



Call for Information on clothianidin, imidacloprid and thiamethoxam

Please submit your comments to submissions@epa.govt.nz on this form in Word document format or use the online submission form at www.epa.govt.nz

Feedback on	Call for Information on clothianidin, imidacloprid and thiamethoxam
Name	Mark Ross
Organisation name (optional)	Agcarm – representing NZ's animal medicine and crop protection industries
Postal address (optional)	Equinox House, 111 The Terrace Wellington
Telephone Number (optional)	027 442 9965
Email (optional)	mark.ross@agcarm.co.nz

Submission form

The EPA is calling for information on the three neonicotinoids: clothianidin, imidacloprid and thiamethoxam, and their use in New Zealand. This is an opportunity for you as interested parties and/or stakeholders to provide information on the types of neonicotinoid-containing substances that are currently being used in New Zealand, the ways in which the substances are being used, the prevalence of those uses, and specific mitigation measures that are being used to protect our environment. As a proactive regulator, the EPA is seeking this information in order to build a detailed database that will help us ensure our environment and our pollinators remain fully protected.

Please complete and return your feedback form to submissions@epa.govt.nz by 30 December 2018. Alternatively, you can use the online submission form on the EPA website at www.epa.govt.nz

When providing information, please provide your comments under the relevant headings below. You may focus on the areas that are relevant to you, and are not required to complete all sections. You are welcome

to submit additional study data, scientific literature, or technical reports as separate documents. If you choose to submit separate documents, please briefly identify these in the feedback form.

Feedback may be made publicly available

The Environmental Protection Authority (EPA) may publish all or part of your feedback on its website at www.epa.govt.nz. Providing feedback implies that you consent to such publication, unless you clearly specify otherwise in your feedback.

Privacy

The Privacy Act 1993 establishes certain principles with respect to the collection, use, and disclosure of information about individuals by various agencies, including the EPA. Any personal information you supply in the course of making a submission will be used only in conjunction with the matters covered by this document. We may also use your contact details for the purpose of requesting your participation in customer surveys. You may request that your personal information (other than your name) be withheld from publicly available information.

Disclaimer

This document does not alter the laws of New Zealand. The EPA does not accept any responsibility or liability to any person, whether in contract, equity or tort, or any other legal principle, for any direct or indirect losses or damage arising from reliance on the contents of this document.

1. Introduction

- 1.1 Agcarm welcomes the opportunity to provide information as part of the EPA 'Call for information on clothianidin, imidacloprid and thiamethoxam'.
- 1.2 As an industry body, our information is more generic in nature across companies and the agricultural industry, rather than specific to one product.
- 1.3 As a general statement Agcarm advocates that neonicotinoids (neonics) as a group, when used to label instruction, present negligible risk to bees, human health and the environment within New Zealand.
- 1.4 New Zealand is different to other parts of the world, such as Europe, in that the majority of neonicotinoids are applied as a coating directly onto seeds. There is very limited foliar spray carried out, hence dispersal into the environment does not occur. In addition, the New Zealand crops grown that use neonics are also generally non-attractive to bees, and are pollinated by the wind rather than bees or other insects. In Europe flowering crops such as oil seed rape and sunflower seeds are grown, which are attractive to bees.
- 1.5 Agcarm submits that no further restrictions on neonicotinoid products is necessary within New Zealand given:
 - the current regulatory controls directed by the EPA and the ACVM group at MPI,
 - the safety measures being implemented by users of the products,
 - that there has been no unexplained bee colony losses in New Zealand linked with the use of neonicotinoid products,
 - they have very low environmental loading,
 - provide targeted treatment, and
 - that the alternatives would result in reversion to using products that potentially could cause greater environmental loading.
- 1.6 It needs to be noted that the active ingredient imidacloprid is used in flea control for cats and dogs and pour-on fly and lice treatment for sheep. It's also used for ant control. No adverse effects have been reported in New Zealand from the products containing imidacloprid use when used to label instructions.
- 1.7 Hence, Agcarm submits that no additional restrictions or controls are required for imidacloprid based flea, lice-treatment and ant control products within New Zealand.

