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Pest Management Regulatory Agency (PMRA)
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Re; Proposed Re-evaluation Decision PRVD2016-20, Imidacloprid.

Please consider this an addendum to the OBA response to the Re-evaluation of Imidacloprid - Preliminary Pollinator Assessment REV2016-05. While the impetus of the current proposal to phase out Imidacloprid is focused on the risks to aquatic insects, the OBA believes the proposal to phase out the use of Imidacloprid is equally important to its potential impact on insect pollinators and Ontario's beekeeping industry.

The Ontario Beekeepers' Association has represented Ontario beekeepers since 1881. Ontario is home to more beekeepers than any other province. Ontario is also the source of more than 65% of all the corn and soy grown in Canada. Because five million acres are planted in neonicotinoid treated corn, soy and winter wheat, the colonies managed by Ontario beekeepers (and their counterparts in Québec) are uniquely exposed to Imidacloprid and other neonicotinoid pesticides used on field crops.

Ontario also grows almost 37% of Canada's fresh fruit and vegetables. Most of these farm products require insect pollinators. Therefore the health of Ontario's bees and all insect pollinators should be of prime importance for anyone concerned about Canada's food security.

The broad application of neonicotinoid pesticides like Imidacloprid on field crops including: corn, soy, winter wheat and canola has been linked to the decline in bee populations in Ontario. Honey bees and wild bees are exposed to these neuro toxins in a variety of vectors:

- dust from planting treated seeds
- nectar, guttation and pollen gathered from target crops
- nectar, guttation and pollen from flowering plants, shrubs or trees within a 2- 5 km radius of the initial application
- emerging ground water containing excess pesticide residues.

Health Canada's decision to phase out Imidacloprid is the right decision given the overwhelming evidence of its harm to our environment and our food security.

While Ontario's beekeepers applaud Health Canada for taking this action to protect our environment and preserve our food security, we still believe we can do better. To this point, we offer these recommendations on the proposed regulations:

- 1. The phase out of Imidacloprid should not be delayed. Ideally it should begin by September of 2017 in time to prevent the application of Imidacloprid seed treatments to seed orders for the 2018 planting season.**

Based even on the data and analysis of its impact on aquatic insects and insect pollinators, there is no reason to delay ending the practice of widespread application of neonicotinoid treated seeds. Each season of new applications means large quantities of this water soluble, persistent and highly toxic pesticide will be added to our environment.

As beekeepers we fear exposure of our bees and wild bees not only to the 2% that is expressed as dust at planting, or the 18% taken up in the target plant but we are also concerned about collateral damage from the 80% that persists in the soil. This residue exposes bees to these powerful neurotoxins in standing water, to translocation via ground water to the pollen and nectar of target and non-target flowering plants, shrubs and trees and further exposure through migration in ground water and run-off to our streams and rivers.¹

- 2. Contrary to 'sales' information provided by the global Agchem industry, pesticides have been oversold.**

In 2014 the Ontario government enacted legislation aimed at reducing the amount of neonicotinoid seed treatments by 80% by 2017. Ontario's policy was based on overwhelming science as to the harmful effects of neonicotinoids on insect pollinators. Ontario crop specialists also concluded that while Imidacloprid and other neonicotinoids were being applied to 99% of corn and 65% of soy seeds, *only 20% of acreage was actually threatened by the pests targeted by the pesticide*. The benefits of applying neonicotinoids to winter wheat has also been questioned. This overuse of pesticides may benefit pesticide and seed distribution industries but they do so at the expense of managed and wild bees and aquatic insects

This situation is not limited to Canada: According to the U.N. Human Rights Council: Report of the Special Rapporteur on the Right to Food

¹ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0029268>

“Pesticides, which have been aggressively promoted, are a global human rights concern, and their use can have very detrimental consequences on the enjoyment of the right to food. Without or with minimal use of toxic chemicals, it is possible to produce healthier, nutrient-rich food, with higher yields in the longer term, without polluting and exhausting environmental resources.”²

Neonicotinoids are the most widely sold pesticides in the world today representing a greater than 25% share of a multi-billion-dollar global AgChem market. Despite the efforts of multinational pesticide corporations to lobby for a delay in enacting the phase-out of Imidacloprid, Health Canada must not bend to this pressure.

3. Imidacloprid continues to be a serious hazard to managed bees and all insect pollinators

Despite the recent claims of PMRA there is overwhelming science linking neonicotinoids to negative impacts on the health of wild and managed bees.

“Pesticides are stressors that have received considerable attention, and among these no single class has received more recent attention than the neonicotinoids. These insecticides are acutely toxic to honey bees, environmentally persistent and mobile in the environment.”³

After hundreds of incidents of acute bee kills were documented in Ontario during the 2012 and 2013 growing seasons, PMRA concluded that the current use of neonicotinoids in agriculture was not sustainable.

Yet on March 7, 2017 in his statement to the House Standing Committee on Agriculture and Agri-Food (AGRI), PMRA Executive Director Dr. Richard Aucoin stated: “Our current assessment is that the risk to managed bees from the use of one of the neonics, Imidacloprid, is manageable, although there remains substantial work to be done in this area, including ensuring there are no unacceptable risks to wild bees and other pollinators.”⁴

PMRA has hinted that the use of new planting machine deflectors and polymer seed coatings have reduced the spread of dust at planting. They have inferred from the lower

² United Nations General Assembly Human Rights Council Thirty-fourth session 27 February-24 March 2017 Agenda item 3 Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development.

³ Non-cultivated plants present a season-long route of pesticide exposure for honey bees
Elizabeth Y. Long & Christian H. Krupke, *Nature Communications* **May, 31, 2016**

⁴ <http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=e&Mode=1&Parl=42&Ses=1&DocId=8814113>

number of reported Incidents by beekeepers that these measures have made the threat to bee health from neonicotinoids in their words, 'manageable'.

