# Submission on the Terms of Reference for the Regulatory Review into the Approval Path for Agricultural and Horticultural Products

New Zealand Kiwifruit Growers Incorporated

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Cover: Gold kiwifruit orchard in Welcome Bay, 22 October 2022, illustrating the difference in bud break where the sprayer applying Hi-Cane was shut off passing a sensitive area.

**Executive Summary**

The Ministry for Regulation has commenced a regulatory review into the approval path for agricultural and horticultural products. The Terms of Reference for the regulatory review were released on 1 August 2024, with submissions due on the 8 September 2024, and a series of online meetings with sector groups have been held to help gather evidence for the review[1].

New products and reassessment processes are both within the scope of the Terms of Reference, including the thresholds for triggering reassessments, and any linkages or overlaps with other regulatory systems. Having recently experienced the reassessment process for hydrogen cyanamide ("HC"), NZKGI is in an ideal position to provide feedback.

In our view, while the HC reassessment process eventually arrived at the right decision, it came at considerable cost to the industry, and there are numerous opportunities for the process to be significantly improved.

In the pages to follow, we describe our experience of the HC reassessment process from start to finish. We experienced multiple issues throughout the process that we consider must be addressed, and we provide 16 recommendations as to how the reassessment process can be improved to provide better outcomes for growers, while also avoiding and mitigating adverse effects on spray operators, bystanders and the environment. While our submission is focussed on the reassessment process, along the way, we also make comments on the approval path for new horticultural products.

We also make comments on the overlap between the requirements of HSNO and the RMA through regional Air Plan rules, and the practical difficulties that this creates for growers. In our view, this overlap warrants consideration as part of this review. We thank the Ministry of Regulation for considering our submission and welcome the opportunity for further input as the review proceeds.

Our 16 recommendations are summarised below.

Recommendation 1: That new information that may trigger a reassessment goes through a rigorous pre-assessment process to determine whether it passes the scientific rigour test, possibly through independent peer review, prior to triggering a reassessment process.

Recommendation 2: That if new information from overseas suggests that an existing product that is being used in New Zealand has the potential for significant adverse effects, a review of any available New Zealand data is carried out to determine whether a reassessment process is justified.

Recommendation 3: That the EPA upholds the legal requirement with regards to confidentiality and respects requests for confidentiality appropriately.

Recommendation 4: That improvements are made to iwi engagement processes associated with reassessments processes to ensure that that they capture sufficiently the wide spectrum of Māori perspectives on the use of the chemical that is being reassessed.

Recommendation 5: That reassessment applications are initiated by an expert panel engaged by the EPA rather than any member of the public.

[1] NZKGI was represented at the meeting on 20 August 2024.

Recommendation 6: That the EPA provides industry with the opportunity to work together to collect more information where necessary, prior to initiating a fully notified reassessment process.

Recommendation 7: That the EPA ensures that there is consistency between documents such as the Reassessment Report and its appendices and that recommendations for further work are complete and clear.

Recommendation 8: That in carrying out its review of the pathway for assessing new products, the Ministry for Regulation considers the practical needs of conventional and organic kiwifruit orchards alike, as well as their relationship to each other.

Recommendation 9: That in carrying out its review of the pathway for assessing new products, the Ministry of Regulation considers the need to respond quickly to constant biosecurity threats from pest and disease incursions, in relation to the timeframe for the approval of new products.

Recommendation 10: That the regulatory review has a future focus based on the likelihood that the risks from pests, like fruit flies, will be exacerbated through a warming climate.

Recommendation 11: That rather than applying the precautionary approach in such a way that it results in recommending a ban of a substance where adverse effects remain uncertain, the EPA continues to ensure it seeks out scientific information which may increase the certainty surrounding adverse effects.

Recommendation 12: That the EPA is provided with updated models and that a process is introduced to ensure that these models are updated as necessary in the future.

Recommendation 13: That the reassessment process requires potential risks to be raised sufficiently early to allow further investigation and information gathering to either confirm the risk or otherwise.

Recommendation 14: That the EPA updates its position prior to any reassessment hearing to appropriately consider any new information received after the EPA Update Report to facilitate and narrow the focus of the hearing.

Recommendation 15: That the EPA updates its Māori Impact Assessment to appropriately consider any new information.

Recommendation 16: That this regulatory review considers the current overlap and interface between HSNO and the RMA, in particular the complexity for growers associated with the combination of differing requirements across Regional Air Plans and the label requirements of individual agrichemicals and works with the Ministers and officials responsible for Resource Management Reform to address this complexity.

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## 1. Introduction

The Ministry for Regulation has commenced a regulatory review into the approval path for agricultural and horticultural products. This review will look at how the government can speed up the process to provide farmers and growers with access to safe, innovative products that they need to remain competitive. The Ministry for Regulation is currently in the process of gathering evidence for the review and is holding meetings and encouraging submissions on the Terms of Reference.

The Terms of Reference states that the regulatory review will focus on the approvals needed for any products used to manage plants and animals under the Agricultural Compounds and Veterinary Medicines (ACVM) and Hazardous Substances and New Organisms (HSNO) regulatory systems. The review seeks to assess how the current regulatory approach is delivering on and balancing the objectives of:

- enabling access to products; and,
- ensuring that risks of products are known and appropriately managed, including to human health, trade, animal welfare, agricultural security, and the environment.

The Terms of Reference also states that the review will aim to achieve its objectives, in part, through:

- looking at the individual regulatory systems as a whole, from the viewpoint of those trying to seek approval through them;
- understanding, what is the problem being addressed by the regulation, and whether the regulatory systems are achieving their stated purpose within the context of the review;
- grounding the review in economic analysis of the market and regulatory interventions, including consideration of the underpinning market failures and the costs and benefits of regulation;
- benchmarking this country's approval path against comparable international regulators and international best practice; and
- considering how the overlap and interface between the HSNO and ACVM regulatory systems is managed by government agencies.

Reassessment processes under HSNO are within the scope of the Terms of Reference, including the thresholds for triggering reassessments, and any linkages or overlaps with other regulatory systems. Submissions on the Terms of Reference are due by 8 September 2024. Having recently experienced the reassessment process for hydrogen cyanamide ("HC"), NZKGI is in an ideal position to provide feedback.

This submission is structured as follows:

- Section 1 is this introduction.
- Section 2 describes who we are.
- Section 3 describes the HC reassessment process, with our suggestions for improvement.
- Section 4 describes the costs to the kiwifruit industry of the HC reassessment process.
- Section 5 considers the overlap and interface between the HSNO legislation and other regulatory systems.
- Section 6 finishes with conclusions.

## 2. Who We Are

New Zealand Kiwifruit Growers Incorporated ("NZKGI") is an advocacy group that is mandated under the Commodity Levies Act 1990 to advocate on behalf of New Zealand kiwifruit growers. NZKGI's mission is to advocate, protect and enhance the commercial and political interests of 2800+ New Zealand kiwifruit growers. The NZKGI Forum, which has a governance role, has 17 regional representatives, 9 supply entity representatives and one Māori representative. The NZKGI Executive, which has a leadership role, is comprised of 6 Forum representatives all of whom are growers. NZKGI's mission is to advocate, protect and enhance the commercial and political interests of 2800+ kiwifruit growers.

Kiwifruit is a significant asset in Māori business portfolios with Māori owned kiwifruit orchards producing approximately 10% of New Zealand's total kiwifruit exports. Māori Kiwifruit Growers Incorporated ("MKGI") is a lobby and advocacy group that was incorporated in 2017 to provide for active participation in the governance of the kiwifruit industry, and to advocate for its members on policy reform and resource management issues.

MKGI's executive comprises 11 regional members based on production volumes and one member appointed as a representative on NZKGI. With 72 registered members covering 66 KPINs[2], MKGI provides a consolidated voice and representation on a number of issues. In saying that, MKGI believes in independence, autonomy and tino rangatiratanga. In this respect the voice of Māori growers and their governance boards is paramount, and Māori growers are encouraged to submit and speak independently on matters of importance to them.

NZKGI, MKGI, and many other growers, both Māori and non-Māori, prepared submissions on the HC reassessment application and presented evidence at the hearing. In addition, many other organisations including Zespri, the manufacturers and importers of HC, spray contractors and those involved in scientific research of the use of HC and other chemicals and new cultivars also prepared submissions and presented at the hearing.

## 3. The HC Reassessment Process

In the sections below, we describe the reassessment process from start to finish with the aim of identifying where we experienced problems along with our suggestions as to how they might be addressed as part of the regulatory review.

### 3.1 Grounds for Reassessment

In September 2019, grounds for the reassessment of HC were established based on the availability of new information on its effects. The new information included the European Food Safety Authority ("EFSA") review and associated human health and environmental risk assessments, and the subsequent European Union decision implementing the EFSA recommendation.