2. Provision of Information

- 2.1 Agcarm has provided one attachment, and a commentary on neonicotinoids (see Section 3) in support of the call for information.
- 2.2 The attachment is a report commissioned by Agcarm via BERL in 2014 on the 'Economic value of neonicotinoid seed treatment to New Zealand'. The report provides an estimate of the value of neonicotinoid seed treatment to the New Zealand economy.

A summary of the report is provided as follows:

- i. Neonicotinoids (neonics) help protect crops and pasture against attack from insects like Argentine stem Weevils, black beetles, grass grub, aphids and more. Most are applied as a seed coating — protecting the plant as it grows.

- ii. They are used for cereals, forage brassicas, grass seed, maize/sweetcorn, potatoes and winter squash/pumpkins as well as flea control for cats and dogs and pour-on treatment for flies and lice in sheep.
- iii. The 'Economic value of neonicotinoid seed treatment to New Zealand' report estimates that 62 percent of the arable grain, forage brassica and pasture grass seeds are planted with neonic treated seeds. It estimates that the cost to the economy of removing these seed treatments as between \$800 million and \$1.2 billion in the short to medium term.
- iv. The cost takes into account suppliers, producers and increased expenditure from those working directly or indirectly in the industry.
- v. Commissioned by Agcarm in 2014, the report remains relevant today. In fact, the cost would be even higher if inflation, increased costs for resourcing, health and safety, and fuel hikes were taken into account. A lack of alternative options will also increase the cost.
- vi. The main alternatives available to New Zealand growers include organophosphates, carbamates and synthetic pyrethroids. These alternatives are often more toxic. Organophosphates are one of the most effective (yet toxic) alternatives to neonic seed treatment, but their use is reducing. The Environmental Protection Authority made the decision to cease approving many organophosphates in a staged approach from 2016.
- vii. Aside from the economic ramifications, the report assesses the employment generated as a result of these seed treatments. This equates to approximately 5,300 full time employees.
- viii. Crop yields would also fall by a third if alternate crop protection tools were used instead of these seed treatments. The value of the treated seeds versus non-treated seeds alone is worth \$368 million.
- ix. One of the unique benefits of using neonic seed treatments is that the active ingredient can be applied at very low rates per hectare, reducing the number of insecticide applications in comparison to spray treatments.
- x. Seed treatment with neonicotinoid application is highly targeted and one of the most environmentally-friendly means of crop protection product application. Other benefits include low toxicity to humans and other mammals and no reported effect on bee health since first being registered in New Zealand in the early 1990s.
- xi. The relationship between neonic seed treatments and New Zealand's bee population has sparked much debate in recent years. Links to bee health were touched upon in the report, with the following observations from industry:
 - Seed treatments represent a very low risk to bees.
 - No unexplained bee colony losses were linked with proper use of neonic seed treatments in New Zealand.
 - Correct stewardship mitigates the risk of neonic dust exposure to bees.
- xii. Unlike Europe, there is very limited use of neonics, if any, as a foliar spray, so dispersal into the environment does not occur. Locally grown crops that use neonics are generally non-attractive to bees and are pollinated by wind or other insects.
- xiii. As the report concludes, these seed treatments aid New Zealand's economy and its farmers. It underscores that neonics are a vital tool for farmers in growing safe, healthy and sustainable food for an escalating global population.

3. Agcarm Statement - Commentary on Neonicotinoids

- 3.1 Neonicotinoids (neonics) are a group of modern insecticides noted for their excellent insect control but low toxicity in humans and other mammals. They have been on the market in New Zealand for more than 25 years and been applied to protect many hundreds of thousands of hectares of crops and pasture.
- 3.2 For crops, neonics are used in three ways – as a seed treatment – used to coat seeds prior to planting, as a soil drench applied to the roots, and as a foliar spray. Neonics are systemic and, when applied to the seed or the roots protect the plant from insect attack, minimising or eliminating the need to spray crops as they grow.
- 3.3 Seed treatment application is highly targeted and one of the most environmentally-friendly means of crop protection product application. This has largely displaced older and less effective organophosphate and carbamate insecticides which were more toxic to humans.
- 3.4 Modern silage maize production in New Zealand would almost be impossible without neonics. One of the unique characteristics of neonics is that, when used as seed treatments, they can be applied at very low rates of active ingredient per hectare, reducing the number of insecticide applications in comparison to spray treatments. This is illustrated in the graphic below.

