



# Election Kit: Ontario 2014

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# Introduction

The most important thing we can do this election is to get our candidates to publicly commit to working for bee health should they get elected. There is no reason why your local candidate should not have a position on bee health and the OBA's call for a moratorium on the sale of neonicotinoid treated seeds. The issue of declining bee population has been very visible in the media and our polling shows more than 8 out of 10 Ontarians support the call for a ban.

Recently the OBA has in concert with the National Farmer's Union (NFU) updated its position on the neonicotinoid pesticides that are killing our bees. We are focusing on the root of the problem, which is the inappropriate and indiscriminate use of these highly toxic pesticides on 50% of Ontario's cropland. We are therefore calling for an immediate moratorium on the sale of neonicotinoid treated seeds. This will break the cycle of indiscriminate use of pesticides because: (1) only a small fraction of Ontario farmers have a pest problem that warrants the use of neonicotinoids on field crops and (2) by banning the sale of treated seeds more farmers will follow good agricultural practices such as cover cropping and crop rotations which further reduce the need for pesticides. (see below for a full statement of our position).

The questions for your candidate are simple:

1. Ontario has lost thousands of hives in both 2012 and 2013 that Health Canada has confirmed were the result of exposure to neonicotinoid pesticides in soy and corn planting. Do you support our call for a moratorium on the sale of the neonicotinoid treated seeds that are killing our bees?
2. Health Canada and other studies have shown significant amounts of persistent neonicotinoid pesticides in water and soil samples across Ontario. With over 4 million acres treated annually with these pesticides, will the candidate's party declare this an urgent environmental problem?

Once you know which side a candidate has taken you need to make their views public so that local voters can make an informed choice. Polling has found that voters are influenced by positions on public issues. We want whichever government is formed know that we are potent force that can influence elections and that we will hold their feet to the fire after the election.

Use the OBA Election Kit to find your candidates and meeting dates, and their position. Once you know where they stand, notify the OBA at [enews@ontariobee.com](mailto:enews@ontariobee.com) and then circulate to others through email and social media.

- Use your social media tools like FaceBook and Twitter. Post on their timelines.
- Write a letter to your local paper or post on their website.
- Make a placard or poster and show up at meetings or rallies demonstrating your support or opposition to the candidate's position.
- Bee the message: If you would like BeeCause pins or to purchase a BeeCause T-Shirt, call the OBA office at 905.636.0661 or order online.

# 1. Meet your local candidates:

The Provincial election will be held on Thursday, June 12, 2014. You have between now and then to meet your candidates, get to know their positions, and educate them about the need to suspend the use of neonicotinoid pesticides now.

There are a number of ways to meet your candidates, through the candidates' door-to-door canvassing, through local 'meet your candidate events' and by arranging a face-to-face meeting.

## To arrange a face-to-face:

- Find out who your local candidates are: This information can be found at the Elections Ontario website ([www.elections.on.ca](http://www.elections.on.ca)) or by visiting the individual party websites.
- Send your request for a meeting in writing, stating who you are and why you are requesting the meeting.

## Plan your talk (this works if the candidate shows up at your door or at events as well):

- a. **Present your case**, but keep to two or three key points. (See discussion points resource)
- b. Then **get to the point**; let them know that you want these pesticides removed from use. Here are some sample questions:
  - i. Ontario has lost thousands of hives in both 2012 and 2013 that Health Canada has confirmed were the result of exposure to neonicotinoid pesticides in soy and corn planting. With the upcoming planting season only weeks away, what will the candidate's party do to prevent another round of bee kills?
  - ii. Health Canada and other studies have shown significant amounts of persistent neonicotinoid pesticides in water and soil samples across Ontario. With over 4 million acres treated annually with these pesticides, will the candidate's party declare this an urgent environmental problem?
  - iii. As a result of acute and chronic neonicotinoid pesticide poisoning, beekeepers are losing their bees. Is the candidate's party willing to ban these toxic chemicals or are they just going to sit back and wait for another agricultural industry to fail?
  - iv. The Liberal Government has offered a one-time only compensation package of \$105 per hive to beekeepers whose losses exceed 40%, an amount that is a fraction of the real cost to beekeepers. Would your party do better?
- c. **Wrap up**. When the meeting is coming to a close, thank the candidate for meeting with you. Leave materials such as the FAQ's or other materials you feel would be helpful.

