

Submissions  
Environmental Protection Authority  
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Dear Sir/Madam,

### **Submission on EPA Risk Assessment Methodology for Hazardous Substances**

This submission is made by the Apiculture NZ Science and Research Focus Group with comments directed at the EPA Document Risk Assessment Methodology for Hazardous Substances dated May 2018.

Our concern is that any product used in a wide dispersive manner in the environment presents an environmental hazard to foraging honey bees.

All references are with respect to the EPA document mentioned above.

Section 1.1 – Context – 2<sup>nd</sup> Paragraph, page 1. This statement is not correct. “... (the EPA) regulates the use of hazardous substances in New Zealand, and processes all applications for the approval to import and manufacture new hazardous substances in this country”. We wish to point out that many hazardous substances are approved for importation and manufacture under various Group Standards, by importers and distributors. Group Standard approvals do not require an assessment of the risks, costs and benefits to be analysed by the EPA.

Section 3.1. Understanding exposure paths during the life cycle of the substance. This is a significant change for the EPA and Apiculture NZ supports this change. The major problem with the ecotoxicity classification (Hazard Class 9) is that the invertebrate toxicity classification is limited to the acute oral and dermal chemical toxicity tests alone (OECD 213 and OECD 214 test guidelines). Our work shows that bees are affected by many hazardous substances that do not show any toxicity when tested to the above test guidelines, especially surfactants.

Example; the use of metsulfuron-methyl used to control broadleaf weeds, in particular gorse and broom in NZ. Metsulfuron is considered to have low toxicity to bees, but when used it has a label recommendation to tank mix with an organo silicone surfactant. This combination has been observed in a number of bee kills when spraying is conducted during the day and bees are foraging. This is a well known exposure pathway.

Unfortunately there is no ecotoxicity data for the organo silicone surfactant, which has been self-approved by the importer under Group Standard HSR002503. The Group Standard does not require mandatory disclosure of ecotoxicity data on the Safety Data Sheet or the label when the substance is used in a wide dispersive manner. And where surfactants have been tested for dermal toxicity subject to OECD 214 test guidelines they have been shown to below threshold. But when used in the foraging bees’ ecosystem they are ecotoxic!

We are aware that organo silicone surfactants are used alone in glasshouses as an insecticide to kill whitefly and mites, without any SDS or label warnings about biocidal action. They are biocidal.

Spray contractors do not place spray droplets on the thorax (OECD 214) of bees. They spray the whole bee if it is foraging in the target crop. There should be a specific ecotoxicity test for foraging bees, not just a chemical toxicity test for Class 9, if we are going to assess risks of these hazards.

An ecotoxic test would include the risks; of inhalation by bees, of asphyxiation if breathing spiracles are blocked, of chemical reaction with the hemolymph (the fluid inside the exoskeleton of the bee bathing all the internal organs) etc. The OECD 214 test is a chemical toxicity test and not one to use to assess risks of hazards on a honey bee ecosystem or suitable for ecotoxicity. Using the right test, in the correct exposure pathway will mean that adverse effect qualitative descriptors in Table 1 will be accurate and correct.

Section 3.3.1 Quantitative models used by the EPA. The Apiculture NZ Science and Research Focus Group is supportive if the use of the US EPA pollinator risk assessment. We are concerned that this risk assessment can be used to support a product when in fact it may be hazardous to bee health. An example is that the US EPA risk assessment is often for the sole pesticide and not the tank mixture, so no synergistic effects are taken into consideration – see example of metsulfuron above.

C.3.2 Model Used. Our experience with spray drift models references APP202774 EXIREL where the applicant proposed a 100 metre downwind spray buffer zone and the EPA suggested a 10 metre downwind spray buffer zone for aerial spraying. At the hearing neither party could explain the difference nor would they disclose the model they used. This is clearly not good enough.

If the EPA or an applicant are using a quantitative model such as AGDRIFT or AGDISP for supporting an application the model and data used should be fully transparent to all including public submitters.

#### C.10 Pollinators

C.10.1 Exposure linkage assessed. Does foliar sprays include tank mixtures including the use of surfactants?

C.10.2 Model used.

C10.3. Assumptions and Uncertainties. The value of these models such as BeeRex is dependent on the data available at the time of assessment.

Earlier this year Apiculture NZ supplied the EPA details of 14 surfactant products where the Safety Data Sheet did not clearly identify the substance as required in the Group Standard.

