SUBMISSION ON

Reassessment of Bifenthrin and Substances that Contain Bifenthrin

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To: Environmental Protection Authority
Name of Submitter: Horticulture New Zealand

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Horticulture™ New Zealand
Ahumāra Kai Aotearoa

OVERVIEW

Submission structure

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Our submission

Horticulture New Zealand (HortNZ) thanks the Environmental Protection Authority for the opportunity to submit on the 'Reassessment of Bifenthrin and Substances that Contain Bifenthrin.' We welcome any opportunity to continue to work with the EPA and the Decision-making Committee.

HortNZ and the growers wish to be heard in support of our submission.

The details of HortNZ's submission and decisions we are seeking are set out in our submission below.

THIS SUBMISSION IS FULLY SUPPORTED BY AND REFLECTS THE VIEWS OF THE FOLLOWING INDUSTRY PRODUCT GROUPS AND DISTRICT GROWER ASSOCIATIONS:

New Zealand Vegetable Council

Northern Wairoa Vegetable Growers Association

NZ Food & Grocery Council

Summerfruit New Zealand

Zespri International Limited

PART 1

HortNZ's Role

Background to HortNZ

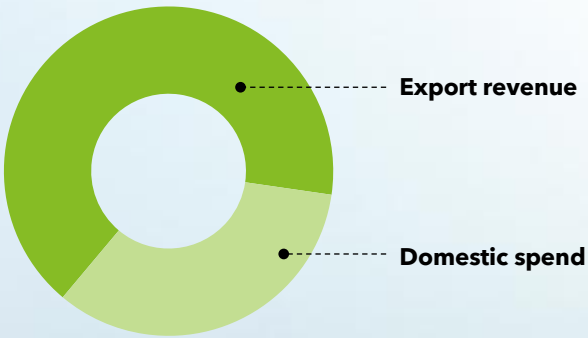
HortNZ represents the interests of approximately 4,300 commercial fruit and vegetable growers in New Zealand who grow around 100 different fruits and vegetables. The horticultural sector provides over 40,000 jobs.

There are approximately 80,000 hectares of land in New Zealand producing fruit and vegetables for domestic consumers and supplying our global trading partners with high quality food.

It is not just the direct economic benefits associated with horticultural production that are important. Horticulture production provides a platform for long term prosperity for communities, supports the growth of knowledge-intensive agri-tech and suppliers along the supply chain, and plays a key role in helping to achieve New Zealand's climate change objectives.

The horticulture sector plays an important role in food security for New Zealanders. Over 80% of vegetables grown are for the domestic market and many varieties of fruits are grown to serve the domestic market.

HortNZ's purpose is to create an enduring environment where growers prosper. This is done through enabling, promoting and advocating for growers in New Zealand.



Industry value $7.54bn
Farmgate value $4.89bn
Export revenue $4.99bn
Domestic spend $2.55bn

Source: HortNZ Annual Report 2025

PART 2

Executive Summary

HortNZ supports the EPA's objective of ensuring crop protection products continue to meet modern environmental and human health standards. Reassessment is an important part of achieving this objective and maintaining confidence in New Zealand's regulatory system. However, reassessment decisions and proposals should reflect the best available science, realistic exposure scenarios, and practical mitigation measures so that environmental protection is achieved without unnecessarily removing important crop protection tools.

Bifenthrin remains an important pest management tool across several horticultural sectors, including kiwifruit, kūmara, and glasshouse tomatoes. While its use has declined over time, it continues to provide efficacious control of insects (e.g., passion vine hopper in kiwifruit) and important benefits where equivalent alternatives are unavailable, unsuitable, or uncertain.

As demonstrated throughout this submission, both the value of bifenthrin and the opportunities for effective risk mitigation vary considerably between crops and production systems, supporting a proportionate, crop-specific approach to reassessment.

HortNZ's submission is based on three key principles:

- Bifenthrin continues to provide important benefits where suitable alternatives are not yet available or equivalent.
- Environmental risks are already substantially reduced through existing production practices and practical mitigation measures.
- Higher-tier scientific evidence indicates that environmental risks can be managed proportionately without unnecessarily removing important horticultural uses.