## 2. Attend an All-Candidates Meeting

All-candidates meetings and debates are events where political candidates come together to discuss election issues before a public audience. These meetings offer the local candidates and parties the opportunity to reinforce key messages and share positions on different issues. The meeting offers an opportunity to ask questions to your local candidates and encourage them to make a public commitment to suspend the use of neonicotinoids.

### **How to find local events:**

- Local candidate headquarters
- Your MPP's constituency office
- Political party websites
- Local media

**Asking a question:** Although these meetings sometimes have set questions, there is usually an opportunity for members of the public to ask their own questions as well. If they require the questions in writing, have as many people as possible submit your questions. There may also be an opportunity (or you may want to provide it yourself) to ask questions from the floor.

Some examples of questions:

- i. Ontario has lost thousands of hives in both 2012 and 2013 that Health Canada has confirmed were the result of exposure to neonicotinoid pesticides in soy and corn planting. With the upcoming planting season only weeks away, what will the candidate's party do to prevent another round of bee kills?
- ii. Health Canada and other studies have shown significant amounts of persistent neonicotinoid pesticides in water and soil samples across Ontario. With over 4 million acres treated annually with these pesticides, will the candidate's party declare this an urgent environmental problem?
- iii. As a result of acute and chronic neonicotinoid pesticide poisoning, beekeepers are losing their bees. Is the candidate's party willing to ban these toxic chemicals or are they just going to sit back and wait for another agricultural industry to fail?
- iv. The Liberal Government has offered a one-time only compensation package of \$105 per hive to beekeepers whose losses exceed 40%, an amount that is a fraction of the real cost to beekeepers. Would your party do better?

### **Bee the message:**

If you would like BeeCause pins or to purchase a BeeCause T-Shirt, call the office at 905.636.0661. We also have neonicotinoid information postcards.

### 3. Use your local media

Media can help increase awareness of your issue at election time. The information below will help you to bring the issue of bee health to your local media in an effective manner. Here are three things you can do:

#### **Write a letter to the editor**

A letter to the editor can be an effective way to reach the public. The 'letters' section in newspapers provides a forum for public comment or debate. Your local media is a good place to start, but also consider agricultural, food related or environmental media as well. You can use a letter to the editor to:

1. Correct or clarify information or perceptions: If there is an article that you think carried the wrong message about neonicotinoid pesticides or had incorrect information, write a letter to the editor. Share your expertise on this topic and talk about how important it is that the next government make bees a priority.
2. Introduce or reinforce a message: If there is an article in your local newspaper that somehow relates back to bees and/or neonicotinoids, you can respond to that article and either introduce or reinforce the message about the need to protect bees and other pollinators. Use a newspaper article – whether positive or negative – as an opportunity to raise your issues.
3. Express an opinion or point of view: You can also write a letter to the editor even if your topic has not been covered lately in the news. In your letter, state that exposure to neonicotinoid pesticides is a real problem to pollinators and that the community needs to come together to raise this issue with local candidates at the upcoming provincial election.

#### **Contact a local journalist**

Journalists from local newspapers, radio and television stations are interested in hearing from local residents.

1. Take time to think about what you want the reporter to do. Do you want the journalist to write about your efforts to focus attention on bees and pesticides? Do you want to share your personal experience with bees and pesticides?
2. Remember that when you are talking to journalists anything you say could appear in print, on the radio or on TV. Before doing an interview with a reporter, always take time to write down two or three points you want to make – a stick to those points. Think about what questions they might ask and prepare an answer. There is no such thing as 'off the record'.
3. Speak from personal experience whenever you can. Don't provide facts you can't substantiate. For resources, check out the Frequently Asked Questions and Five Facts sheets attached. You can also go to [www.ontariobee.com/neonics](http://www.ontariobee.com/neonics) for more information and science.