The new information suggested that HC posed a potential carcinogenic risk. We note that following a detailed review (which happened after the call for information) of the available carcinogenicity studies by Professor Rhonda Rosengren[3] the EPA updated its proposals to no longer included the suspected carcinogen (Category 2) classification. Given this was the sole reason that HC was reassessed in the first place, this outcome begs the question as to why HC was reassessed at all. In relation to the carcinogenic risk of HC it is clear that the grounds cited were not proven to be scientifically robust or well founded.

[2] A KPIN is Kiwifruit Property Identification Number. It is issues by Zespri in respect of an orchard.

[3] Initiated and funded by NZKGI

Early in the process, and following the call for information, the EPA established that there was one ground for reassessment – significant new information relating to the effects of the substance had become available (s62(2)(a) HSNO Act), namely the 2010 EFSA documents.

The other possible grounds:

(a) A change in controls under the Health and Safety at Work Act 2015 (s62(2(aa));

(b) The availability of other substances with similar or improved beneficial effects and reduced adverse effects (s62(2)b);

(c) Information showing a significant change of use, or a significant change in the quantity manufactured, imported or developed has become available (s65(2)(cw);

(d) Any other reasons (s62(2));

were not cited as possible grounds for the reassessment.

The EPA decided therefore, that:

*"… grounds exist under section 62 of the Act for the reassessment of soluble concentrate containing 520 to 540 ug/L hydrogen cyanamide, on the basis that significant new information about the effects of the substance has become available (section 62(2)(a))."*

As noted, the EPA accepted the report provided by Professor Rosengren. In our view the EPA should have carried out its own pre-assessment to check the scientific rigour of the new information. This could have included a peer review of the new information relating to the risk of carcinogenicity. If this had been done, the new information on the carcinogenicity risk could been excluded from the reassessment process.

In addition, given that HC has been used in Aotearoa New Zealand for over 30 years, the EPA could have carried out its own preliminary investigations to determine whether there was any evidence of adverse effects from the use of the chemical. For example, in relation to carcinogenic risk, this could have included a review of existing data to determine whether there was any statistical correlation between cancer incidents and the use of HC in kiwifruit orchards that would suggest that a reassessment was warranted. This type of investigation would be appropriate when new information is sourced from overseas and/or laboratory based and may not be relevant or applicable in New Zealand. In addition, it would have provided additional support to exclude the risk of carcinogenicity from the reassessment process.

In our view, pre-assessment of the new information would have considerably improved the HC reassessment process. We understand that the EPA has limited resources. A pre-assessment process for new information has the potential to simplify and streamline the reassessment process by putting aside new information that fails a test of scientific scrutiny or relevance in Aotearoa New Zealand. As well as providing significant benefits to industry, this would allow the EPA to focus its limited resources on priority chemicals that warrant urgent reassessment, such as the recent EPA red alert that recommends that people stop using the herbicide chlorthal-dimethyl (also known as DCPA) because of significant concerns about its effects on unborn children.

**Recommendation 1: That new information that may trigger a reassessment goes through a rigorous pre-assessment process to determine whether it passes the scientific rigour test, possibly through independent peer review, prior to triggering a reassessment process.**

**Recommendation 2: That if new information from overseas suggests that an existing product that is being used in New Zealand has the potential for significant adverse effects, a review of any available New Zealand data is carried out to determine whether a reassessment process is justified.**

## 3.2 Pre-application

### 3.2.1 Confidentiality

As noted in the Application Report[4] the EPA issued a call for information and heard from 12 parties including NZKGI. In its response to the call NZKGI included a technical document and asked the EPA for much of it to be withheld on the basis that it contained commercially sensitive information. Despite this, the EPA chose to publicly release the report prior to any decision on reassessment having been made.

Although the horse had bolted, NZKGI considered that it was essential to have a ruling on such call for information documentation. NZKGI complained to the Ombudsman on this breach of confidentiality. The Ombudsman confirmed that legally the material was not subject to the Official Information Act as it was material provided prior to a reassessment decision having been made. The Ombudsman's clear ruling was that the information should not have been released.

The reason for bringing this up is that it is vital that a level of trust exists between those who regulate and those who are regulated. Without this trust, the regulatory system will fail. This is particularly the true of the HSNO system which is highly technical and relies heavily on technical inputs and expert advice across the spectrum of those who are regulated.

**Recommendation 3: That the EPA upholds the legal requirement with regards to confidentiality and respects requests for confidentiality appropriately.**

### 3.2.2 Māori Impact Assessment

In mid-2021, the EPA held hui in kiwifruit-growing regions (Kerikeri, Ōpotiki, and Tauranga) to consult with Māori kiwifruit growers and used that information for the EPA Māori impact assessment report.

In their submission, Māori Kiwifruit Growers[5] stated the following:

*"MKGI believe that the engagement with Māori by EPA was not sufficient for a decision with as much economic impact that banning Hicane has. There needed to be more conversations, research and substantive evidence on both beneficial and detrimental effects to Māori communities and the environment rather than just the 'potential' threats outlined. There are Māori orchardists that have applied Hicane for decades, while adopting safe practice, and not seen purported adverse effects to the environment or people, so would challenge some of the claims outlined by the EPA."*

Seeka's submission stated that Seeka and their grower community including Māori growers, were not properly consulted by the EPA. Seeka's submission was supported by a number of Māori grower entities and trusts including Tapuika Iwi Authority, Te Awanui Huka Pak, Waiokaha Hort Investments, Te Kaha Gold, Orete Farm Trust, Makarena Trust, Pirihima, Patetu, Tahawai Trust, Te Tumu Paeroa, Ohuki Trust, Pukaingataru Trust, Te Mata Lands

[4] September 2021

[5] Supported by other Maori submitters e.g. Tairawhiti Whenua

Trust, Tauranga Moana Maorui Trust, Ngāti Hine Forestry Trust, Ongare Trust Magatawa Papamoa Blocks, Tangitu Whānau Trust, Te Orea Trust, Makarena Trust, Ranginui 12 Trust, Otama Marere Trust, Ahu Moana B8 and B9 Trust, Ngai Tukairangi Trust and Te Arawa Management Limited.

In Direction and Minute WGT012, the decision-making committee considered that the available information on social impacts was incomplete and that an independent report would provide a more comprehensive investigation of these aspects. The EPA staff made the necessary arrangements for an independent Social Impact Assessment to be prepared, and contacted parties to the reassessment to determine if they were willing to contribute. The Social Impact Report was prepared by Sapere and as well as conducting interviews with individual submitters, two hui were held with Māori orchardists and representatives. Section 5.2 of the Social Impact Report states:

*"While our SIA in not necessarily the domain in which to fully explore this view, it is worth noting that Māori trusts and orchardists challenged the premise of the previously conducted Māori Impact Assessment (MIA), arguing that it failed to capture a sufficiently wide spectrum of Māori perspectives on the issue. According to these growers, had the MIA been sufficiently wide, it would have fully comprehended the extent of social contribution emanating from kiwifruit growing, given its embeddedness in local communities."*

At the closing of the hearing, the EPA[6] stated:

*"With regards to Māori consultation, we organised three hui across the Bay of Plenty and Northland in 2021. The goal of this was to engage with Māori stakeholders in the kiwifruit industry, inform them about the process and encourage participation. We engaged Sapare to follow up on their economic benefits with a social impact report focused on the communities that would be impacted by a removal of hydrogen cyanamide. We do however recognise after hearing from so many parties during this hearing that we did not engage with as many groups in this process as we would have liked."*

We note that it was the first time that Māori engagement had been undertaken by the EPA for a reassessment application[7], and that the EPA acknowledges that they did not engage with as many Māori groups in this process as they would have liked. Our view is that it is important that this experience, and the learnings from it, are not forgotten during the regulatory review process.

**Recommendation 4: That improvements are made to iwi engagement processes associated with reassessments processes to ensure that that they capture sufficiently the wide spectrum of Māori perspectives on the use of the chemical that is being reassessed.**

### 3.3 Who Can Apply for a Reassessment

Within Aotearoa New Zealand, anyone can apply for a reassessment of a hazardous substance if they can demonstrate that there are grounds for reassessment, and, if grounds exist, by submitting a reassessment application including information that supports the application. In this case the HC reassessment application was initiated by a private individual, but it was ultimately taken over by the Chief Executive of the EPA.

While not wishing to cast aspersions onto the individual involved, in our view it would be more appropriate if reassessment applications were initiated by an expert panel acting for

[6] Transcript Hydrogen Cyanamide Hearing Day 5 Friday 1 March, page 391.
[7] Transcript Hydrogen Cyanamide Hearing Day 1 Monday 26 February, page 8.

the EPA, rather than an individual, to avoid any perception of bias. The expert panel would assess the information from the pre-assessment process (refer Recommendations 1 and 2) before deciding whether to initiate a full reassessment.

