

January 5, 2015

Pollinator Health Update

Farm & Food Care Ontario members have identified pollinator health as a priority topic on behalf of the whole agri-food sector in Ontario. This update will provide members with details about Farm & Food Care Ontario and other related efforts regarding pollinator health, as well as many useful links to references. The references and links provided in this report provide valuable context and information to support an informed discussion about pollinator health and how to improve it.

Report on the Pollinator Health Action Plan Consultations

Toronto – Public Consultation

Two Farm & Food Care employees attended the December 11 Toronto public consultation meeting for the *Pollinator Health Action Plan* created by OMAFRA and Ministry of the Environment and Climate Change (MOECC). Farm & Food Care, in addition to other agricultural organizations present, provided a voice for Ontario farmers, ensuring Ontario agriculture was recognized as an important part of the consultation process. We chose to attend that session specifically as there were several prominent environmental NGOs represented.

Key takeaways from the Toronto public consultation:

- Agricultural organizations spoke, addressing the need for credible information to be part of the regulation and allow for unhindered input from PMRA and Health Canada.
- Environmental NGOs were quite clear that they expected the ban to apply to all agricultural uses of neonicotinoids
- Agricultural organizations expressed their concern that farmers have invested in BMPs to reduce the risk of exposure from NNI dust and a season or two is required to evaluate these steps. The government's action to limit access ignores the steps already taken by farmers.

For an Overview of the London Consultation:

<http://www.realagriculture.com/2014/12/north-america-watching-farmers-weigh-neonic-regs-consultation-process>.

Guelph – Consultation

Les Nichols, Farm & Food Care's Environment Advisory Council Chair and Bruce Kelly, Environmental Program Manager, attended the invitation-only meeting for agricultural organizations in Guelph December 18.

At the meeting representatives of Grain Farmers of Ontario (GFO), seed companies, Ontario Agri-Business Association, CropLife Canada and equipment manufacturers made presentations about how the impending regulations were not based on scientific evidence. As a group of organizations, they made their frustrations known about the process by leaving the formal meeting to hold a separate private meeting to “discuss a sustainable approach to the future of family farming”. For more on this visit: <http://www.realagriculture.com/2014/12/ontario-agriculture-industry-vows-create-pollinator-health-initiative/>.

Excellent presentations were made by the canola and seed growers associations providing solid examples of where NNI’s are used and there are no issues with pollinator health. Agronomists and the agricultural organizations that remained in the consultations including Ontario Fruit & Vegetable Growers, Farm & Food Care, Ontario Soil & Crop Improvement Association and the OFA (and others) at the meeting repeatedly pointed out that neonicotinoids were introduced as a safer alternative to a previous generation of pesticides that had been used in the past and thought must be given to what unintended consequences of an arbitrary reduction target not based on agronomic information. Practices such as more tillage or more foliar applications of products more dangerous to farmers and bees are viewed as moving backwards by farmers and would have negative consequences to the environment.

The farm groups that remained at the meeting did not review the questions posed by the government as intended in the agenda, as it was felt they were based on incomplete information. Instead, they emphasized to the government representatives present that more time is required to evaluate practices the industry has adopted to limit exposure to seed treatment dust since pollinator health issues have been raised.

Key points that were emphasized:

- Neonicotinoids are an important part of crop production, integrated pest management and environmentally sustainable farming practices and ways should be found to continue to use them in a safe manner.
- Farmers are committed to finding workable, practical solutions to limit exposure of bees to pesticides including minimizing the exposure risk of bees to the dust from treated seed.
- Since 2012, when information about the risks of seed treatment dust began to surface, farmers, seed companies and equipment manufacturers have been developing constructive strategies to limit the potential sources of exposure to pollinators to seed treatment dust.
- Many new practices have been introduced to decrease the risks to pollinators. These measures include a voluntary plan by seed companies to reduce the amount of neonicotinoids used in the seed treatment formulation, using polymer coatings to reduce dust at application, replacing talc with a new “fluency” agent used in planters to reduce dust, installation of air deflectors on existing planter equipment and an air emission standard for new equipment to minimize airborne partial release in conjunction with greater awareness overall by farmers of the issues surrounding planting dust and bee health.
- These industry-led measures phased in over the 2013 and 2014 planting seasons have not been given enough time to be properly evaluated to determine if they will reduce negative impacts to bee health, and;

- Any provincial government imposed restrictions on neonicotinoid use are premature at this time.