HortNZ seeks that the EPA:

- Apply a proportionate, risk-based approach by considering practical mitigation measures (e.g. buffer zones and shelterbelt drift interception in kiwifruit) and crop-specific exposure scenarios (e.g. covered tomato production) before restricting horticultural uses of bifenthrin.
- Take a strategic approach to synthetic pyrethroid reassessments by considering cumulative impacts, alternative availability (that are the same mode of action of synthetic pyrethroid), and the importance of maintaining effective pest management options while suitable replacements are developed and validated.
- Establish interim approaches while environmental risk assessment methodologies are being modernised, ensuring reassessment decisions remain science-based and reflective of New Zealand production systems.

PART 3

Submission

1. Importance of bifenthrin to New Zealand horticulture

Bifenthrin remains an important pest management tool across a range of New Zealand horticultural production systems. While its use has reduced over time as newer insecticides have become available for some sectors, bifenthrin continues to provide important pest control functions where efficacious alternatives are unavailable, unsuitable, or still under development.

The importance of bifenthrin, the availability of alternatives, and opportunities for risk mitigation vary considerably between crops. The following examples from the kiwifruit, kūmara, and tomato sectors demonstrate that the benefits and environmental risk profile associated with bifenthrin are highly dependent on the crop, target pest, production system, application method, and existing mitigation practices.

HortNZ considers that decisions on crop protection product reassessments should therefore take account of crop-specific use patterns and practical risk mitigation measures, as well as the lack of available efficacious alternatives for critical uses, rather than relying solely on generic assumptions.

A proportionate, risk-based approach is needed to ensure environmental protection objectives are achieved while maintaining access to essential pest management tools where risks can be effectively managed.

1.1. Importance of bifenthrin to the kiwifruit industry

New Zealand's kiwifruit industry produced approximately 197 million trays (700 million kg) in the 2024/25 season, valued at $3.6 billion, with more than 90% exported, making it a significant contributor to New Zealand's export economy. The industry is continuing to expand, with record export volumes in 2025/26 and around 220 million trays expected in the 2026/27 season.[1] The Ministry for Primary Industries (MPI) forecasts continued production and revenue growth over the coming years, highlighting the increasing importance of maintaining effective crop protection tools such as bifenthrin.

Bifenthrin remains an important pest management tool for kiwifruit growers. It provides efficacious control of several key pests, supports resistance management and results in acceptable residue levels for market access requirements.

Why bifenthrin is critical

- Bifenthrin is the only available and registered product for controlling cicadas during the early dormancy period. Cicadas damage vines mainly when females cut into canes to lay eggs, which causes the affected wood to die back or break (Figure 1). Heavy infestations can weaken young canes and reduce fruit yield. Cicadas can cause significant damage in young orchards and new plantings, particularly in major growing regions such as Kerikeri and the Western Bay of Plenty.

[1] Situation and Outlook for Primary Industries (SOPI) June 2026

- Bifenthrin is also an important tool for managing Passion Vine Hopper (PVH) eggs during late dormancy. The PVH damages kiwifruit by sucking plant sap and excreting a sticky, sugary liquid called honeydew. This honeydew causes ugly black sooty mould to grow on the fruit and leaves, which stains the crop and lowers its market value. Targeting the egg stage is critical because once nymphs hatch, they become mobile and are considerably more difficult to control. PVH has the potential to cause significant economic impacts, with estimated annual losses to the New Zealand kiwifruit industry exceeding $77 million.[2]
- Bifenthrin provides an important option for the pre-flowering management of scale insects, an important market access pest for kiwifruit. While scale insects are not exotic or unusual pests in New Zealand, their presence can create significant market access challenges because they are considered quarantine pests in some of Zespri's key export markets. Early control is critical because scale populations are relatively easy to manage when numbers are low but become considerably more difficult to control once established at high levels within an orchard. Bifenthrin therefore forms part of an integrated pest management programme, alongside cultural controls, mineral oils and other insecticides, providing growers with an additional mode of action to manage scale and reduce the risk of unacceptable fruit infestation and associated market access impacts.

Figure 1: Female Cicadas slice open kiwifruit canes, causing localised tissue damage and make canes prone to snapping (left). A common mould that grows on kiwifruit due to sugary secretions from Cicadas and Passion Fruit Vine Hopper[3] (right).

[2] 2023-10-27-Year-2-findings-summary-PVH-project_FINAL.pdf
[3] Sooty Mould on Kiwifruite

Why alternatives are not sufficient

Although alternative products have been identified by EPA for some uses, they do not currently provide efficacious replacements for bifenthrin.