**Recommendation 5: That reassessment applications are initiated by an expert panel engaged by the EPA rather than any member of the public.**

### 3.4 Notification of application and Public Consultation

The HC reassessment application was publicly notified on 30 September 2021 and was open for submissions from 30 September 2021 to 20 December 2021.

The Application Report stated that, while finely balanced, the benefits associated with hydrogen cyanamide were assessed as being medium-high, the risks to operators medium and the risks to birds high and accordingly the overall adverse effects were considered to outweigh the positive effects. Based on this weighting, it was proposed that the approvals for HC should be declined, and a phase-out period of five years from the date of the decision was proposed.

It was noted that further information could result in revisions to these recommendations. Submitters were requested to provide feedback information in these key areas:

- Feedback on selection of human health risk assessment input values for the quantitative modelling,
- Input on proposed maximum application rate restrictions, and information on effectiveness of lower application rates,
- Information on advances in closed cab application, closed systems for mixing and loading, and other technological developments,
- Occupational exposure monitoring data, if available,
- Crop-specific spray drift curve information with full supporting data, or refined risk assessments,
- Information on bird behaviour in New Zealand orchards, or further data to refine the modelling of risks to birds,
- Information on alternatives to hydrogen cyanamide, their relative const and effectiveness, and any recent developments.

NZKGI, together with others in the industry, commissioned a number of technical studies to respond to this request for further information, along with some additional studies that were considered to be necessary, e.g. the TDB Advisory Report on the National Wellbeing Impacts of the Removal of HC.

In our view the process should have been improved by the EPA working collaboratively with the industry to engage suitably qualified and experienced independent consultants to address information gaps prior to initiating a reassessment process. By doing so, in all likelihood a reassessment process could have been avoided. In our view, a lack of information should not trigger a reassessment. Instead, it should be a reason to collect more information.

We also reiterate the point that 30 years of HC use in Aotearoa New Zealand had not resulted in any evidence of the stated potential for adverse effects by growers.

**Recommendation 6: That the EPA provides industry with the opportunity to work together to collect more information where necessary, prior to initiating a fully notified reassessment process.**

### 3.5 The EPA's Update Report

The EPA's December 2022 Update Report provided an updated recommendation following receipt of additional studies commissioned by NZKGI and Zespri, further analysis and submissions. The report stated the following:

*"11.20 While the economic benefits are assessed as being **high**, the risks to operators are assessed as **low**, the 'in-field' chronic (reproductive) toxicity risks to soil organisms are assessed as **high**, the acute risks to birds are assessed as **low** to **medium**, and the chronic (reproductive) risks to birds are assessed as **medium** to **high**. Coupled with this are risks that continued use would disproportionately impact on Māori ways of life and taha hauora (human health and wellbeing) and may adversely affect the ability of Māori to exercise kaitiakitanga, although it is also acknowledged that there are significant benefits to some iwi and hapū that have interests in kiwifruit production.*

*11.21 It is not clear that the substance should be declined under section 29(1)(b) of the HSNO Act on the basis that the adverse effects of the substance outweigh the positive effects.*

*11.22 Therefore, an assessment needs to be made as to whether the positive effects of the substance outweigh the adverse effects and the substance should continue to be approved under section 29(1)(a) of the HSNO Act. This analysis must also take into account the extent to which the risks and any costs associated with that substance may be outweighed by benefits in accordance with clause 27(1) of the HSNO Methodology Order.*

*11.23 Based on the currently available information, while economic benefits are high, there are also some high risks to soil organisms and birds. The EPA recommends that approvals for substances containing hydrogen cyanamide be declined, on the basis that the level of beneficial effects does not sufficiently outweigh the level of residual risk and the need for a precautionary approach. There is a significant degree of uncertainty around some of the scientific information upon which these residual risks are based, so the EPA recommends an extended time period of ten years until the expiry date of the approvals, which could allow time for those uncertainties to be addressed.*

The conclusions from the Update Report gave rise to four issues as discussed below.

#### 3.5.1 New Issue – Soil Organisms and Report Anomalies

It was a total surprise to NZKGI when the Update Report identified high risks to soil organisms, given that the EPA Reassessment Report had stated at paragraph 7.40 that the risk to soil organisms were considered low and that no additional data relating to soil organisms was requested. NZKGI subsequently undertook an analysis to try to understand why the risk to soil organisms had been identified in the Update Report as one of the reasons for the proposed ban/phase-out of HC.

NZKGI's response to the Update Report provides more detail[8] but in summary, inconsistencies were found between the Reassessment Report and its Appendix B: Updates to the environmental risk assessment APP203974 dated August 2021.

[8] Commencing at page 13

NZKGI was extremely disappointed that the risk to soil organisms had been identified as an issue at such a late stage, especially given that it directly contributed to the recommendation to ban HC. As it happened, the delay to the hearing (precipitated by the flood events that occurred at the beginning of 2023, and further extended due to a request from NZKGI) provided an opportunity for NZKGI to commission a soil organisms trial at a kiwifruit orchard in Te Puke. If the hearing had not been delayed there would have been insufficient time to run the trial.

**Recommendation 7: That the EPA ensures that there is consistency between documents such as the Reassessment Report and its appendices and that recommendations for further work are complete and clear.**

### 3.5.2 Transition to Organic Production

In the Update Report it was suggested that transition to organic production would be an alternative should HC be phased out[9]. In our view this suggestion was without evidential support and therefore any foundation. The reasons why transition to organic production is not practical were described in Whetu Rolleston's evidence[10] and include a current lack of demand for organic Sungold kiwifruit. We also note that the predominance of conventionally produced kiwifruit orchards provides an under-acknowledged buffer to future and pest disease problems on organic orchards.

Organic growers have significantly limited agrichemical options for pest and disease control. Aotearoa New Zealand is facing constant biosecurity threats from pest and disease incursions and the risks from pests like fruit flies increases in a warm climate.

While this submission is primarily focussed on the reassessment process, we support the regulatory review into new products as well, noting the need for a more streamlined and affordable process of approval for horticultural products for conventional and organic orchards alike.

**Recommendation 8: That in carrying out its review of the pathway for assessing new products, the Ministry of Regulation considers the practical needs of conventional and organic kiwifruit orchards alike, as well as their relationship to each other.**

**Recommendation 9: That in carrying out its review of the pathway for assessing new products, the Ministry of Regulation considers the need to respond quickly to constant biosecurity threats from pest and disease incursions, in relation to the timeframe for the approval of new products.**

**Recommendation 10: That the regulatory review has a future focus based on the likelihood that the risks from pests, like fruit flies, will be exacerbated through a warming climate.**

### 3.5.3 Incorrect Use of Precautionary Approach

The relevant legislative framework for decision making is set out in section 29 of the HSNO Act, which states as follows:

***"29 Determination of applications***

*(1) After considering any application for approval made under section 28 the Authority may, in its discretion,—*

[9] Page 35
[10] Page 15

*(a) approve the application if, after taking into account—*
*(i) any controls which may be imposed on the substance; and*
*(ii) all effects of the substance during the life cycle of that substance; and*
*(iii) the likely effects of the substance being unavailable,—*
*the positive effects of the substance outweigh the adverse effects; or*
*(b) decline the application if, after taking into account—*
*(i) any controls which may be imposed on the substance; and*
*(ii) all effects of the substance during the life cycle of that substance; and*
*(iii) the likely effects of the substance being unavailable,—*
*the adverse effects of the substance outweigh the positive effects; or*
*(c) decline the application if insufficient information is available to enable the Authority to determine the adverse effects of the substance.*

*(2) The provisions of sections 77, 77A, and 77B shall apply to any substance approved by the Authority under subsection (1)."*

The crux of the decision-making function under the HSNO Act is essentially a cost-benefit analysis in its broadest sense. Having imposed any controls, if the adverse effects (risks) outweigh the positive effects (benefits), then the application should be declined. If the reverse applies, then that application should be granted.

The application of the precautionary principle featured largely in the entire HC reassessment application because the Update Report relied on the application of the principle to recommend a phase out of the use of hydrogen cyanamide. Section 7 of the HSNO Act requires decision makers to take a precautionary approach to effects management, as follows:

***"7 Precautionary approach***

*All persons exercising functions, powers, and duties under this Act including, but not limited to, functions, powers, and duties under sections 28A, 29, 32, 38, 45, and 48, shall take into account the need for caution in managing adverse effects where there is scientific and technical uncertainty about those effects."*

The precautionary approach in section 7 requires the relevant decision maker to consider the environmental effects, and where there is scientific or technical uncertainty, the decision to approve a hazardous substance for use within Aotearoa New Zealand should be carefully weighed for the purposes of environmental and human health protection. It is important to note, however, that section 6(e) of the HSNO Act also requires the benefits of the substance to be taken into account[11].