Environmental Bill of Rights Submissions

Submissions must be received electronically or by mail by **January 25, 2015** to be part of the public record. Farm & Food Care is currently developing a draft submission to the EBR that can be used or cited by our members. Our staff is also available to review members’ submissions if you’d like to do your own.

Link to the EBR submission website: <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTIzOTE5&statusId=MTg2NDA3>.

Statistics Canada – Honey Production data for 2014

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0010007&pattern=honey&tabMode=dataTable&srchLan=-1&p1=2&p2=49>

If you follow this link and then click on the “Add Data” tab, you can populate information about honey production for Ontario.

(Excerpt from data) This table indicates the shift in honey production from 2013-2014

Honey Production in Ontario	2013	2014	Increase
Beekeepers	3155	3262	3%
Colonies	97500	112800	16%
Production of honey, total (pounds x 1,000)	6363	8192	29%
Value of honey, total (dollars x 1,000)	\$20,362	\$30,310	49%

Media & Food Industry Liaison

Farm & Food Care sent information on pollinator health to several restaurant and grocery industry associations and companies directly in December, with the offer to provide more information as they required. Farm & Food Care developed and provided the Globe & Mail and Toronto Star with a backgrounder about Canadian Association of Physicians for the Environment (CAPE) to inform them of their intention to outright ban pesticides, and not engage in a useful dialogue regarding pollinator health. We will continue to send that to media who use CAPE as a “source” in the future. For example, contrary to what the name implies with “Physicians” for credibility, anyone can join this group for \$25.

Farm & Food Care also sent two letters to the editor during December, 2014 replying to the following articles featured in the Globe and Mail with the goal to encourage a fair and credible journalistic approach and some practical context.

1. <http://www.theglobeandmail.com/technology/science/scientists-in-guelph-come-one-step-closer-to-saving-the-bees/article22098146/>

Dear Globe & Mail,

This is a great example of the complexity of the pollinator health issue. It is important to provide scientists and researchers with the time and tools they need to ensure all issues of pollinator health are explored and can be mitigated.

Current Ontario regulation proposals seek to reduce the use of neonicotinoid treated seed, without adequately exploring issues such as foulbrood that have a significant impact to Ontario pollinators, in this case bees. Ontario farmers support bee health and are working hard to improve their practices. In 2013, farmers invested their own money into new planting technologies to reduce the risk of exposure from treated seed dust to bees.

Farmers encourage everyone to support bee health and to allow credible research to be conducted unhindered to ensure all issues of pollinator health are dealt with timely and effectively.

Les Nichols, Chair Farm & Food Care Environmental Council

2. <http://www.theglobeandmail.com/report-on-business/neonics-sowing-seeds-of-discontent/article22078266/>

Dear Globe & Mail,

As a farmer, I am concerned about bee health for many reasons. I rely on them to pollinate my crops and our food. Reducing honey bee deaths is a goal all farmers can support.

But how many bees are dying? The Globe referenced the often quoted “over wintering bee losses of 58%” in Ontario. Stats Canada just released their report that Ontario honey production increased by 22% over 2013. How is that possible with only 42% of bees?

Health Canada (PMRA) recently released its review of the use of “Neonicotinoid Pesticides and Bee Health” noting that seeding-time bee mortalities were down 70% in 2014. Although this doesn’t make the news, the agency says this may be credited to farmers’ efforts to reduce emissions and dust and modifying seeding equipment.

As farmers, we take ecosystem and bee health very seriously. This is complicated science and not a “cause” for us; it’s our livelihood and our way of life.