For cicadas:

- No alternative products have been identified (Appendix 3 APP204919 – EPA Staff assessment report).[4]

For Passion Vine Hopper:

- Pyrethrins are primarily used after eggs hatch and are considerably less effective for controlling dormant eggs.
- Pirimiphos-methyl + permethrin is also undergoing a reassessment by the EPA[5] and therefore cannot be considered a long-term replacement with any certainty.

For scale insects:

- Spirotetramat (Movento) provides a later-season management option but does not replace the early-season role of bifenthrin, particularly in orchards experiencing high scale pressure. Both actives are needed for resistance management.
- Residue requirements for some Asian export markets may limit the use of spirotetramat in certain production systems.
- Pirimiphos-methyl + permethrin, as described above is subject to reassessment.[4]

Existing risk mitigation in the orchards

- Existing kiwifruit production practices already reduce potential environmental exposure associated with bifenthrin use.
- Commercial kiwifruit orchards commonly include shelterbelts, which intercept spray drift by up to 80%[6] and reduce off-target movement beyond orchard boundaries.
- The adoption of new technologies such as air induction nozzles reduces spray drift substantially (Figure 2).
- Bifenthrin is generally applied during dormancy or early budbreak in winter, when pollinator activity is low, reducing potential exposure to bees and other beneficial insects.
- Applications are undertaken as part of integrated pest management programmes and in accordance with label requirements and industry best practice.

These production practices should be recognised when assessing environmental exposure and determining proportionate risk management measures.

[4] APP204919-Bifenthrin-Staff-assessment-report
[5] Reassessments work plan | EPA
[6] NZKGI Principles of shelter guidance

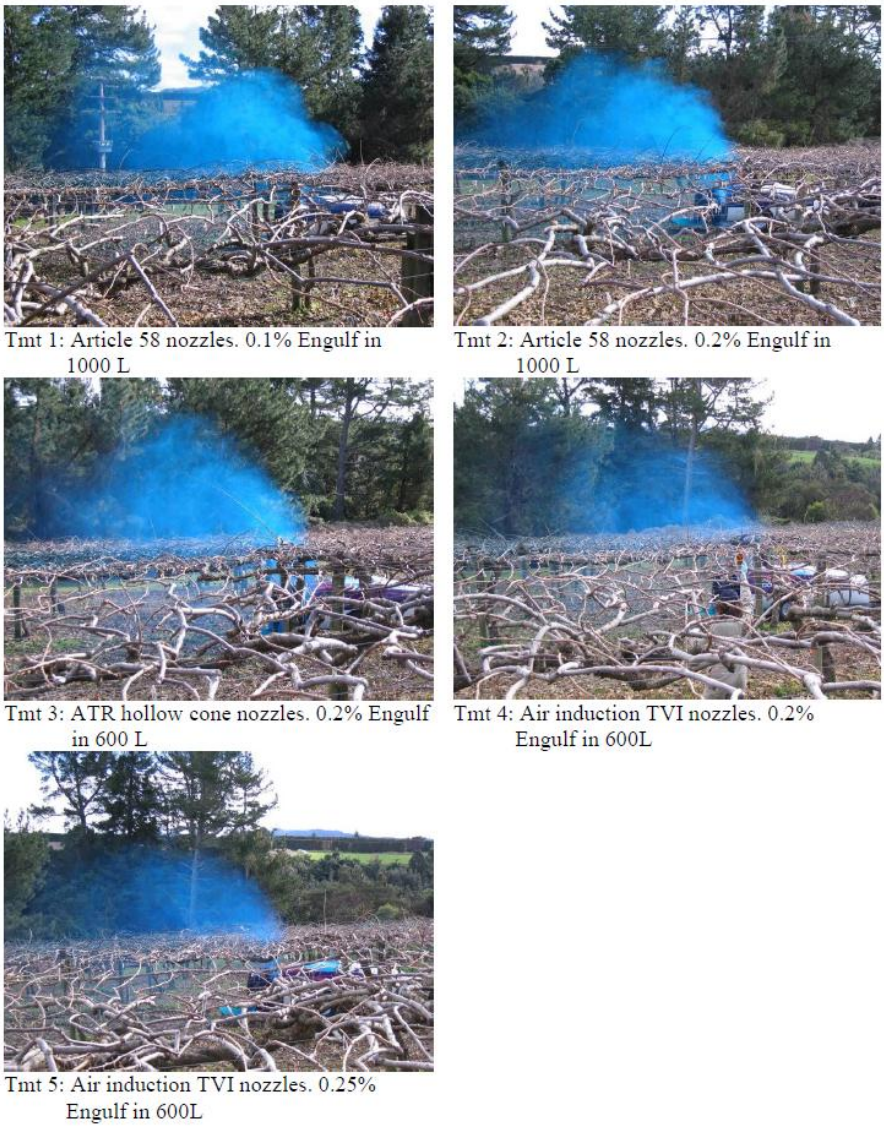


Figure 2. Air induction TVI nozzles (Tmt 4 and 5) commonly adopted by kiwifruit growers significantly reduce spray drift compared to other nozzles.[7]