The EPA indicated that it considered that the precautionary approach required them to land on banning a substance where the adverse risks remain uncertain. Such a stance runs contrary to the approach under the HSNO[12] and the statutory risk assessment framework it embodies. These require the EPA to continue to seek out scientific information which may increase the certainty surrounding adverse effects. Where the risks remain uncertain, there is a requirement to instead decide on management measures which appropriately mitigate a potential risk, rather than completely ban a substance in entirety.

It is submitted that the HSNO Act is not a no risk statute, but a risk management one. There is always an element of scientific uncertainty in relation to hazardous substances management, where new studies (from around the world) provide new information. The focus should have been on determining what exactly was the scientific uncertainty.

[11] National Beekeepers… [2007] NZCA 556.
[12] *Bleakley v Environmental Risk Management Authority* (2004) 11 ELRNZ 289 (HC) at [46].

The evidence for NZKGI was that all risks identified could be appropriately managed by controls. Therefore, the evidence from NZKGI was that the scientific uncertainty was not at the high level determined by the EPA.

The decision-making committee considered that based on the evidence provided, the 10-year expiry date proposal put forward by the EPA was not justified. The committee approved the reassessment, and therefore the ongoing use of hydrogen cyanamide with controls.

**Recommendation 11: That rather than applying the precautionary approach in such a way that it results in recommending a ban of a substance where adverse effects remain uncertain, the EPA continues to ensure it seeks out scientific information which may increase the certainty surrounding adverse effects.**

## 3.6 Pre-Hearing

### 3.6.1 Outdated Models

The EPA published three reports on its website on 1 February 2024:

- Briefing to the Incoming Minister (November 2023)
- The Environmental Protection Authority's assessment and reassessment functions under the HSNO Act Supplementary Briefing to the in incoming Minister (November 2023) and,
- The EPA's role and performance in assessing hazardous substances (28 November 2023) by Sapere.

These reports found that the ecotoxicology models used by the EPA to assess risk from hazardous substances are aging and no longer being used by comparable regulators overseas, with four of the nine models classed as obsolete.

The Sapere Report noted that "reliance on the outdated models … are likely to result in increasingly conservative outputs" and that that "many of the models used by the EPA are no longer reliable."

For the HC reassessment, this was particularly of concern given that Sapere noted that the model used to assess the risk to birds was obsolete and out of date, as was the model for assessing spray drift and runoff. In addition, the soil organisms' model was 15 years old and referred to by Sapere as not a true model. Given that the risks to birds and soil organisms contributed to a recommendation to ban the substance, this was of serious concern. It is important that the issue of outdated models is addressed as part of the regulatory review to restore confidence that the models will contribute to sensible, scientifically robust outcomes.

**Recommendation 12: That the EPA is provided with updated models and that a process is introduced to ensure that these models are updated as necessary in the future.**

### 3.6.2 New Issue – Non-target arthropods

The PowerPoint slides that the EPA prepared for the hearing (and circulated just prior) appeared to suggest that the EPA had changed its position on non-target arthropods from its earlier pre-circulated assessments, and that the risk to non-target arthropods could not be mitigated with controls. It remains unclear as to why the EPA considered that the risk could not be mitigated.

With the hearing almost ready to commence, this left no time for NZKGI or others to respond to this change in position or engage an expert to give evidence. As it happens, this did not prove to be a material issue at the hearing, but it raises a question of natural justice and a possible issue of prejudice and the need for potential risks to be signalled early to provide adequate time for them to be investigated.

**Recommendation 13: That the reassessment process requires potential risks to be raised sufficiently early to allow further investigation and information gathering to either confirm the risk or otherwise.**

### 3.7 Hearing

#### 3.7.1 No Updated EPA Report

NZKGI was disappointed that, despite being asked, the EPA did not provide an update on its recommendation prior to the hearing. This was despite the EPA having new information that it could have considered, e.g. near final draft evidence including the soil organisms trial report and the Social Impact Assessment.

This meant that NZKGI had to prepare its legal submissions and evidence based on the recommendation that hydrogen cyanamide be phased out over a ten-year period. This added significant additional cost to NZKGI to prepare for the hearing.

**Recommendation 14: That the EPA updates its position prior to any reassessment hearing to appropriately consider any new information received after the EPA Update Report to facilitate and narrow the focus of the hearing.**

#### 3.7.2 No Updated Māori Impact Assessment ("MIA")

The Social Impact Assessment contained significant new information regarding the potential effects on Māori should HC be banned, which in our view should have resulted in an update to the MIA.

**Recommendation 15: That the EPA updates its MIA to appropriately consider any new information.**

## 4. Financial and Other Consequences of the Reassessment Process

It is estimated that the HC reassessment process cost the kiwifruit industry in the order of $2m. Because it happened at a time of low tray numbers, NZKGI used all of its retained earnings funding the work needed to protect the interests of growers. We make the point that other, smaller industries would have been unable to absorb these costs.

As we have described in this paper, there are many ways that the process could be improved to provide better outcomes for growers while avoiding and mitigating effects on spray operators, bystanders and the environment.

In our experience, the recommendation to ban HC caused considerable uncertainty and stress for growers and was a disincentive to investment and growth. During the HC reassessment process (which was a number of years), some kiwifruit orchard sales fell through due to concerns around the prospect of a HC ban by potential purchasers, some packhouses put their plans to invest in automation and greater processing capacity on hold, and some in the industry found it difficult to access capital value while the ban was on the table.

A ban or phase-out of HC would have resulted in an immediate reduction in orchard value. For existing growers, and new entrants in particular, who are funding development through debt within a high inflation and volatile economic environment, a ban would have resulted in many being in negative equity positions. With little financial resilience, not only would this reflect on their financial positions, but considerable stress would have been placed on their wellbeing. A substantial number of submitters to the HC hearing raised the issue of mental health impacts should a phase out or ban be implemented. The release of the HC reassessment decision was welcome relief for growers. Notwithstanding the outcome it is important to emphasise that eh spectre of a ban on HC hung over the heads of the industry for many years. This caused genuine financial and mental health impacts some of which are still being felt today.

We also make the point that the suggestion that HC could cause cancer with a recommendation to ban the substance is difficult to shake from peoples' minds, even when subsequent work has demonstrated the contrary. The industry has prepared a fact sheet for growers to distribute to their neighbours but in many respects the perception damage has been done and the industry will need to continue educating the public on this matter for many years to come.

Growers have reported that some people in their community have inherent doubts about any science that has been commissioned and paid for by the industry, despite the fact that it has been prepared by independent and suitably qualified and experienced experts. In our view, and as described previously, the EPA could have reviewed the new information that suggested that HC was carcinogenic itself prior to triggering the reassessment. This could have resulted in the reassessment being avoided altogether or considerably narrowed in its focus resulting in better timeliness, and reduced hardship, due to the uncertainty and costs for growers.

## 5. Overlap and interface between HSNO and other regulatory systems

The HSNO Act focusses on approvals for substances and organisms and details the controls that apply to the specific substance from cradle to grave. The Resource Management Act 1991 (RMA), and its offshoot regulations focus on the effects of activities. In our view there is an overlap between these two regulatory regimes that needs to be addressed. We note that this overlap has been in existence since the time both Acts came into effect. It became very evident during the reassessment of HC.

When compared to each other, regional plans have different standards for their permitted activity rules for agrichemical spraying, for example in relation to the definition of sensitive areas and in relation to compliance with New Zealand Standard, Management of Agrichemicals (NZS 8409:2004)[13]. Regional plans also differ in relation to notification requirements and understanding and complying with these varying requirements is challenging for growers, contractors and ZespriGAP/GlobalGAP auditors working across different regions.

The EPA imposes controls through the labels and safety data sheets for individual agrichemicals, and some of these have the same goal as the regional council rules in terms of avoiding or mitigating adverse effects on bystanders and the environment. This creates a complex and administratively difficult regulatory environment for growers and also for regulators – who are currently regional councils.

[13] Note this is now a 2021 standard.

By way of example, Attachment 1 summarises some of the regional agrichemical airblast spraying rules and compares them with the label requirements for HC. The table identifies a number of inconsistencies e.g.:

- The maximum windspeed control for HC (label requirement) is 20 km/h whereas the regional rules in Tairawhiti and Tasman set a maximum windspeed of 15 km/h,
- The definition of a sensitive spray area varies across regions, and is inconsistent with the HC label requirements,
- The buffer zone rules are inconsistent across regions and difficult to understand, and are also inconsistent with the HC label requirements, especially in Northland,
- The definition of "Effective Shelter" in the Northland Regional Plan is very different to the definition of "Effective Shelter" as stated on the HC label.