Les Nichols Chair Farm & Food Care Environmental Council

Articles and References

There are differing opinions about the potential impacts that Neonicotinoids (NNIs) have on pollinator health but there is evidence that fugitive dust associated with vacuum planters (unmodified) is a recognized mode of possible exposure to spring foraging bees. Fortunately, now that this link has been made, there are many initiatives being undertaken by equipment manufacturers, seed companies and farmers to minimize risk to pollinators from pesticide exposure. These industry-led measures phased in

over the 2013 and 2014 planting seasons have not been given enough time to be properly evaluated to determine if they will reduce negative impact to bee health. The following will give members a good overview of what information is available to date and efforts are underway.

1. Update on Neonicotinoid Pesticides and Bee Health from PMRA

An update about the group of pesticides including information about bee health produced by the Pesticide Management Regulatory Agency (PMRA):

<http://www.hc-sc.gc.ca/cps-spc/pubs/pest/fact-fiche/neonicotinoid/neonicotinoid-eng.php>

2. Why was Ontario's honey bee losses so high in the winter of 2013/14?

Terry Daynard investigates the high loss percentage for Ontario compared to other provinces (Table 1), and anecdotal reports of huge differences among individual beekeepers (range 0 to 100% loss).

<http://tdaynard.com/2015/01/02/what-killed-ontario-bees-last-winter-2/>

3. Ministry of Environment, Energy and Climate Change: Pollinator Health

MOECC-prepared information about pollinator health, providing information about neonicotinoid use globally.

<https://www.ontario.ca/environment-and-energy/pollinator-health>

4. Neonicotinoid-Contaminated Puddles of Water Represent a Risk of Intoxication for Honey Bees

A Quebec-based study: Although the overall average acute risk of drinking water from puddles was relatively low, concentrations of neonicotinoids ranged from 0.01 to 63 µg/L and were sufficient to potentially elicit a wide array of sublethal effects in individuals and colony alike.

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0108443>

5. Managed honey bee colony losses in Canada, China, Europe, Israel and Turkey, for the winters of 2008-9 and 2009-10

In 2008 the COLOSS network was formed by honey bee experts from Europe and the USA. The primary objectives set by this scientific network were to explain and to prevent large scale losses of honey bee (*Apis mellifera*) colonies.

<http://www.ibra.org.uk/articles/Honey-bee-colony-losses-in-Canada-China-Europe-Israel-and-Turkey-in-2008-10>

6. The dose makes the poison: have “field realistic” rates of exposure of bees to neonicotinoid insecticides been overestimated in laboratory studies?

From the journal of *Apicultural Research*: A recent study viewed the link between pesticides and declining bee health to determine if pesticides were indeed a major factor of bee deaths. The authors note a lack of replicable evidence for field studies and suggest that laboratory studies are not viewing variables as accurately as possible, leading to inflated or incorrect statistics and irrelevant information.

<http://www.ibra.org.uk/articles/Neonicotinoids-has-laboratory-field-realistic-exposure-been-overestimated>

7. A large-scale field study examining effects of exposure to clothianidin seed-treated canola on honey bee colony health, development, and overwintering success.

An Ontario-based study (Cutler and Scott-Dupree): Summer 2012, a large-scale field experiment in southern Ontario, Canada, to determine whether exposure to clothianidin seed-treated canola. Overall, colonies were vigorous during and after the exposure period, and we found no effects of exposure to clothianidin seed-treated canola on any endpoint measures. Bees foraged heavily on the test fields during peak bloom and residue analysis indicated that honey bees were exposed to low levels (0.5–2 ppb) of clothianidin in pollen.’

<https://peerj.com/articles/652/>

8. Adjusting Planters to Protect Pollinators OMAFRA Fact Sheet

In order to mitigate risk of dust exposure to bees, Ontario stakeholders believe that practical initiatives to reduce dust released during planting should be considered. This includes the use of an improved seed lubricant and the use of planter deflectors, in order to minimize pollinator exposure.

<http://www.omafra.gov.on.ca/english/crops/facts/adjustingplanters.htm>

9. Neonicotinoid Contaminated Dust and Pollinator Exposure during Planting; Results from 2013

An Ontario-based study by: Tracey Baute, OMAFRA, Dr. Art Schaafsma, UGRC, Dr. Cynthia Scott-Dupree

Significant levels of dust highly contaminated with neonicotinoid residues dust were emitted from vacuum planters. Bayer Fluency Agent Reduced Quantity of Neonic Active Ingredient in Exhausted Dust by 28%. Other Potential Routes of Exposure May Exist but Likely Minor Compared to the Dust Emitted from Planters.

