



January 30, 2015

Re: Municipality of Chatham-Kent briefing notes for 'Proposal for Enhancing Pollinator Health and Reducing the Use of Neonicotinoid Pesticides in Ontario'.

Thank you for the opportunity to respond to Mayor Randy Hope's Briefing Note on the important issue of pollinator health. The Ontario Beekeepers' Association has represented the interests of Ontario beekeepers since 1881. Now representing more than 3,000 beekeepers, we are mindful of the unique threat that the overuse of neonicotinoids poses to our environment, our food security, the health of bees and the viability of our industry.

First, we would like to express our disappointment that, despite the OBA's contribution to the Information Report prepared by the Economic Development Services of Chatham-Kent, the paper, itself, was written by representatives of the agricultural seed industry and reflected none of OBA's information, experience or comments. We would have hoped that a widely distributed political submission such as this would make every effort to reflect the positions of all key stakeholders.

Therefore, we would like to begin by correcting some of the inaccurate statements embodied in the report.

CORRECTIONS: (Italic statements are from Mayor Hope's submission)

"This (seed dust) created an acute exposure risk for bees under the right conditions, which has become the central issue in the neonicotinoid use debate."

Neonicotinoids are systemic, water-soluble pesticides. That means that they are drilled into the soil and taken up by the corn plant through the soil to kill insects feeding on the corn. While the dust generated from the planting of coated seeds can cause direct mortality of bees, only 2% of the active ingredients are released through the dustⁱ, the remainder is found in pollen and also in water and soil which are known to accumulate over an extended time periodⁱⁱ creating acute and sub-lethal exposure throughout the season. Not only are bees exposed to these neurotoxins from dust that settles on adjacent wildflowers, but the pesticide itself contaminates ponds and puddles in and around the fields that bees rely on for sources of water.ⁱⁱⁱ

"Farmers across Ontario have recognized this risk and adopted risk reduction strategies that lead to a 70% decline in the number of calls made to Health Canada on this issue in 2014 with 72% of the calls made from three beekeepers."

As you will see by the chart provided by Ontario's Provincial Apiarist, this assertion is incorrect. In fact, the number of reported incidences was higher than both 2012 and 2013. Considering that 58% of Ontario's colonies died during the winter (thus providing significantly fewer colonies to start with), and due to the late start to spring planting when many of the 30,000 colonies were already out of province for pollination services, one might have assumed fewer reports, but in fact, that was not the case.

Bee Kill Reports – 2012, 2013, 2014



- 2012: ~240 reported incidents, 40 beekeepers
2013: ~320 reported incidents, ~80 beekeepers
2014: ~345 reported incidents, ~62 beekeepers
highest number reported in August
- Incidents reported in association to corn and soybean planting
 - Bee, pollen, soil and water samples are being analyzed
 - Reported symptoms include:
 - Abrupt loss in the population of the colony (lots of capped brood with few bees)
 - Dead and dying bees at the entrance
 - Disorientated, paralyzed and shaking bees

[Source: PMRA; OMAFRA]

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“Will force farmers to move back to full field foliar sprays to control insects.”

This statement ignores the fact that, according to Ontario’s crop specialists, only 10 – 20% of corn and soy acreage actually need neonicotinoid pesticides and yet nearly 100% of corn and 65% of soy are using them prophylactically. It also fails to recognize that the proposed regulations will allow for those farmers with a demonstrated need for the product to use it if they can demonstrate the need, which should eliminate any economic disadvantage. In fact, since so many farmers are using treated seed unnecessarily, we would anticipate an actual cost saving related to the purchase of what should be less expensive, untreated seed.

“...elimination of neonicotinoid seed treatments in corn and soybeans would cost Ontario farmers \$630 million dollars per year.” Also “Lower yields will force farmers to grow crops on marginal land which will in fact further reduce pollinator habitat.”