1.2. Importance of bifenthrin to kūmara production

Kūmara is a unique New Zealand crop of significant cultural, economic and food security importance. With a long history of cultivation in Aotearoa New Zealand, kūmara is recognised as a taonga species and remains a priority crop for the Northern Wairoa Vegetable Growers Association. Approximately 1,000 hectares are grown annually, with production concentrated in Northland, particularly around Dargaville. The industry supports around 38 growers and up to 1,000 seasonal workers during planting and harvest, as well as local packhouses, engineering firms and agricultural service businesses,

[7] Control of cicada and passion vine hopper egg nests on dormant canes with novel spray applications: Part A (Available upon request).

making kūmara an important contributor to regional employment and the wider Northland economy.

As a relatively minor crop, kūmara receives limited investment in the development and registration of new crop protection products and associated MRLs. This limits growers' ability to transition to alternative tools when existing products are restricted or removed.

Bifenthrin remains a critical pest management tool for kūmara production, where effective alternatives are extremely limited.

Why bifenthrin is critical

Black field cricket (*Teleogryllus commodus*) (Figure 3) is one of the most significant insect pests affecting kūmara production. While complete crop failure is uncommon, severe feeding damage can reduce premium fresh-market kūmara to lower-value processed products. Industry estimates indicate losses of $10,000 – $30,000 per hectare depending on pest pressure and market conditions.[8]

Climate change is expected to increase both the distribution and abundance of black field cricket in New Zealand, increasing the importance of effective pest management tools. Female crickets can lay up to 2,000 eggs[9], meaning relatively small increases in survival can contribute to substantially higher pest populations in subsequent seasons.

Figure 3. A Black field cricket on a kūmara tuber, showing the damage the pest causes to this crop.[10]

[8] Black field cricket acoustic trap lures pest – A Lighter Touch
[9] Black Beetle PMANZ Pest Fact Sheet
[10] Control options sought for pest targeting kūmara crops – A Lighter Touch

Bifenthrin is also critical for other insect control such as the Tropical Army Worm and general insect control (e.g. white fringed weevil, grass grub, wireworm).

Why alternatives are not sufficient

Currently, growers rely on bifenthrin and malathion bait to manage black field cricket.

While malathion-treated grain bait provides useful suppression, growers report that it does not provide sufficient control as a standalone replacement for bifenthrin. Continued reliance on a single chemistry would also increase resistance risks and reduce the resilience of pest management programmes.

There are currently no registered alternative insecticides for black field cricket. The alternative identified by EPA for beetle grubs (lambda-cyhalothrin) is itself subject to a EPA reassessment[4] and therefore cannot yet be considered a secure long-term replacement.

Longer-term solutions, including acoustic trapping, biological control, and other novel technologies, remain under early development and are not yet commercially available.

Existing risk mitigation

Bifenthrin application in kūmara production is generally targeted rather than broad-acre:

- Early-season applications are often made using water carts.
- Later applications are undertaken using boom spraying directed into the crop row where possible. Air induction nozzles are used to create large, aerated droplets, and dramatically reduces drift. Typically spray height is 760 mm with nozzle spacing at 380mm. Kumara crop height is approximately 15 cm.

These targeted application methods reduce spray drift and off-target exposure compared with less targeted application approaches. The nature of these application systems should be considered when assessing environmental exposure.

1.3. Importance of bifenthrin to tomato production

Tomatoes are a high-value horticultural crop grown for domestic consumption and export markets. Approximately there are 140 commercial fresh tomato growers. The sector has a significant economic contribution, with a farmgate value of almost $155 million in the year ending March 2024.[11] The commercial tomato sector is predominantly grown using covered cropping systems (i.e. glasshouses).

Bifenthrin remains an important pest management tool for New Zealand tomato production, supporting the management of key insect pests and maintaining effective integrated pest management programmes.