The situation becomes even more complicated given that the kiwifruit industry uses a number of different agrichemicals in addition to HC.

Our preliminary view is that a National Environmental Standard ("NES"), promulgated under the RMA has the potential to create a consistent rule framework for the kiwifruit industry across districts and regions for a number of activities including:

- agrichemical spraying,
- biosecurity responses,
- natural and artificial shelter and crop support structures,
- audible bird scaring devices,
- frost fans,
- worker accommodation,
- orchard toilets,
- well drilling and pump testing,
- and possibly perennial horticultural crop survival water.

We have made this view known to the Ministers and officials responsible for Resource Management Reform and we urge the Ministry for Regulation to keep this in mind as they consider the overlap and interface between the HSNO legislation and other regulatory systems.

In our view, the current complexity in terms of agrichemical regulation could be overcome if an NES contained a permitted activity rule for agrichemical spraying with a simplified set of conditions, generally as follows:

*"The spraying of agrichemicals that:*

- *complies with the controls specified on individual agrichemical labels and the requirements of Safety Data Sheets,*
- *avoids adverse effects of spray drift beyond the property boundary of the subject property, and,*
- *complies with the mandatory sections of New Zealand Standard, Management of Agrichemicals (NZ 8409:2021)* – (noting that the 2021 standard will likely require review to ensure that it is fit for purpose)

*is a permitted activity."*

We recognise that there may be other ways of addressing the problem, but wish to draw this matter to the attention of the Ministry of Regulation as a matter that needs to be resolved as part of the review process.

**Recommendation 16: That this regulatory review considers the current overlap and interface between HSNO and the RMA, in particular the complexity for growers associated with the combination of differing requirements across Regional Air Plans and the label requirements of individual agrichemicals and works with the Ministers and officials responsible for Resource Management Reform to address this complexity.**

## 6. Conclusions

It is fair to say that based on their experience with the reassessment process for HC, kiwifruit growers wholeheartedly support a review of the approval process.

Growers are concerned that while the process ultimately led to the right outcome, the process itself was fundamentally flawed and resulted in considerable hardship including uncertainty and cost for the industry. This submission illustrates why growers feel that way, with recommendations as to how the reassessment process can be improved to provide better outcomes for growers, while avoiding and mitigating adverse effects on spray operators, bystanders and the environment.

The overlap between the practical requirements of HSNO and the RMA and the difficulties that this creates for growers warrants consideration as part of this review. The different rules for agrichemical spraying across different regions combined with the label requirements for individual agrichemicals makes for an unnecessarily complex regulatory regime for growers.

We thank the Ministry of Regulation for considering our submission and would welcome the opportunity for further input as the review proceeds.

## Attachment 1 – Selected Regional Air Plan Permitted Activity Rule Conditions and HC (trade name "Hi-Cane")Label Requirements

Yellow highlights inconsistencies in the rules between regions and the Hi-Cane label.

<table>
<tr><th></th><th>Windspeed</th><th>Buffer Zones</th><th>Spray Quality</th><th>Sensitive Area Definition[14]</th></tr>
<tr><td>Hi-Cane Label Requirements</td><td>A person applying this substance must ensure that the substance 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.<br>Explanatory note: In winter, an air temperature inversion occurs when cold air close t 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.</td><td>Bystander buffer zones<br><table><tr><th>Use pattern description</th><th>Downwind buffer zone</th></tr><tr><td>Kiwifruit≤25 kg ai/ha – Air Blast</td><td>6m (with shelter)</td></tr><tr><td>Kiwifruit ≤25 ai/ha – Air Blast</td><td>8m (without shelter)</td></tr></table>Aquatic environment buffer zones<br><table><tr><th>Use pattern description</th><th>Waterbody downwind buffer zone</th><th>Waterbody run-off buffer zone</th></tr><tr><td rowspan="2">Kiwifruit ≤25 ai/ha – Air Blast</td><td>6m (with shelter)</td><td rowspan="2"><5% sloped: 10m<br>5-10% slope: 15m<br>>10% slope:20m</td></tr><tr><td>10m (without shelter)</td></tr></table>Non-target plant downwind buffer zones<br><table><tr><th>Use pattern description</th><th>Downwind buffer zone – non-threatened species</th><th>Downwind buffer zone – threatened species</th></tr><tr><td rowspan="2">Kiwifruit ≤25 ai/ha – Air Blast</td><td>6m (with shelter)</td><td rowspan="2">15m</td></tr><tr><td>10m (without shelter)</td></tr></table>Explanatory note – effective shelter: "Effective shelter is defined as planted trees 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%."</td><td>A person applying this substance must ensure that the substance is only applied 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 atomizers.</td><td>Refer buffer zones column. Sensitive areas are defined as bystanders, aquatic environment buffer zones, and non target plants.<br>Note the multiple differences in the definition of sensitive areas below.</td></tr>
<tr><td>Northland Regional Plan<br>prp<br>Page 175</td><td>In addition to the requirements for spray-sensitive areas in Table 2 below, C.6.5.1 2) d) states that agrichemical application must not occur if:<br>i. Wind speeds are greater than 6 m/s plus gusts; or<br>ii. Wind speeds are between 0-1 m/s and inversion conditions are present or likely to be present during application.<br><br>C6.5.1 requires spraying to be undertaken in accordance with a number of sections of New Zealand Standard, Management of Agrichemicals (NZS</td><td>C6.5.1 requires spraying to be undertaken in accordance with a number of sections of New Zealand Standard, Management of Agrichemicals (NZS 8409:2004[16]) – detailed under the "Spray Quality" column in this table.<br>In addition to the sensitive areas defined in Table 2 below, NZS 8409:2004 Section 5.3.4.4 states that where appropriate, buffer zones shall be used to minimise spray drift hazard to sensitive areas. However, applicators shall not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift</td><td>C6.5.1 states that the discharge of an agrichemical into air or onto or into land is a permitted activity, provided:<br>2) for ground-based spraying and aerial spraying:<br>a) the activity is undertaken in accordance with the following sections of the New Zealand Standard, Management of Agrichemicals (NZS 8409:2004) as it relates to the management of the discharge of agrichemicals:<br>i. Use – Part 5.3, and<br>ii. Storage – Appendix L4, and<br>iii. Disposal – Appendix 5, and<br>iv. Records – Appendix C9, and…<br>Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns</td><td>Part B of the Proposed Regional Plan contains the definitions. "Spray-sensitive area" is defined as:<br>1) Residential buildings and associated garden areas, and<br>2) schools, hospital buildings and care facilities and grounds, and<br>3) amenity areas where people congregate including parks and reserves, and<br>4) community buildings and grounds, including places of worship and marae, and<br>5) certified organic farms, and<br>6) orchards, crops and commercial growing areas, and<br>7) water bodies used for the supply of drinking water and for stock drinking, and<br>8) natural wetlands and significant areas of indigenous vegetation and habitats of indigenous fauna as defined in the Regional Policy Statement for Northland, and</td></tr>
</table>

[14] NZS8409:2004 has a section on Sensitive Areas in Appendix G, G4. While examples of sensitive areas are provided, the document states that a check should be made with the regional authority because there may be sensitive areas specified in the regional plan.

[16] Section 1.2.1 of NZS8409:2004 states that for the purposes of the standard, "shall" refers to practices that are mandatory for compliance with the Standard. The word "should" refers to practices that are advised or recommended. All of the regional plans referred to in the table (except Tasman) refer to NZS8409:2004 in some respect.

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
|---|---|---|---|---|
| | 8409:2004[15]) – detailed under the "Spray Quality" column in this table. Section 5.3.4.1 of NZS 8409:2004 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (it refers to Appendix G – Spray Drift Hazard and Weather Conditions).<br>Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | models can be used to give more detailed information for specific situations. | diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | 9) roofing for the collection of drinking water; and<br>10) apiaries. |
| Proposed Plan Change 13 (Air Quality) to the **Bay of Plenty** Regional Natural Resources Plan regional-air-plan page 12 | AIR-AGR-R18 (5) has an advice note stating that users (particularly large-scale) **should** also comply with the New Zealand Standard Management of Agrichemicals NZS 8409:2004. NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made | No specific reference to buffer zones but AIR-AGR-R18 (5) requires a Spray Risk Management Plan to be prepared and implemented. (5) (b) (iii) requires the Spray Drift Management Plan to include strategies to avoid contamination of sensitive areas and public roads including consideration of the Draft Hazard Guidance Chart contained within Table G1 of NZS 8409:2004. Table G1 makes mention of buffer zones but as a guideline only. | AIR-AGR-R18 (5) has an advice note stating that users (particularly large-scale) should also comply with the New Zealand Standard Management of Agrichemicals NZS 8409:2004.<br>Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q). Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance | **Sensitive area** means an activity that is particularly sensitive to adverse effects associated with air contaminant discharges either due to the vulnerability of the population or area exposed to the contaminant, or due to the potential for people to be exposed for prolonged periods and may include:<br>(a) residential buildings and areas (including marae)<br>(b) childcare centres, schools, educational facilities |

[15] Section 1.2.1 of NZS8409:2004 states that for the purposes of the standard, "shall" refers to practices that are mandatory for compliance with the Standard. The word "should" refers to practices that are advised or recommended. All of the regional plans referred to in the table (except Tasman) refer to NZS8409:2004 in some respect.