Trade names of the main neonics available in New Zealand

- 3.5 Seed treatment application:
- Cruiser (active ingredient: thiamethoxam) for maize/sweetcorn and forage brassicas.
 - Gaucho (active ingredient: imidacloprid) for cereals, forage brassicas, grass seed, maize/sweetcorn, potatoes and winter squash/pumpkins.
 - Poncho (active ingredient: clothianidin) for cereals, maize/sweetcorn, forage brassicas and grass seed.
- 3.6 There are several neonic insecticides which can be used as foliar sprays, in-furrow or seedling tray drench, but their use is limited:
- Actara (active ingredient: thiamethoxam) for kiwifruit, pipfruit and in-furrow application on potatoes.
 - Calypso (active ingredient: thiacloprid) for avocados, kiwifruit, pipfruit and stonefruit.
 - Confidor (active ingredient: imidacloprid) for application on onions, as a transplant tray treatment of vegetable brassicas and lettuce, and as a soil drench in grapes.
 - Durivo (active ingredient: thiamethoxam + chlorantraniliprole) for leafy vegetables, brassica leafy vegetables and vegetable brassicas as pre-transplant seedling drench.
 - Solvigo (active ingredient: thiamethoxam + abamectin) for bulb onions.

This is not an exhaustive list as there are a number of generic products based on some of the above active ingredients.

3.7 Imidacloprid use for animals and controlling ants

The active ingredient imidacloprid is used in flea control for cats and dogs and pour-on fly and lice treatment for sheep. It's also used for ant control.

3.8 Neonics and bees

Managed honey bee colony numbers across the globe have been continuously increasing on most continents, even in regions with an intensive use of neonicotinoids.

Independent research has found that the varroa mite has decimated feral bee populations. It is now widely accepted that honeybees cannot survive in New Zealand without human intervention because of the impact of this mite.

Neonics have been used in New Zealand well before the varroa mite was first identified in 2000. Meanwhile, the number of managed beehives has increased from 300,000 in the year 2000 to more than 800,000 by 2017, despite the ongoing use of neonicotinoids.

It is important to ensure that bees are not exposed to neonics. This is achieved by carefully managing/controlling the main potential exposure pathways as follows:

- I. Dust off during the drilling/planting process.
This is managed by the use of film coats (stickers) which assist with adhesion of the seed treatment to the seed, reducing dust.
- II. Systemic residues in pollen/nectar.
Applied at labelled rates, neonic residues are either non-existent or well below the no observable adverse effect level.
- III. Residues of neonics in guttation fluid (water droplets exuded by some plants along the edges of their leaves when humidity is high, soil moisture is very high and the soil is warmer than the air).
Although residue levels in guttation fluid may be toxic to bees, guttation and collection of guttation fluid by honey bees are very rare and therefore not considered as an unacceptable risk to bee colonies.
- IV. Residues on flowers following foliar application of neonics. Foliar applications of neonics are limited to plants that are not in flower to avoid the risk of bee exposure.

3.9 Sub-lethal effects

Sub-lethal effects are effects that may impair normal functioning by affecting foraging activity, orientation and homing behaviour, etc. When alleged effects have been tested under realistic field conditions, they could not be found as a factor posing any damage to bee colonies.

About Agcarm

Agcarm is the industry association for manufacturers and suppliers of crop protection and animal health products. For further information and a full list of members, see www.agcarm.co.nz.

Agcarm member products protect public health, improve animal welfare and help environmental management. They:

- Play a pivotal role in growing high yield, sustainable food and fibre products;
- Help supply healthy, nutritional and affordable food;
- Keep New Zealand's agriculture, horticulture and forestry sectors internationally competitive.

Our members are committed to safety, innovation and product stewardship.