Why bifenthrin is critical

Bifenthrin is used to manage important insect pests, including tomato fruitworm, and contributes to the integrated management of tomato potato psyllid.

Maintaining access to multiple insecticide modes of action is essential for sustainable pest management. The availability of different modes of action allows growers to rotate products, delay resistance development, and maintain effective control options over time.

[11] Tomatoes NZ representing commercial fresh tomato growers in New Zealand

The importance of bifenthrin is therefore not limited to whether another product is registered for the same pest. The key consideration is whether alternative products provide equivalent efficacy, sustainable resistance management options, and sufficient flexibility within commercial integrated pest management programmes.

Why alternatives are not sufficient

Although several products are registered for tomato fruitworm and tomato potato psyllid, these products do not represent straightforward replacements for bifenthrin.

For tomato fruitworm:

- Several available products are based on spinosad and share the same mode of action (Appendix 1), limiting their value as resistance management alternatives.
- Some registered products are no longer commercially available such as Chariot (Spinosad) (Appendix 1).
- Several synthetic pyrethroids identified as potential alternatives, including tau-fluvalinate, lambda-cyhalothrin, cypermethrin and deltamethrin, are themselves undergoing reassessment or are included within the EPA's synthetic pyrethroid reassessment programme[4] and therefore cannot yet be considered a secure long-term replacement.
- Diazinon identified by the EPA is subject to reassessment decision which will be banned by 2028.[12]

For tomato potato psyllid:

- Alternative products are available; however, the number of effective modes of action remains limited.
- Loss of bifenthrin would reduce growers' ability to rotate insecticides and increase reliance on fewer remaining active ingredients, increasing resistance risks.

The issue is therefore not simply whether alternatives exist, but whether they provide effective, sustainable, and resilient pest management options within commercial production systems.

Existing risk mitigation

The environmental exposure profile for tomato production differs substantially from open-field horticultural systems. 99% of commercial fresh tomatoes in New Zealand are produced under covered cropping systems, with almost all fresh tomato growers operating in greenhouse environments.

In covered cropping systems:

- Crop protection product applications occur within enclosed structures.
- Spray drift beyond the production area is substantially reduced compared with outdoor boom spraying.
- Production conditions and pest management practices are managed within a controlled environment.

[12] APP204199 Decision of Reassessment on Diazinon

Consequently, generic outdoor spray drift assumptions / modelling (as outlined as field tomatoes in the EPA Ecotoxicology Science Memos)[13] does not accurately represent actual environmental exposure associated with covered tomato production. Exposure assessments should consider production-system-specific evidence and recognise the substantially different risk profile of greenhouse-based production compared with open-field application scenarios.

HortNZ considers that recognising production-system-specific exposure scenarios is essential to ensuring regulatory decisions are proportionate and accurately reflect real-world use patterns.

1.4. Importance for New Zealand's biosecurity preparedness

Maintaining access to bifenthrin is also essential for New Zealand's biosecurity preparedness. While this submission focuses primarily on its role in horticultural production, bifenthrin also has value beyond routine horticultural use.

MPI has identified bifenthrin as one of the insecticides that may be required as part of a response to a Brown Marmorated Stink Bug (BMSB) incursion. BMSB is recognised as one of New Zealand's highest-priority biosecurity threats because of its broad host range, potential to cause significant production losses across multiple sectors, and impacts on trade and urban environments. An NZIER assessment estimated that an established BMSB incursion could reduce New Zealand's GDP by up to $3.6 billion and horticultural exports by up to $4.2 billion[14].

Maintaining registered horticultural uses helps support biosecurity readiness by preserving regulatory approvals, product stewardship arrangements, grower and contractor familiarity, and established commercial supply pathways (i.e., product is available in NZ within its expiry date period and for use when needed in a biosecurity emergency). These factors enable products to be deployed more rapidly and effectively during a biosecurity response than would be the case if products had already exited the domestic market. Crop protection products are typically manufactured 12 months in advance based on anticipated market demand and then shipped to NZ. If domestic registrations and routine use cease, maintaining commercial supply to the New Zealand market may become more difficult, potentially increasing the time and complexity required to source products during a biosecurity response.

