayfish), kākahi (freshwater mussels), and kowhitiwhiti (watercress).

Further modelling was carried out to calculate suitable buffer zones to manage risks to aquatic species from spray drift and runoff from HC spraying activity. A buffer zone is the minimum distance that must be left between an area being sprayed and a waterway, such as a stream, river or lake.

Our initial recommendation is that suitable buffer zones in the range of between about 10 metres and 50 metres can be set to reduce risks to aquatic life.

The exact distances would depend on the type of orchards sprayed (kiwifruit or apples), whether the buffer zone is protecting a downwind water body or a downslope water body, and whether the orchard area is relatively flat or sloping.

Our assessment was based on the assumption that spraying would not take place in very windy or very still conditions. Therefore, we also recommend only applying HC when wind speeds at the application site are between 3 kilometres per hour and 20 kilometres per hour.

Risks to groundwater

Risks to groundwater were assessed and found to be below the level of concern.

Risks to sediment

No specific assessment was performed for sediment-dwelling organisms that exclusively live and feed within sediment. Since HC is considered unlikely to transfer into sediment, it should not be a concern for these types of organisms.

Risks to soil macro-organisms and micro-organisms

We assessed the acute risks to earthworms both within kiwifruit or apple orchards (in-field) and outside orchards (off-field). Potential risks above the level of concern were identified in-field for both kiwifruit and apples. However, any effect on earthworms is likely to be temporary, given that spraying occurs only once a year and therefore population levels are likely to recover.

In terms of risks to soil micro-organisms, a potential risk of disrupting the soil nitrogen cycle which ultimately affects plant health was identified. It was considered that the effect of HC on soil processes is likely to be temporary, and therefore below the level of concern.

Risks to non-target plants

We assessed risks to non-target plants present on the boundary of kiwifruit and apple orchards (edge of field), considering risks to growth of established plants and to growth of new seedlings from seeds present in the soil (referred to as seedling emergence).

Risks above the level of concern were mainly identified for seedling emergence of non-target plants, with both threatened and non-threatened species of non-target plants being at risk. Therefore there may be risks to culturally significant otaota (plant) species, such as harakeke (flax), pūhā (sowthistle), and kawakawa (pepper tree).

Further modelling was carried out to calculate suitable buffer zones to manage risks to non-target plants from spray drift when using HC.

Our initial recommendation is that suitable buffer zones in the range of between 10 metres and 50 metres can be set to reduce risks to non-target plants.

The exact distances would depend on the type of orchards sprayed (kiwifruit or apples), and whether the buffer zone is protecting general areas of non-target plants or a particularly sensitive area (such as significant natural areas, reserve areas, conservation land, or areas of particular cultural significance).

Again, we assumed that spraying would not take place in very windy or still conditions. Therefore we also recommend only applying HC when wind speeds at the application site are between 3 kilometres per hour and 20 kilometres per hour.

Risks to birds

We assessed short-term and long-term risks to birds, modelling the risks to finches, wagtails, thrushes and larks as representative species of birds feeding on weed seeds, insects, worms, and diets comprising a combination of these food items. In all scenarios and for all types of birds, risks above the level of concern were identified. Therefore there may be risks to culturally significant bird species with a similar body weight and diet to the assessed species, such as pīwakawaka (fantails), tauhou (waxeyes), and kōtare (kingfishers).

Some refinements of the models were investigated using additional data, but these did not reduce risks for wagtails, thrushes and larks to a manageable level.

We also determined maximum safe foraging times for birds to provide an understanding around the degree of risk to birds. These safe limits ranged from around 7 percent to 29 percent of a bird's foraging time being spent within orchards, dependent on bird species. We are concerned that some small birds may spend a greater proportion of their foraging time than this in orchards during the winter months.

We have not modelled risks to larger bird species, since these are likely to be at lower risk due to their higher body weight and relative metabolism. Therefore any risks to game birds such as rakiraki (mallard duck), pūtangitangi (paradise shelduck) and pūkeko (swamp hen) are likely to be lower than for the smaller bird species used in our assessment.

Further reliable information would be needed to refine this assessment further. Useful data includes the types of birds present in kiwifruit and apple orchards during winter months, the make-up of their diet, the proportion of time spent by birds in orchards during winter, and the contamination level of seeds and insects following HC spraying. It would be interesting to hear if any other measures are taken by orchardists to deter birds from foraging in orchards.