<http://fieldcropnews.com/wp-content/uploads/2014/01/2013-Ontario-Corn-Planter-Dust-Research-Study-Results-Jan-28-Final1.pdf>

10. Using Fungicide-Only Treated Seed and Following IPM Tracey Baute, Field Crop Entomologist

Tracey Baute, Field Crop Entomologist – OMAFRA

<http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2013/ct-0913.pdf>

11. Neonicotinoid insecticide travels through a soil food chain, disrupting biological control of non-target pests and decreasing soya bean yield.

From the *Journal of Applied Ecology*: Neonicotinoid residue analyses revealed that insecticide concentrations declined through the food chain, but levels in field-collected slugs (up to 500 ng g⁻¹) were still high enough to harm insect predators.

<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12372/full>

12. Bees and Canola: Thriving Together

From the Canadian Canola Council: Communication is the most important tool for protecting pollinators. Growers are encouraged to share their pest management plans with honey producers in the area. Armed with this information, beekeepers can then reduce exposure by moving or covering their hives during spray applications.

http://www.canolacouncil.org/media/555721/bees_canola_fact_sheet_growers_beekeepers.pdf

13. Canadian Seed Industry Takes Further Steps to Mitigate Risk to Pollinators

Canadian Honey Council press release December 12: The Canadian Seed Trade association indicates they are working towards measurable reductions in the amount of neonicotinoid pesticides applied to treated seed and improved labelling, among other initiatives, to continue to reduce risk from treated seed to pollinators.

http://www.honeycouncil.ca/images2/pdfs/Backgrounder_Rate_Reduction_Final.pdf

14. Pesticide-laden dust emission and drift from treated seeds during seed drilling: a review

From the *Society of Chemical Industry*: This review article presents the state of the art of the phenomenon of dust emission and drift from pesticide seed dressing during sowing and its consequences.

http://www.boerenlandvogels.nl/sites/default/files/2013_Nuyttens_Lit_review_dust_drift_PMS.pdf

15. Grain Farmers of Ontario Delivers United Message to Minister Leal

Following the December 18th Agricultural consultation about the proposed Pollinator Health Action Plan, the Grain Farmers of Ontario (GFO) released a statement indicating the organization will be working with other agricultural organizations to seek a more inclusive and sustainable action regarding pollinator health in Ontario.

<http://www.gfo.ca/LinkClick.aspx?fileticket=KjHQaB8C5DQ%3d&tabid=139&mid=504>

16. Terry Daynard's response to the proposed Pollinator Health Action Plan

Daynard provided an in-depth analysis of the proposed, Pollinator Health Action Plan and points out that much of the basis for the legislation is not based in credible science and successfully refutes many points with credible scientific evidence.

<http://tdaynard.com/2014/12/14/critique-of-a-proposal-for-enhancing-pollinator-health-and-reducing-a-proposal-for-enhancing-pollinator-health-and-reducing-the-use-of-neonicotinoid-pesticides-in-ontario-discussion-paper-by-the-2/>

2014 Best Management Practices: Pollinator Protection and Responsible Use of Insecticide Treated Seed

Health Canada and the Ontario Ministry of Agriculture, Food and Rural Affairs prepared BMPs for the 2014 growing season that included new technologies and practices to reduce the risk of exposure to dust from treated seeds to pollinators, bees in particular.

<http://www.gfo.ca/LinkClick.aspx?fileticket=Jsg4hLPClt4%3d&tabid=965>

About Farm & Food Care Ontario

Farm & Food Care Ontario provides credible information on food and farming in Ontario on behalf of the whole sector. One of our primary objectives is to advance responsible environmental practices with a coalition approach. We will continue to provide credible information about best management practices, research and ideas that support farmers in their sustainable farming efforts.

For more specific information or advice or suggestions for future efforts on this topic please contact:

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