While emergency regulatory pathways may be available where necessary, maintaining existing registrations reduces implementation risks and supports New Zealand's overall biosecurity preparedness. Other alterative products for controlling BMSB e.g. deltamethrin and thiamethoxam are also on the EPA reassessment list.[4]

Collectively, these examples demonstrate the value of bifenthrin and that the opportunities for effective risk mitigation exist for specific crop uses. They encompass horticultural production, integrated pest management, market access, and New Zealand's broader biosecurity preparedness. Accordingly, reassessment decisions should consider both the importance of individual uses and the extent to which practical mitigation measures can reduce environmental exposure in real-world production systems.

[13] APP204919-Bifenthrin-Environmental-Risk-Assessment.pdf
[14] Appendix-2-Quantifying-the-economic-impacts-of-a-Brown-Marmorated-Stink-Bug-Incursion.pdf

2. A proportionate approach to managing environmental risk

2.1. Independent review

HortNZ supports the EPA's objective of reducing environmental risks associated with bifenthrin use. However, where risks can be effectively managed through practical, scientifically supported mitigation measures, these options should be considered before removing important horticultural uses.

The EPA's staff assessment report indicates that even very large buffer distances do not reduce spray drift-related aquatic risk to an acceptable level. By contrast, the independent technical review commissioned by HortNZ (Appendix 2) found that, for kiwifruit, a buffer in the order of 28 metres could achieve an acceptable level of protection. Table 1 summarises why the EPA's and the independent review's buffer estimates differ so substantially.

Table 1: Comparison of EPA and independent technical review approaches (kiwifruit, spray drift assessment)

Assessment element	EPA's 2026 approach	T+T independent review approach
Tiered framework	Tier II (AgDRIFT) produces a *higher* PEC than Tier I (GENEEC2) screening – the reverse of the intended refinement	Tiers should progressively reduce conservatism, consistent with international practice (e.g. EFSA FOCUS Steps 1–4). If buffer zone is set based on Tier I values it is possible to set it at achievable distances
Modelled water concentration	~33 µg/L (kiwifruit, Tier II) – approximately 100x the Tier I value	Capped at bifenthrin's water solubility limit of 1 µg/L, as physically cannot be exceeded in a real waterbody – in line with EFSA review and using the weight of evidence approach to support that toxicity is not being driven by sediment bound bifenthrin
Exposure duration vs endpoint	Day 1 peak pulse compared directly against a 21-day continuous exposure chronic NOEC	Weight-of-evidence approach incorporating biokinetic data (95% body burden eliminated in 2.3–5.2 days) and mesocosm recovery data (water column DT_{50} of 1–3 days; full ecological recovery within 14 days). Results in matching acute endpoints to peak water concentration, and chronic endpoints to 21 day average concentrations.
Resulting buffer distance (kiwifruit)	**Risk not reduced to an acceptable level at any practicable buffer distance**	**~28 metres achieves an acceptable level of protection (before crop interception/shelterbelt credit is applied)**

The independent review demonstrates that higher-tier scientific refinements can materially change the estimated level of environmental risk while continuing to provide an appropriate level of environmental protection.

HortNZ considers that incorporating these higher-tier scientific refinements, such as capping the modelled concentration at the water solubility limit, reduces the estimated kiwifruit buffer requirement to the 2–28 metre range in almost all scenarios modelled by the technical review, without yet accounting for crop interception, shelterbelts, or for tomatoes the fact that 99% of commercial production occurs in covered cropping systems.

2.2. Recognition of existing mitigation measures

During the reassessment of hydrogen cyanamide, the Decision-making Committee recognised the very likely drift-reducing effects of shelterbelts commonly used in New Zealand kiwifruit and other orchards. The Committee strongly supported prioritising funding to enable the EPA to develop the capacity to model the spray-drift reduction provided by different types of shelterbelts used by the horticultural industry. The Committee also established a 6-metre setback between the application area and the shelterbelt and recognised evidence indicating that shelterbelts can reduce spray drift by at least 80%.[15]

This precedent demonstrates that shelterbelts are a recognised source of spray-drift mitigation in New Zealand horticulture, while also highlighting a current limitation in the EPA's ability to quantitatively account for this mitigation in its environmental risk modelling.

As shelterbelts are a common feature of commercial kiwifruit orchards (Figure 4) when bifenthrin is applied i.e., in winter, HortNZ considers that they represent relevant evidence of real-world exposure reduction and should be considered as part of the overall risk assessment.