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
|---|---|---|---|---|
| | unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G).<br>Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | AIR-AGR-R18 (5) has an advice note stating that users (particularly large-scale) **should** also comply with the New Zealand Standard Management of Agrichemicals NZS 8409:2004.<br>NZS 8409:2004 Section 5.3.4.4 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift models can be used to give more detailed information for specific situations. | Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | (c) hospitals, nursing homes, aged care facilities<br>(d) offices, consulting rooms, gymnasiums, community centres<br>(e) hotels, motels, caravan parks, camping areas, tourist accommodation<br>(f) correctional facilities<br>(g) **public amenity areas**<br>(h) manufacturing or storage of food or beverages<br>(i) manufacturing or storage of electronics<br>(j) public water supply catchments and intakes.<br>(k) incompatible crops or farming systems (e.g. organic farms, greenhouses)<br>(l) household water supplies (including roofs from which a water supply is obtained).<br>**Public amenity area** means a public area where members of the public are likely to congregate for extended periods of time. This may include (but is not limited to): backcountry huts, barbeques, changing facilities, cycleways, outdoor sports facilities, parks and reserves, playgrounds and playground equipment, public toilets, seating and picnic tables, shelters, squares, and walkways.<br>(Note the reference to public roads in the column headed "buffer zones"). |
| **Tairawhiti** Resource Management Plan TRMP-Part-C1-C4 Page 31 | Rule 1.5.4(14) contains standard c) which states that the application of agrichemicals shall not occur in winds greater than 15 km/hr over the target area. Standard d) states that the agrichemical shall be used in a manner complying with NZS 8409:2004 Management of Agrichemicals.<br>NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G). | No specific reference on buffer zones but Rule 1.5.4(14) standard d) states that the agrichemicals shall be used in a manner complying with NZS8409:2004 Management of Agrichemicals. Section 5.3.4.4 of NZS 8409:2004 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift models can be used to give more detailed information for specific situations. | Rule 1.5.4(14) standard d) states that the agrichemical shall be used in a manner complying with NZS8409:2004 Management of Agrichemicals. Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q.) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | The Definitions section of the Tairāwhiti Resource Management Plan states the following:<br>Sensitive Area<br>Receiving environments in the Gisborne district that are more sensitive to the discharge of contaminants to air than others. These have been identified as being:<br>a) Residences and places of public and private assembly (including amenity areas) where the discharge may result in a reduction in amenity values or adversely affect human health;<br>b) Public roads and airports where the discharge may result in a reduction in visibility or otherwise jeopardise the safe and efficient use of this infrastructure;<br>c) Domestic and community water supplies where the discharge may result in adverse effects on human health; |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
|---|---|---|---|---|
| | Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | | | d) Wetlands, lakes and rivers and their margins where the discharge may result in a reduction of the life supporting capacity of water or cause damage to aquatic ecosystems or a loss of natural character;<br>e) Sensitive crops or farming systems where the discharge may result in damage to crops or animals or jeopardise the ability for people to provide for their economic well-being;<br>f) Significant indigenous vegetation and significant habitats of indigenous fauna as defined in C9 of the Tairāwhiti Plan, including areas containing threatened species where the discharge may result in damage to these indigenous species or habitats:<br>g) The coastal environment, in particular within 200m landward of mean high water springs where the discharge may result in a loss of natural character;<br>h) Sites of special significance to tangata whenua, as identified in the Part Operative Gisborne District Combined Regional Land and District Plan.<br>Also note these General standards:<br>K. Any discharge of agrichemicals shall not occur directly above a permanently flowing river, lake, wetland or other surface water body, including any drain or any opening to a drain or any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation or farm drainage canals) that is discharging to a surface water body, unless the chemical is registered for use over water bodies.<br>L. The discharge shall not result in the deposition of noxious or dangerous levels of agrichemicals or hazardous contaminants onto water bodies specifically managed for public water supply purposes, unless the discharge is a chemical registered for use over water bodies.<br>M. The discharge shall not result in the deposition of any agrichemical onto any roof or other structure used as a collection for water supply or onto any residential or school vegetable garden that could reasonably be expected to cause any significant adverse effect. |
| **Auckland** Unitary Council AucklandUnitaryPlan | E34.6.1.2 (14) states :<br>*"Agrichemicals must only be applied when the wind direction is away from the sensitive area as outlined in Standard E34.6.1.2(9)(a)-(i)."*<br>E34.6.1.2 (1)(a) states that the application of agrichemicals for non-domestic uses must comply with a number of sections of New Zealand Standard – Management of Agrichemicals (NZS 8409:2004), including Safe Use of Agrichemical Compounds | No specific reference to buffer zones in the Plan but E34.6.1.2 (1)(a) states that the application of agrichemicals for non-domestic uses must comply with a number of sections of New Zealand Standard – Management of Agrichemicals (NZS 8409:2004), including Safe Use of Agrichemical Compounds and Plant Protection Products in Section 5.3. Section 5.3.4.4 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast | E34.6.1.2 (1)(a) states that the application of agrichemicals for non-domestic uses must comply with a number of sections of New Zealand Standard – Management of Agrichemicals (NZS 8409:2004), including Safe Use of Agrichemical Compounds and Plant Protection Products in Section 5.3. Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection | E34.6.1.2(9) states:<br>*"In addition to the requirements for all applications, where the discharge will occur adjacent to sensitive areas identified in the spray plan then Standards E34.6.1.2(10) to E34.6.1.2(16) must also be undertaken. Sensitive areas include all of the following:*<br>*(a) dwellings;*<br>*(b) education facilities;*<br>*(c) marae and papakāinga;*<br>*(d) hospitals and aged-care facilities*<br>*(e) amenity areas and public places;*<br>*(f) sources of potable water including roof water collection;* |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
|---|---|---|---|---|
| | and Plant Protection Products in Section 5.3. NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G). Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift models can be used to give more detailed information for specific situations. | Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | *(g) non-target crops, flora and fauna (such as bees) sensitive to agrichemicals and vertebrate toxic agents;*<br>*(h) certified organic farms and farms applying for certification; and*<br>*(i) freshwater systems, the coastal marine area and significant ecological areas as identified in the Significant Ecological Areas Overlay.*<br>Note: it appears that "amenity areas and public places" are those defined by NZS 8409:2004).<br>Note that the General standards in E34.6.1.1 are also relevant, particularly:<br>(4) The discharge is not directly into water, including the coastal marine area or a freshwater body, unless the chemical is approved by the Environmental Protection Authority for use over or into water bodies.<br>(5) The discharge is not directly onto or into water used for a potable water supply including roofs used for water collection. |
| **Waikato** Regional Plan<br>waikatoregion<br>Chapter 6.2 | Rule 6.2.4.9 requires that the application of agrichemicals shall be undertaken in accordance with New Zealand Standard 8409:2004, Management of Agrichemicals. NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G). | Rule 6.2.4.9 requires that the application of agrichemicals shall be undertaken in accordance with New Zealand Standard 8409:2004, Management of Agrichemicals. Section 5.3.4.4 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that | Rule 6.2.4.9 requires that the application of agrichemicals shall be undertaken in accordance with New Zealand Standard 8409:2004, Management of Agrichemicals. Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | Policy 2 states:<br>Recognise that some areas, places or features are sensitive to the adverse effects of off target exposure to agrichemicals, including, but not limited to:<br>a. dwelling-houses<br>b. ***places of public assembly**** and public amenity areas*<br>c. domestic and community water supplies<br>d. water bodies[69] and the banks of a water body<br>e. habitats of significant indigenous flora and fauna (as defined in district plans and Department of Conservation Management Strategies) |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
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| | Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | spray droplet drift models can be used to give more detailed information for specific situations. | | f. plants and/or crops which are sensitive to agrichemical(s) being discharged<br>g. certified organically farmed properties[70].<br>**69**. As defined in the RMA.<br>**70**. Such as Biogro.<br>***Place of public assembly**: Land or buildings including schools, that are used in whole or part for the assembly or gathering of people for such purposes as meeting, conferences, worship, entertainment, recreation, celebration, education or similar purposes and includes buildings associated with public or private hotels, traveller' accommodation and marae.<br>***Public amenity areas**: Those areas to which the public have right of access under any statute, regulation, law or by-law, which may include:<br>1. Crown or council properties, reserves, gardens, parks and airfields;<br>2. Grasslands, sports grounds and recreational turf;<br>3. Forest and bush areas;<br>4. Road and rail verges and embankments, pedestrian walkways, malls and precincts;<br>5. Beaches and beach reserves and adjacent foreshore areas. |
| **Horizons** Regional Council chapter-15 Page 128 C:\Users\Kathy.mason\Documents\Hydrogen Cyanamide\Regional Council Rules\horizons.regional-plan | Rule 6.2.4.9 requires that the application of agrichemicals shall be undertaken in accordance with New Zealand Standard 8409:2004, Management of Agrichemicals. NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G).<br>Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to | Rule 6.2.4.9 requires that the application of agrichemicals shall be undertaken in accordance with New Zealand Standard 8409:2004, Management of Agrichemicals. Section 5.3.4.4 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift models can be used to give more detailed information for specific situations. | Rule 6.2.4.9 requires that the application of agrichemicals shall be undertaken in accordance with New Zealand Standard 8409:2004, Management of Agrichemicals. Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | Refers to Policy 15-1.<br>Sensitive areas include, but are not limited to:<br>i. residential buildings,<br>ii. public places and amenity areas where people congregate,<br>iii. education facilities,<br>iv. public roads*,<br>v. surface water bodies^,<br>vi. wāhi tapu*, marae and other sites* of significance to hapū* and iwi*,<br>vii. domestic, commercial and public water supply* catchments and intakes,<br>viii. rare habitats*, threatened habitats* and at-risk habitats*, and<br>ix. sensitive crops or farming systems (including certified organically farmed properties* and greenhouses).<br>b. the matters in Policy 14-9.<br>**Public road** means any formed legal road^ that has open public access. It includes both the road area normally used by motor vehicles and cyclists along |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
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| | move any spray drift away from sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | | | with adjacent footpaths and any berms and verges not in private ownership<br><br>**Wāhi tapu** means a site* sacred to Māori in the traditional, spiritual, religious, ritual, or mythological sense and includes rua kōiwi*<br><br>**Hapū** means a social, political unit comprised of whānau* each recognising descent from a common ancestor<br><br>**Iwi** means a political grouping comprised of several hapū*, each recognising descent from a common ancestor(s). The hapū* not only recognise genealogical ties but geographical, political and social ties. Today iwi* are represented by many organisations, including trust boards, rūnanga and iwi authorities^, but only in specific areas where the mandate to do so has been given by the constituent hapū*.<br><br>**Public water supply** means a reticulated publicly or privately owned drinking water^ supply connecting at least two buildings and serving at least 1,500 person days per year (eg., 25 people for at least 60 days per year). Drinking water^ is water^ intended to be used for human consumption, food preparation, utensil washing, oral hygiene or personal hygiene.<br><br>**Rare habitat** means an area determined to be a rare habitat in accordance with Schedule F and, for the avoidance of doubt, excludes any area in Table F.2(b)<br><br>**Threatened habitat** means an area determined to be a threatened habitat in accordance with Schedule F and, for the avoidance of doubt, excludes any area in Table F.2(b).<br><br>**At-risk habitat** means an area determined to be an at-risk habitat in accordance with Schedule F and, for the avoidance of doubt, excludes any area in Table F.2(b).<br><br>Note that there doesn't appear to be a definition for "certified organically farmed properties*"<br><br>Definitions provided in the RMA are not repeated in the glossary. A term or expression that is defined in the RMA is marked with the symbol ^ when used in the objectives, policies or rules of the Plan, this glossary and the schedules to the Plan, other than Schedules F, G and I. |