This conclusion is misleading and misinformed for the following reasons:

- a. There has been little reduction in the actual use or application of neonicotinoids on field crops in the years cited by Dr. Aucoin;
- b. Dust is just a small percentage of the total exposure to neonicotinoid toxicity representing no more than 2% of the pesticide applied to the planted seeds;
- c. Foliar sprays (e.g. Admire) are being used in increasing amounts;
- d. There is no research cited as to the percentage of farmers who have installed dust reduction upgrades to their planting equipment;
- e. *Reduced numbers of reported incidents by beekeepers is not an indicator of reduced risk but a result of changes to incident reporting procedures.* PMRA has eliminated their on-site inspection of hives with reported pesticide poisoning. They have also ceased to collect and analyze dead bees, pollen or comb samples for pesticide residue and provide valuable reports back to the beekeeper. Beekeepers used these reports to make decisions on the location of their bee yards. *There is now little or no incentive for beekeepers to report incidents;*
- f. *Ontario beekeepers have seen little evidence that the threat to Ontario bees from neonicotinoids has abated.* Beekeepers in Ontario continue to observe the negative consequences of the widespread application of Imidacloprid and other neonicotinoids including:
 - acute bee deaths,
 - unsustainable winter losses and increased spring dwindling,
 - loss of queens,
 - low queen vitality,
 - poor (spotty) brood patterns,
 - crashing of hives in the late summer and fall,
 - high honey moisture content.

The OBA asks Health Canada to continue to consider Imidacloprid and other neonicotinoids a serious threat to insect pollinators and to ignore the PMRA director's conclusions about 'manageable' threats to honey bees from Imidacloprid.

4. Health Canada must review its pollinator risk assessment model before registering any new systemic pesticides.

Continued observations by beekeepers and additional third party research has shown damaging sub-lethal effects from chronic exposure to even micro amounts of Imidacloprid and other neonicotinoids.

At field realistic doses, neonicotinoids cause a wide range of adverse sublethal effects in honeybee and bumblebee colonies, affecting colony performance through impairment of foraging success, brood and larval development, memory and learning, damage to the central nervous system, susceptibility to diseases, hive hygiene etc.⁵

These findings contradict PMRA's willingness to allow the continued overuse of these pesticides and point to possible flaws in risk assessment protocols. If a chemical causes permanent and cumulative damage, then it should not be registered or it should become de-registered.

All current and future systemics need to be re-assessed or assessed with meaningful and realistic assessment scenarios to properly account for the new risks to insects from systemic, mobile and persistent type insecticides. Sub-lethal or brain damaging effects and not LD50 should be used for thresholds.

Research has shown that the combination of fungicide and neonicotinoid pesticides commonly found on seed treatments significantly increases their toxicity. These synergistic effects must be factored into evaluating the toxicity of Imidacloprid and other systemic pesticides before approving exposure to both insect pollinators and aquatic insects.

While Imidacloprid and other neonicotinoids pose a serious threat to insect pollinators, new, recently approved systemics may be equally threatening. Several new systemic insecticides registered by PMRA are currently being sold in Ontario in anticipation of restrictions on the current Class 12 neonics. Currently their use falls outside of Ontario's current Class 12 regulatory framework leaving PMRA as the primary gatekeeper to protect insect pollinators and aquatic insects from exposure to toxic new systemics.

PMRA relies on research from the pesticide manufacturer for proof of acceptable toxicity to pollinators for approval of registrations. But unbiased studies showing negative effects from sublethal doses of new systemics put into question the risk assessment protocols that PMRA is accepting to approve new systemic pesticides.

⁵: van der Sluijs JP, et al.: Neonicotinoids, bee disorders and the sustainability of pollinator services, Curr Opin Environ Sustain (2013), <http://dx.doi.org/10.1016/j.cosust.2013.05.007>

As an example, Ontario seed dealers report that DuPont's Lumivia seed treatment will likely replace as much as 75% of neonicotinoid seed treatments on corn and soy in Ontario this planting season. <http://www.dupont.ca/en/products-and-services/crop-protection/corn-soybean-protection/products/lumivia.html>

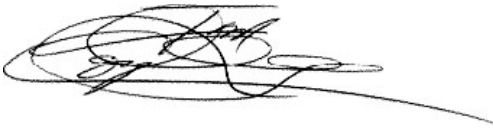
Yet despite approval by PMRA, studies have shown, chlorantraniliprole the active ingredient in Lumivia, negatively effects the behaviour of bees.⁶

5. Health Canada should promote an IPM Culture.

Pesticides should be used only as part of an Integrated Pest Management program. As most fruit and vegetable growers who adopt IPM know, not all crops require pesticides all the time. IPM encourages soil conservation and soil improvement and only the targeted use of pesticides. The current practice of the overuse of pesticides is an unnecessary expense for farmers and destructive to our environment. Using pesticides in an IPM program and only when there is a demonstrated need is a reasonable policy for limiting their use.

We hope that we have shed some additional light on an important issue that effects insect pollinators, aquatic insects and threatens Canada's food security. The Ontario Beekeepers' Association appreciates Health Canada's attention to this matter and looks forward to its additional reports and recommendations concerning the phase out and immediate re-assessment for pollinator safety of all neonicotinoids and the careful screening of new systemic pesticides.

Sincerely,



Jim Coneybeare
President

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https://www.researchgate.net/profile/Guy_Smagghe/publication/236129347_Dietary_chlorantraniliprole_suppression_reproduction_in_worker_bumblebees/links/00b49517134cea545a000000.pdf