These statements presume a significant effect on yield and yet there is scientific evidence that this is not the case. Most recently, the Environmental Protection Agency (EPA)^{iv} stated, “soybean farmers see little or no benefit from neonicotinoid seed treatments.” In Italy, where neonicotinoid pesticides were banned for corn (maize) in 2008, the monitoring network APENET found that farmers’ untreated corn crops did not suffer reduced yield and that productivity remained high. They concluded that a similar reduction in disease incidence could be achieved by rotating crops and adopting resistant hybrids without using insecticides.^v And further, Christian Krupke, an associate professor with Perdue University, also questions the true agronomic value of these treatments. In 2011 and 2012, Krupke and his colleagues planted corn seed with no treatment, corn with a full rate of Poncho, a Bayer seed treatment, and a third with a lower rate of Poncho. Krupke then evaluated yields, stand count and root damage from the two years of data and said that the findings are clear, “Across the board we found no differences, no statistical difference in any parameter at any location.”

In addition as any farmer will tell you, marginal land has already been planted in corn and soy. In most of Ontario we have seen the disappearance of clover or wildflower pastures hospitable to bees.

We would also like to point out that according to the Ontario government’s report, the value of pollination from managed honey bees is ‘about \$897 million of the roughly \$6.7 billion in total sales for agricultural crops grown in Ontario’.

“A report from HGCA states that 41% of all crops were affected by the beetles. This led to a significant use of pyrethroids”.

This statement is incomplete. The first sowing of oilseed rape without neonics in the UK was August 2014. About 1.5% was lost to flea beetle, according to the Home Grown Cereal Authority (HGCA) referred to in the report. According to their website, the beetle "causes on average just a 1% yield loss in untreated crops."^{vi} With regard to pyrethroids, the HGCA goes on to say, "What was less certain, however, was whether that crop was worth treating at all. There wasn't a particularly significant infestation, and there was little difference in the level of damage between treatments — it's doubtful there'll even be a difference in yield."

ADDITIONAL COMMENTS

1. The proposed regulatory process recognizes the limited value of these chemicals, but provides flexibility for those few cases that could benefit from it. The preemptive use of neonicotinoid pesticides on over four million acres of corn and soy has made it nearly impossible for beekeepers to avoid the acute and chronic effects of neonicotinoid pesticides. The legislation, which allows for exemptions for those with proven need - if implemented according to intention - will result in significant decreases in the use of these toxins and open up safe lands for beekeepers to place their hives.
2. Prior to this proposal, farmers had little choice related to seed selection, which provided seed companies and pesticide manufacturers unfettered control of the seed market. Farmers seeking quantities of the latest high-production hybrids could only buy neonicotinoid treated seeds without knowing the cost of the pesticide treatment. By making it a requirement for seed vendors to provide an adequate supply of untreated seed in the high producing hybrids as a default and in a timely manner, the seed market will operate to the benefit of the environment and not to the sole benefit of industry profit. The requirement to report sales of neonicotinoid treated seeds will help assess whether this goal is met.
3. OBA supports the recommended changes to planting practices and those that have been implemented so far. We understand that the new deflectors and the shift to polyethylene-wax based powder lubricant may reduce the spread of dust at planting time we caution that these BMPs, without the regulatory framework proposed, will not solve the problem. The Corn Dust Research Consortium research showed that while reduction in dust was achieved, the toxicity of the dust, itself, is higher. Pollen counts show that even with these improvements, neonicotinoid residues were found and collected by bees from adjoining flowering trees and shrubs. Finally, this same research showed high levels of pesticide on corn pollen collected by bees indicating exposure was not limited to dust at planting. In fact, reduction of dust at planting does nothing to address the mobile, persistent and systemic action of these pesticides.
4. Although we recognize that the Precautionary Principle was an enabling factor in the decision to proceed with the permit system, there is no question that the tenets of the government's policy direction are based on an abundance of sound, independent science. This year, alone, brought us the Worldwide Integrated Assessment on Systemic Pesticide, a six-year analysis of 600 studies involving 50 scientists that concluded, "The present scale of use, combined with the properties of these compounds, has resulted in widespread contamination of agricultural soils, freshwater resources, wetlands, non- target vegetation and estuarine and coastal marine systems"^{vii}; new evidence "that honey bees and native pollinators are facing unprecedented cumulative exposure to these insecticides from combined residues in pollen, nectar and water"^{viii}; research showing "the chronic impairment of bumblebee natural foraging behaviours induced by sublethal pesticide exposure"; and research concluding that "significantly decelerated growth of neonicotinoid-exposed colonies during the following spring was associated with queen failure, revealing previously undocumented long-term impacts of neonicotinoids"^{ix}, to share just a few.
5. And finally, much is made of the fact that neonicotinoids aren't the only factor affecting bee health. This is true, just as they aren't the only factor in crop yield. But is important to understand that the stressors – varroa, viruses, habitat, and nutrition – are not independent issues, as there are significant interactions and synergies between them. Research shows us that neonicotinoids are related to all of them. By compromising the bees' immune systems,