The following example shows where chemical companies are gaming the EPA and withholding essential ecotoxicity information.

**Example Canola Oil:** There are a number of products containing canola oil used by growers either as an insecticide or as a surfactant. To illustrate this I have identified two products with the same active ingredient canola oil.

**BASF HASTEN** is a spray tank surfactant for use with insecticides, fungicides and herbicides. The SDS identifies that this product's active ingredient is the 'Ethyl and methyl esters of fatty acids produced from food grade canola oil > 60%<sup>i</sup>'. BASF have claimed this product is non-hazardous under the HSNO Act and have not referenced any Group Standard. There is no publicly available evidence of any regulatory oversight by the EPA of this product.

**Hortcentre Eco Oil** is one of 7 canola oil insecticides registered as pesticides by MPI.

Eco Oil contains a minimum of 85% canola oil. It is clearly identified as substance with biocidal action. It is used as an insecticide to control two spotted mite, whitefly, scale, and green peach aphid on a variety of crops.<sup>ii</sup>

Hortcentre have a HSNO Act approval by the EPA as a hazardous substance – HSR02504

Hortcentre have an ACVM Act registration by MPI as an insecticide - P007069

Here we have two products with the same active ingredient.

Eco Oil claims control of insects and Hasten does not.

Any risk assessment would clearly identify that BASF HASTEN will be as effective against invertebrates as Eco Oil after all they are both canola oil.

If this data supplied by BASF for Hasten in their SDS was used in BeeRex it would show it was safe to bees.

None of the above products have any warnings to prevent damage to beneficial insects such as pollinators. Both would likely kill honey bees if they are sprayed whilst out foraging.

Both products can be sprayed in a 'wide dispersive manner', take out invertebrates – beneficial, indigenous and pests – one product has environmental controls and the other none!

Now what you are seeing here is a possible gaming of the HSNO regulations and the model by nondisclosure of key environmental factors. There should be a full investigation of these products which demonstrate manipulated data. Apiculture NZ has identified other candidates for the expected EPA reassessment of surfactants.

C.10.8. Alternative options considered. It is disappointing to hear the EPA has not looked more closely at the EFSA bee risk assessment model. In New Zealand last year we are aware of two bee kills of foraging bees involving herbicide use. Fungicides are now being considered a possible causative factor in colony collapse in the US after being found in significant quantities in bee products (Mullin et al 2010). Our concern is that the EPA has made a judgement against the EFSA bee risk assessment to soon.

Can the EPA supply more detail of how they determined that the “EFSA approach, will not necessarily introduce better management of bee health”?

The HSNO Act supports the use of the precautionary principle, and this decision goes against this.

There is no mention of Environmental Exposure Limits (EELs) being established for all pesticides approved by the EPA as an alternative. This is disappointing as it is a clear statutory responsibility of the EPA. The EPA has avoided setting EELs in recent years. Perhaps they should bring them back.

Measuring and monitoring data. There is no information on the use of measuring and monitoring data in NZ in order to refine risk analysis. A key understanding of Risk Management principles<sup>iii</sup> is the requirement for monitoring and reviewing the risk analysis with new information.

The EPA does not collect data on the amount of product used, the environment the product is used in, the high hazard areas of the country etc. This particularly important for environmental exposures by hazard substances. And where EELs have been set there is no monitoring of them and the levels that are in the environment, except for sodium fluoroacetate.

The Apiculture NZ Science and Research Focus Group thanks the EPA for this opportunity to submit on the proposed risk assessment methodology. If given the opportunity we would be willing to take part in further discussion of what are the best options for managing pollinator safety and health in New Zealand.

Yours faithfully



D.N. MacLeod

Apiculture NZ Science and Research Focus Group

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<sup>i</sup> [http://agro.basf.co.nz/Libraries/Product\\_Documents/Hasten\\_SDS.sflb.ashx](http://agro.basf.co.nz/Libraries/Product_Documents/Hasten_SDS.sflb.ashx)

<sup>ii</sup> <http://www.horticulture.co.nz/23/products-services/pest-disease-control/crop-chemistry-biologicals-growth-aids-and-cleaners/insecticides/eco-oil>

<sup>iii</sup> AS/NZS ISO 31000 Joint Australian New Zealand International Standard Risk Management – Principles and guidelines.