Risks to pollinators

We assessed direct risks to pī honi (honey bees) and identified potential risks above the level of concern from feeding on nectar contaminated with HC. However, since HC is applied the kiwifruit vines and apple trees prior to bud-break when they are bare, the vines and trees have no pollen or nectar and are highly unattractive to bees. Risks can be managed by ensuring that there are no flowering weeds or other flowering plants within the orchard area. Appropriate use restrictions and label statements can manage these risks.

Risks to non-target arthropods

We assessed risks to parasitic wasps and predatory mites (which are introduced insect species used to control pest insects) within and around kiwifruit or apple orchards. Risks were identified for the parasitic wasp, *Aphidius rhopalosiphi*, the predatory mite, *Typhlodromus pyrisome*, the Rove beetle, *Aleochara bilineata*, and *Pardosa* species.

Therefore, HC may also have risks to potentially harm species of pepeke (arthropods) that are culturally or economically important to Māori. Potentially affected pepeke include beneficial species such as ngaro wīwī (hunting wasps), pungawerewere (spiders), mūmūtawa (ladybirds) and whē (praying mantis), and other species such as wētā, rō (stick insects), kihikihi (cicadas), mōwhitiwhiti (grasshoppers), weri (centipedes and millipedes), and various pepe (moths and butterflies), pāpapa (beetles) and ngarongaro (flies).

An additional label statement to warn users of potential impacts on beneficial insects is recommended.

Conclusions on environmental risks

The key environmental risks are to aquatic species, non-target plants, birds, pollinators, and non-target arthropods.

Risks to aquatic species and non-target plants are proposed to be managed through the setting of buffer zones. The exact distances and definitions of the buffer zones need to be determined to protect ngā wai koiroa (aquatic habitats) and culturally significant species of ika (fish), mawhiti (crustaceans), kaiwhao (molluscs), and otaota wai (aquatic plants) including the food species tuna (freshwater eels), īnanga (whitebait), kōura (freshwater crayfish), kākahi (freshwater mussels), and kowhitiwhiti (watercress); as well as culturally significant otaota (plants) such as harakeke (flax), pūhā (sowthistle) and kawakawa (pepper tree) in areas bordering orchards where HC spraying takes place.

Risks to pollinators and non-target arthropods are proposed to be managed through use restrictions and label controls warning users of the risks, directing that HC should not be used when bees are present, and warning of potential impacts on beneficial insects.

The risks to birds are moderately significant, but there is a degree of uncertainty around our assessment. More information on bird behaviour and diet in kiwifruit and apple growing areas would be helpful to fully understand the risks and identify potential risk management strategies. Accounts of any culturally significant species of manu (birds) including pīwakawaka (fantail), tauhou (waxeye), and kōtare (kingfisher) that feed in orchards during winter would help broaden our understanding.

Key discussion points - environment

You may wish to consider some of the following questions:

- How do you feel about the proposed buffer zones to protect ngā wai koiroa (aquatic habitats)?
- Do you have any comments on the proposed buffer zones to protect non-target otaota (plants)?
- What do you think about our recommendation to not apply HC when wind speeds are too low or too high?
- Do you have any comments on potential labelling to warn users of potential impacts on beneficial pepeke (insects)?
- Can you provide any insights into behaviour of manu (birds) in kiwifruit orchards during winter in your area?

Benefits analysis

Summary of benefits

The EPA commissioned an analysis of the economic benefits of HC which used various data sources, including data provided in response to the call for information. The benefits of HC use have been quantified in terms of the present value to fruit growers as the orchard gate return and by its contribution to New Zealand Gross domestic product (GDP). The benefits assessment takes into account the increased productivity from use of HC, increased costs of possible alternatives (Waiken, Advance Gold, Erger), and reduced efficacy of those alternatives (based on industry estimates of 25-50% efficacy compared with HC).

The summary of costs is shown in Table 2, showing a possible $85 million - $113 million annual impact on New Zealand GDP. When compared with the $308 billion per year national GDP (as at June 2020), the estimated impact on yearly GDP is around 0.03-0.04 percent.