Figure 4. The majority of kiwifruit orchards have shelterbelts (Pictures taken on 7 August 2026)

[15] APP203974_20240523_Final-Decision hydrogen cyanamide reassessment

More broadly, this highlights the importance of incorporating established production practices and mitigation measures into environmental exposure assessments rather than relying solely on generic worst-case assumptions.

Risk management measures should be proportionate to both the magnitude of the identified risk and the demonstrated reduction in exposure achieved through existing production practices.

2.3. Crop-specific exposure assessment and mitigation

Environmental exposure associated with bifenthrin varies significantly between horticultural production systems. A single generic assessment approach may not accurately reflect the risk profile of individual crops.

Examples include:

- Kiwifruit: Commercial orchards commonly include shelterbelts that intercept spray drift. Bifenthrin applications generally occur during dormancy or early budbreak, when pollinator activity is limited.
- Kūmara: Applications are often targeted through water carts or directed spraying methods, resulting in different exposure characteristics compared with broad-acre spraying.
- Covered cropping: Most commercial tomato production occurs within greenhouse systems, where spray drift exposure is substantially lower than outdoor production scenarios.

These examples illustrate that a single generic exposure assessment cannot fully capture the diversity of New Zealand horticultural production systems. Recognising these differences would allow mitigation measures to be tailored to actual production systems and ensure regulatory decisions are proportionate to the assessed risk.

HortNZ seeks that the EPA:

- Adopt crop-specific mitigation measures to achieve an acceptable level of environmental protection before restricting or removing horticultural uses.
- Recognise established mitigation practices, including shelterbelts, targeted application methods, and covered cropping systems.
- Incorporate higher-tier scientific evidence and production-system-specific exposure scenarios alongside conservative modelling assumptions.
- Apply a transparent weight-of-evidence approach consistent with previous reassessments.
- Develop practical stewardship requirements where these can effectively manage environmental risks while maintaining access to important pest management tools.

OUTCOME SOUGHT:

HortNZ recommends the EPA implement strengthened risk mitigation measures to reduce environmental risks while maintaining growers' access to an important production and biosecurity tool where it remains necessary, including:

- For **kiwifruit**: adopting controls aligned with those already implemented for hydrogen cyanamide, including recognition of effective shelterbelts as a spray-drift mitigation measure and appropriate consideration of their contribution when determining buffer distances.
- For **kūmara**: limiting use to targeted in-row application methods and implementing application-specific label controls to minimise off-target movement.
- For **tomatoes**: retaining use in covered cropping systems, where spray drift is inherently minimised, and applying separate controls for outdoor production where appropriate (noting the outdoor production accounts for less than 1% of total production).

3. Take a strategic, risk-based approach to sequencing synthetic pyrethroid reassessments

Synthetic pyrethroids represent an important group of pest management tools for horticulture, supporting pest control across a wide range of crops and production systems. With multiple synthetic pyrethroid (SP) active ingredients currently undergoing or scheduled for reassessment, HortNZ considers that EPA should take a strategic, programme-level approach to sequencing these reassessments.

HortNZ recognises the importance of reducing environmental risks associated with the use of synthetic pyrethroid. However, reassessment decisions should also consider the wider pest management landscape. The combined impact of multiple synthetic pyrethroid reassessments may be significantly greater than the loss of any individual active ingredient, particularly where products perform similar functions or support the same crops. A strategic approach is therefore needed to avoid unintended gaps in pest management capability while ensuring environmental outcomes continue to be achieved.

Bifenthrin is currently under reassessment, while alpha-cypermethrin, cypermethrin, deltamethrin, lambda-cyhalothrin, and permethrin are all scheduled for reassessment under EPA's current work programme. Collectively, these active ingredients support pest management across a broad range of horticultural crops, including kiwifruit, kūmara, sweetcorn, brassicas, carrots and parsnips, onions, potatoes, squash, pumpkin, avocado, and persimmon. Their reassessment should therefore be considered strategically, recognising the cumulative implications for growers and the resilience of integrated pest management programmes.

The sequencing and prioritisation of synthetic pyrethroid reassessments should consider a range of factors beyond the hazards of an individual active ingredient, including:

- the importance of each active ingredient to horticultural production systems, particularly where it provides critical pest control functions or addresses pests for which few effective alternatives exist;

- The availability, efficacy, practicality, and regulatory certainty of alternative pest management tools, recognising that alternatives may not provide equivalent control or may themselves be subject to reassessment.
- The contribution of each active ingredient to integrated pest management and resistance management, including maintaining access to multiple modes of action.
- The cumulative impact of reassessing multiple active ingredients used across the same crops, pests, or production systems.
- Existing risk mitigation measures and whether identified risks can be effectively managed through practical controls, including crop-specific application methods, shelterbelts, covered cropping systems, buffer zones, label amendments, and other stewardship measures.
- The availability of robust scientific evidence and fit-for-purpose risk assessment methodologies, together with the need to maintain pest management capability for production resilience and biosecurity preparedness.