| **Hawke's Bay** Regional Resource Management Plan | Rule 10 includes an advisory note that refers to Table Y1 from NZS 8409:2004 (the reference to | Rule 10 includes an advisory note that refers to Table Y1 from NZS 8409:2004 (the reference to Table Y1 appears to be an error – it should be Table G1-Drift hazard guidance chart). The advisory note | Rule 10 includes an advisory note that refers to Table Y1 from NZS 8409:2004 (the reference to Table Y1 appears to be an error – it should be Table G1-Drift hazard guidance | "Sensitive Area" is not defined. The assumption is that the user is expected to use the sensitive areas defined in NZS 8409:2004. |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
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| New-Chapter-6<br>Page 128 | Table Y1 appears to be an error – it should be Table G1-Drift hazard guidance chart). The advisory note includes a table that summarises some of the key information contained within Table G1 including guidance on windspeed and direction.<br>Rule 10, Standard b requires that the discharge shall be undertaken in accordance with all mandatory requirements set out in Sections 2, 5 and 8 of the New Zealand Standard for the Management of Agrichemicals (NZS 8409:2004).<br>NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G).<br>Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information; | includes a table that summarises some of the key information contained within Table G1 including guidance on buffer zones.<br>Rule 10, Standard b requires that the discharge shall be undertaken in accordance with all mandatory requirements set out in Sections 2, 5 and 8 of the New Zealand Standard for the Management of Agrichemicals (NZS 8409:2004). Section 5.3.4.4 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift models can be used to give more detailed information for specific situations. | chart). The advisory note includes a table that summarises some of the key information contained within Table G1 including guidance on droplet size.<br>Rule 10, Standard b requires that the discharge shall be undertaken in accordance with all mandatory requirements set out in Sections 2, 5 and 8 of the New Zealand Standard for the Management of Agrichemicals (NZS 8409:2004). Management of Agrichemicals. Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | One of the conditions is that "The discharge shall not result in any agrichemical being deposited on any roof or other structure used as a catchment for water supply other than in compliance with (f)."<br>*f. Where the discharge is onto land or onto water for the purpose of eradicating, modifying or controlling unwanted aquatic plants:* |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
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| | … | | | |
| **Tasman**<br>tasman | Rule 36.6.2.1:<br>(g) The discharge must be undertaken in such a way that pesticide drift does not move over any adjoining property that is any:<br>(i) school, or early childhood education facility, or their grounds; or<br>(ii) place of public assembly, including any public reserve, sports field or children's playground; or<br>(iii) property registered or certified by the New Zealand Biological Producers & Consumers Society Incorporated or the Biodynamic Farming and Garden Association as an organically farmed property, provided that this registration or certification was established before any discharge activity is commenced; or<br>(iv) dwelling or any area within 30 metres of a dwelling, provided that this does not apply where there is a mutual agreement to this effect between the person who discharges or causes the discharge of any pesticide, and any occupier of the dwelling.<br>…<br>(h) When the wind conditions are such that pesticide may drift onto any adjoining property that is not listed in condition (g):<br>(i) the person who discharges or who causes the discharge to be undertaken must: (a) hold the Growsafe Standard Certificate; and (b) ensure that there is no discharge when wind speeds are more than 15 kilometres per hour; and (c) during any period of discharge, place a sign or signs on any road adjacent to the site of the discharge to indicate to road users that pesticide may be discharged adjacent to the road; and<br>(ii) the person who discharges or who causes the discharge to be | Note the reference to (g) (iv) in the column to the left. | There appears to be no reference to NZS 8409:2004 or spray quality in this plan. | Note the reference to (g) in the 2nd column of this table. Also note:<br>Rule 36.6.2.1 states:<br>The discharge of pesticides to land, water or air is a permitted activity that may be undertaken without resource consent, if it complies with the following conditions:<br>**Location of the Discharge**<br>(b) The pesticide is not discharged onto any land open for lawful public access, including any road, public park or reserve, except:<br>(i) where an owner or occupier of any property adjoining the land discharges or causes the discharge to be undertaken by hand-held method onto any of the land at any point adjacent to the boundary with the property; or<br>(ii) for the hand placement or spraying of pesticides using a hand-held, non-motorised knapsack sprayer or weed wiper.<br>(c) The pesticide is not:<br>(i) discharged onto the bed of any river or lake, or into the coastal marine area; or<br>(ii) discharged onto or into a water body or coastal water; or<br>(iii) applied in such a way as to form run-off or drift into a water body or coastal water; unless the product label specifically states that the application can be made directly into or onto fresh water or coastal water.<br>(d) The pesticide is not discharged onto an urban or community water supply catchment area, or any roof, or other water collection structure. |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
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| | undertaken must ensure that there is no discharge of pesticide from any point less than 30 metres from that property boundary; or<br>(iii) the owner or occupier of the property where the discharge is to take place must ensure that there is a spray belt along the boundary of every adjoining property onto which pesticide drift may move;<br>**except** where other pesticide drift management arrangements have been mutually agreed between the owner or occupier of the property where the discharge is to take place, or the person who discharges or who causes the discharge, and the owner or occupier of any adjoining property. | | | |
| **Nelson**<br>nelson088.pdf | AQr: 56 The discharge of agrichemicals to air or land is permitted if after 1 December 2005:<br>…<br>c) other than for small-scale application, it complies with the mandatory requirements of NZS8409:2004 Management of Agrichemicals.<br>NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G).<br>Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from sensitive areas thereby minimizing any drift hazard; | AQr: 56 The discharge of agrichemicals to air or land is permitted if after 1 December 2005:<br>…<br>c) other than for small-scale application, it complies with the mandatory requirements of NZS8409:2004 Management of Agrichemicals.<br>Section 5.3.4.4 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift models can be used to give more detailed information for specific situations. | AQr: 56 The discharge of agrichemicals to air or land is permitted if after 1 December 2005:<br>…<br>c) other than for small-scale application, it complies with the mandatory requirements of NZS8409:2004 Management of Agrichemicals.<br>Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively).<br>Appendix AQ7 of the Regional Plan states:<br>**Drift Control**<br>h) The applicator must take all reasonable care to avoid and mitigate any spray drift hazard as specified in Section 5.3.4 of NZS 8409:2004 Management of Agrichemicals. Appendix G 'Spray Drift Hazard and Weather Conditions' of the Standard contains detailed information regarding drift control.<br>**Advisory Note**:<br>The requirements set out in this Appendix are in addition to the requirements set out in NZS 8409:2004 'Management of Agrichemicals'. Compliance with the mandatory parts of the Standard is required by Rule AQr.56. The mandatory parts of the standard are those that include the word 'shall'. The Standard also contains | Appendix AQ7 discharge to agrichemicals to land or air: standards, terms and conditions states:<br>*e) The discharge must be undertaken in such a way that agrichemical drift does not move over any adjoining property that is any: i) School, or early childhood education facility, or their grounds, or ii) Place of public assembly including any public reserve, sports field or children's playground, or iii) Property registered or certified by the Biological Producers and Consumers Council or the Biodynamic Farming and Garden Association as an organically farmed property, provided that this registration or certification was established before any discharge activity is commenced, or iv) Residential unit or any area within 30 metres of a residential unit, provided that this does not apply where there is a mutual agreement to this effect between the person who discharges or causes the discharge of any agrichemicals, and any occupier of the residential unit, or v) Property growing a sensitive crop, and …* |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
|---|---|---|---|---|
| | (b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | | informative guidance material which will greatly reduce the risk of any environmental or health and safety incidents when using agrichemicals. | |
| **Taranaki** Regional Air Plan<br>AirPlan | Appendix 7 has a good practice spray guide that says - *Should not spray if the wind speed over the area to be sprayed is less than one metre per second (3 kilometres per hour) and droplet size is less than 50 micron, or greater than six metres per second (15 kilometres per hour). "The discharge shall be undertaken in accordance with all mandatory requirements set out in Sections 2, 5 and 6 and relevant appendices of the New Zealand Standard for Management of Agrichemicals (NZS 8409:2004)."*<br>NZS 8409:2004 Section 5.3.4.1 states that no agrichemical application **should** be made unless wind speed and wind direction at the application site are known and are not expected to create adverse off-target effects to people or property (refer to Appendix G).<br>Section 5.3.4.2 states that applicators **shall** be aware of the ways in which off-target movement of spray can occur, and take all reasonable care to avoid or mitigate the hazard by:<br>(a) Spraying in a cross-wind, where the direction and strength of the airflow is predictable and is expected to move any spray drift away from | Appendix 7 has a good practice spray guide with a table with minimum buffer zones but notes the table is a guide only.<br>Rule 56 c) states *"The discharge shall be undertaken in accordance with all mandatory requirements set out in Sections 2, 5 and 6 and relevant appendices of the New Zealand Standard for Management of Agrichemicals (NZS 8409:2004)."*<br>Section 5.3.4.4 states that where appropriate, buffer zones **shall** be used to minimise spray drift hazard to sensitive areas. However, applicators **shall** not rely exclusively on buffer zones or shelterbelts to eliminate spray drift hazard. Guidance on the use of buffer zones and shelterbelts is set out in Appendix G. Section G6 discusses buffer zones and shelter belts and provides buffer zone guidelines and suggested minimum distances between the downwind edge of the target area and the sensitive area (with and without shelter) for guidance. For air blast sprayers the buffer zone distance with shelter is 10m and for without shelter is 30m, however Section G6.1 stresses that the guidelines should be regarded as just that – guidelines, and that spray droplet drift models can be used to give more detailed information for specific situations. | Rule 56 c) states *"The discharge shall be undertaken in accordance with all mandatory requirements set out in Sections 2, 5 and 6 and relevant appendices of the New Zealand Standard for Management of Agrichemicals (NZS 8409:2004)."*<br>Section 5.3.3 of NZS 8409:2004 requires spray application equipment to be configured to produce optimum droplet sizes while minimising the amount of small, drift prone droplets (with reference to Appendix Q) Table G1 in Appendix G to NZS8409:2004 is a Draft Hazard Guidance Chart. This states that a particle size of < 50 microns diameter is high hazard and > 250 microns diameter is low hazard. It refers to Appendix Q1. Q1 is titled "Application Equipment for Plant Protection Products". It discusses application equipment, spray categories (very fine to coarse) and includes the BCPC nozzle code and reference nozzles (Tables Q1 and Q2 respectively). | **Sensitive areas** are areas that have within them uses or values or activities that are more susceptible to adverse effects than other users or values or activities and include occupied dwellinghouses, public amenity areas, places of public assembly, water bodies used for public water supply, any water body, wetlands, sensitive crops or farming systems, public roads and any place, area or feature of special significance to tangata whenua.<br>For the Purpose of this Plan '**Sensitive activities**' means the activities that occur within sensitive areas as listed above.<br>Rule 56:<br>h) Landowner or occupier must give verbal or written notice to all occupied dwellinghouses, owners or occupiers of properties, sensitive crops and farming systems and places of public assembly located within 30 metres of the area to be sprayed (if spraying is by ground application) or within 100 metres of the area to be sprayed (if spraying is by aerial application)…<br>Standard e} states that *"The discharge shall not cause or be likely to cause an adverse effect from deposition into a river, lake, wetland or other surface water body, including any drain which enters into a surface water body."* |