Table 2: Total combined grower cost and national GDP impact (present value)

Estimate level	OGR (10 years, $million)	GDP (10 years, $million)	OGR (1 year, $million)	GDP (1 year, $million)
Low	$1,992	858	191	85
Central	$2,190	977	224	100
High	$2,494	1,113	253	113

The benefits assessment shows that HC use contributes significantly to revenues for kiwifruit growers and other orchardists. Therefore, if HC is not available, there would be an impact to growers and to the New Zealand economy. A substantial majority (around 97 percent) of the estimated impacts are for kiwifruit, with most of the remainder impacting on apple production.

There is some potential for these impacts to be offset by a possible price rise if there is a reduction in supply from lack of availability of HC. However, there is too much uncertainty around estimating any fruit price increases in such a scenario, so this has not been factored into the assessment.

The assessment has also not factored in any other potential non-monetary benefits from removal of HC, since again this is too little information to quantify these.

Key discussion points - benefits

You may wish to consider some of the following questions:

- Do you have any comments on our benefits assessment and assumptions?
- How important are these benefits for you or your business, in your area/region?
- Do you have any experience of alternatives to HC and any comment on their relative effectiveness?

Next steps

We have arranged several hui to discuss the risks and benefits from the perspective of Māori stakeholders. We value the insights and perspectives that you will be able to offer and encourage you to participate at a hui if you are able. We'll summarise the discussions from the hui and also use your input to develop a cultural impact assessment. This will inform our proposals for the outcome of the reassessment and will be included in our application for reassessment.

Our application for reassessment will be made publicly available and open for submission. This is another opportunity for you to share your views on the reassessment of HC. You will also have the opportunity to talk to your submission in a hearing, where you can make a presentation to the Decision-making Committee.

All information submitted in the reassessment will be provided to the Decision-making Committee in full. The Decision-making Committee will make its decision based on all the information available, and weigh up the risks and benefits presented by the substance.[7]

You can keep up-to-date with the HC reassessment with the link below. Additionally, we can keep you in the loop via email.

https://www.epa.govt.nz/public-consultations/in-progress/call-for-information-on-hydrogen-cyanamide-products/

If you have any questions, please email reassessments@epa.govt.nz, or contact Julian Jackson, Kaitohutohu Matua / Senior Advisor on 027 225 6151.

Toitū te marae a Tāne, toitū te marae a Tangaroa, toitū te tangata.

When the realms of Tāne and Tangaroa are sustained, the people will thrive.

Ngā mihi nui,
noho ora mai.
Nā,

Te Mana Rauhī Taiao

Environmental Protection Authority

[7] Some further information on the reassessments programme can be found below.
https://www.epa.govt.nz/industry-areas/hazardous-substances/chemical-reassessment-programme/the-reassessment-process/
https://www.epa.govt.nz/industry-areas/hazardous-substances/chemical-reassessment-programme/faqs/

Appendix: approval information

Summary	
Approval for active ingredient[8]	HSR002949
CAS number	420-04-2
Approval for formulation[9]	HRC000001
Products registered under the Agricultural Compounds and Veterinary Medicines Act 1997	**P007333** TREESTART 12-07-2005 Agrinova NZ Limited (trading as Grochem) **P007018** Hortcare Hi-break 29-07-2002 Grosafe Chemicals Ltd **P003566** HI-CANE 01-06-1988 Nufarm Limited **P007840** Synergy HC 05-05-2008 Agsin PTE Ltd **P005858** Gro-Chem HC50 29-11-2001 Agrinova New Zealand Ltd **P007190** CYAN 15-09-2004 Agrinova New Zealand Ltd
2006 reassessment application[10]	HSR05001
2019 grounds for reassessment application[11]	APP203865
2020 reassessment application[12]	APP203974

[8] https://www.epa.govt.nz/database-search/approved-hazardous-substances-with-controls/view/2415
[9] https://www.epa.govt.nz/database-search/approved-hazardous-substances-with-controls/view/6903
[10] https://www.epa.govt.nz/database-search/hsno-application-register/view/HRC05001
[11] https://www.epa.govt.nz/database-search/hsno-application-register/view/APP203865
[12] https://www.epa.govt.nz/public-consultations/in-progress/call-for-information-on-hydrogen-cyanamide-products/