By taking a strategic approach to the sequencing of synthetic pyrethroid reassessments, EPA can better balance environmental protection with the practical needs of New Zealand horticulture. This will help reduce the risk of unintended regulatory outcomes, maintain resilient pest management systems, and support a more structured transition where changes to important crop protection tools are required.

4. Supporting modern environmental risk assessment with an interim proportionate approach

The environmental risk assessment modernisation programme provides an important opportunity to improve consistency, transparency, and scientific robustness in reassessment decisions. This should include developing the capability to appropriately account for the spray drift-reducing effects of shelterbelts commonly used in New Zealand kiwifruit and other orchard production. This is consistent with the Committee's previous recommendation that the EPA prioritise funding to develop modelling of the drift-reduction benefits provided by different types of horticultural shelterbelts.[13]

However, updated methodologies are not expected to be available for a further 2–3 years. During this transition period, interim measures are needed to ensure current reassessment decisions appropriately reflect the best available science and avoid unintended impacts on important crop protection tools.

The reassessment of synthetic pyrethroid insecticides highlights the importance of a fit-for-purpose environmental risk assessment framework. During the synthetic pyrethroid reassessment in 2024, concerns were raised regarding the environmental risk modelling approach, including the use of highly conservative assumptions and technical issues associated with the interpretation and application of ecotoxicity data.[16] The resulting risk estimates suggested that very large buffer zones may be required to manage aquatic risks, in some cases up to 254 metres, which raised questions regarding whether the assessment adequately reflected realistic exposure conditions. An independent technical review commissioned by industry identified concerns with aspects of the modelling

[16] HortNZ Submission on Ministry for Regulation Review on Agricultural Product Approvals case study 2. Page 27

methodology, including calculation issues and the potential for risk overestimation arising from conservative assumptions.

Importantly, these challenges are not isolated to a single reassessment. Similar concerns have been raised across multiple reassessments such as hydrogen cyanamide[17], the synthetic pyrethroid group[18], and now bifenthrin, regarding the need for greater consideration of data quality, uncertainty, production systems, and practical mitigation measures.

These recurring issues reinforce the need for a modernised risk assessment approach. However, until the updated framework is available, there is a need for transparent interim arrangements to ensure decisions are proportionate and informed by the best available evidence.

Interim approaches should enable regulators to:

- Consider emerging improvements in risk assessment science.
- Incorporate relevant independent technical reviews and higher-tier evidence.
- Recognise production-system-specific exposure scenarios.
- Avoid irreversible loss of important crop protection tools where methodological improvements may materially affect the outcome.

HortNZ seeks that the EPA:

- Incorporate the outcomes of the environmental risk assessment modernisation programme into future reassessments as they become available.
- Establish interim approaches while updated methodologies are being developed.
- Ensure assessments appropriately consider data quality, uncertainty, and exposure scenarios.
- Recognise New Zealand-specific production systems and practical mitigation measures.
- Provide transitional arrangements where significant methodological improvements are expected but not yet implemented.

A modern, science-based, and fit-for-purpose environmental risk assessment framework is essential to maintaining strong environmental protections while ensuring growers retain access to effective pest management options. Establishing appropriate interim measures will help avoid unnecessary disruption to horticultural production while the improved framework is being developed.

5. Conclusion

HortNZ supports strong environmental protection and recognises the importance of ensuring crop protection products continue to meet contemporary environmental standards. However, the evidence presented in this submission demonstrates that environmental risks associated with bifenthrin vary considerably across horticultural production systems, and can often be substantially reduced through practical mitigation measures and production-system-specific controls.

[17] Hydrogen cyanamide reassessment | EPA
[18] HortNZ EPA SP submission

HortNZ therefore strongly encourages the Decision-making Committee to adopt a proportionate, science-based approach that recognises higher-tier scientific evidence, realistic exposure scenarios, and established production practices. Such an approach would maintain strong environmental protections while preserving access to important crop protection tools where risks can be effectively managed.