bees are more vulnerable to viruses and find it more difficult to fight off varroa^x; by reducing their navigation skills, neonicotinoids affect the bees' capacity to forage and communicate forage opportunities to other bees^{xi}; by reducing the availability of a diversity of uncontaminated plants, neonicotinoids compromise nutrition^{xii}.

RECOMMENDATION

The OBA encourages municipalities to support the Ontario Government's proposal to limit the use of neonicotinoids through the targeted use of treated seed to where it is truly required.

The Ontario Beekeepers' Association
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For research and resources: www.ontariobee.com/neonics

ⁱ An overview of the environmental risks posed by neonicotinoid insecticides.

<https://www.sussex.ac.uk/webteam/gateway/file.php?name=goulson-2013-jae.pdf&site=411>

ⁱⁱ Xerces Society: Beyond the Birds and the Bees. http://www.xerces.org/wp-content/uploads/2013/09/XercesSociety_CBCneonics_sep2013.pdf

ⁱⁱⁱ Van Dijk, Tessa C, Van Staalduinen, Marja A, Van de Sluijs, Jeroen P. "Macro-Invertebrate Decline in Surface Water Polluted with Imidacloprid." May 2013 PLOS

ONE <http://www.ontariobee.com/sites/ontariobee.com/files/neonicsandNetherlandswater2012.pdf>

^{iv} [http://www2.epa.gov/sites/production/files/2014-](http://www2.epa.gov/sites/production/files/2014-10/documents/benefits_of_neonicotinoid_seed_treatments_to_soybean_production_2.pdf)

[10/documents/benefits_of_neonicotinoid_seed_treatments_to_soybean_production_2.pdf](http://www2.epa.gov/sites/production/files/2014-10/documents/benefits_of_neonicotinoid_seed_treatments_to_soybean_production_2.pdf)

^v "Effects of coated maize seed on honey bees: APENET project

<http://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/860>

^{vi} <http://www.hgca.com/media/12056/T2F%20July%202014%20CSFB.pdf>

^{vii} <http://www.tfsp.info/worldwide-integrated-assessment/>

^{viii} <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0108443>

^{ix} http://www.farmlandbirds.net/sites/default/files/Sandrock_Impact%20of%20Chronic%20Neonicotinoid%20Exposure%20on%20Honeybee_journal%20pone%200103592.pdf

^x "Immune suppression by neonicotinoid insecticides at the root of global wildlife declines"

http://www.gmfrecymru.org/pivotal_papers/JEIT-D-12-00001_proofs.pdf

^{xi} "A common pesticide decreases foraging success and survival in honey bees."

http://zembla.vara.nl/fileadmin/uploads/VARA/be_users/documents/tv/pip/zembla/

^{xii} "Are Neonicotinoids Killing bees?" <http://www.xerces.org/neonicotinoids-and-bees/>