| | Windspeed | Buffer Zones | Spray Quality | Sensitive Area Definition[14] |
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| | sensitive areas thereby minimizing any drift hazard;<br>(b) Not spraying hazardous chemicals (likely to cause damage) in calm (zero wind) conditions, when the drift movement direction cannot be determined, or when inversion conditions exist or may arise following application;<br>(c) Not applying volatile agrichemicals in calm conditions where the ambient temperature and humidity are such that evaporation and subsequent spray drift is likely (refer to table G1, Appendix G and Appendix d) for volatility information;<br>… | | | |

**Table 1: Summary of Requirements for Spraying in Relation to Spray-Sensitive Areas – Northland Regional Plan**

| **Northland Regional Plan (the following applies when spraying is undertaken within 100m of a spray sensitive area)** | | |
|---|---|---|
| **Wind speed*1** | **Wind direction** | **Buffer distance requirement** |
| Ground based – low risk | | |
| 1-3 m/s | Wind away from spray-sensitive areas | Nil |
| Ground based – assessed risk | | |
| 0-1 m/s | Any wind direction (not inversion conditions) | There is a buffer distance on all boundaries of the target application area of at least:<br>Airblast spraying:<br>• 10m with effective shelter, or,<br>• 30m without effective shelter |
| 1-5 m/s | Wind toward spray sensitive area | There is a buffer distance on the downwind boundary of the target application area of at least:<br>Airblast spraying<br>• 10 m with effective shelter, or<br>• 30 m without effective shelter. |
| 3-6 m/s | Wind away from spray-sensitive area | Nil |

*1 the EPA proposed windspeed is no more than 20 km/hr as measured at the application site, equivalent to 6 m/s.

Effective shelter must:

1) be taller (at least >1 metre) than the height of the spray plume when the plume interacts with the shelter; and

2) have foliage that is continuous from top to bottom; and

3) achieve in the order of 50% optical and aerodynamic porosity; and

4) have a high surface area (note that fine needles are more effective at collecting fine spray than broad leaves); and

5) not be deciduous; and

6) have a minimum height of 3.5 metres; and

7) have a width to height ration of 1:3.5.

***Note: Artificial shelter may also be useful in reducing spray drift (for example overhead hail netting for kiwifruit and apples).***