## 4. Engage Others

One of the most effective things you can do to put bees on the election agenda is to reach out to your friends and community around this issue. The more people you can rally and the more diverse your group, the greater our chances of getting the attention of local candidates and party leaders.

Here are some things you can do:

### **Email:**

This is an easy way to get your message out. Use your contact list, and send your message to anyone you think would be interesting in helping make bees an election issue. If you put all your email addresses in the 'bcc' box you will avoid sharing your distribution list to everyone. Include your friends, family members and co-workers.

Personalize your message as much as you can. Encourage people to visit the [www.ontariobee.com/neonics](http://www.ontariobee.com/neonics) website to learn more, or send them information about our key messages.

### **Social media:**

If you are on Facebook or Twitter there are some things you can do:

Facebook:

- Visit the Ontariobee Facebook page and 'like' the relevant postings.
- Post your own information on bees and neonics.
- Post information on candidates and candidates meetings.

Twitter:

- Tell your twitter followers that bees and neonicotinoids need to be a priority for the next government. Use the hashtags #vote4bees, #voteON and #ONpoli to reach others. Add @ontariobee to your message.
- Retweet @ontariobee tweets.
- Follow @ontariobee
- Refer people to [www.ontariobee.com/neonics](http://www.ontariobee.com/neonics)

Do this frequently to keep the momentum going!

### **Demonstrations:**

- Attend local demonstration: make a placard, wear a bee suit, anything that will draw attention to the issue.

*Resources:*

## KEY QUESTIONS FOR CANDIDATES AND PUBLIC DEBATES

1. Health Canada and other studies have shown significant amounts of persistent neonicotinoid pesticides in water and soil samples across Ontario. With over 4 million acres treated annually with these pesticides, will your party declare this an urgent environmental problem?
2. The devastating losses of bees from neonicotinoid pesticides threatens our ability grow and consume local produce. But without bees we will have no local food. Will your party step in and ban neonicotinoids to protect our local food crops?
3. As a result of acute and chronic neonicotinoid pesticide poisoning, beekeepers are losing their bees and the productivity of their hives has been cut in half. Is your party willing to ban these toxic chemicals or are they just going to sit back and wait for another agricultural industry to fail?

## KEY DISCUSSION POINTS

1. **Neonicotinoid pesticides are what's killing our bees:** Health Canada via the Pesticide Management Regulating Agency (PMRA) has confirmed the link between neonicotinoids on corn and soy and bee kills in Ontario and Quebec in both 2012 and 2013.
2. **Science supports this contention:** Europe reviewed over 100 scientific papers before deciding to ban these pesticides. Since then over a dozen papers have been published from Europe, the UK, the U.S. and Canada identifying the negative impacts of neonicotinoid exposure on honey bees, wild bees, bumble bees, butterflies and birds.
3. **Beekeepers cannot escape the problem:** Ontario has a unique problem. Over 4.2 million acres of corn and soybean are grown in the province. There is no way to avoid exposure to these pesticides.
4. **Pesticides are being used indiscriminately:** 100% of Ontario's corn and 65% of soy acreage is treated with neonicotinoid pesticide whether the crops need it or not. Using a pesticide as a preventative breaks every rule of Integrated Pest Management (IPM).
5. **Best Management Practices are not the solution: dust is not the problem.** BMPs focus on the dust from planters. Dust exposure in the treated fields is only part of the problem and research is showing lethal amounts of neonicotinoids in spring flowering trees and shrubs adjacent to corn and soy fields and on water and soil in and near the corn and soy fields.
6. **The impact on Grain Farmers will be minimal.** Ontario government field crop specialists estimate that only 10% to 20% of acreage requires the application of neonicotinoid pesticides. Research in Europe is showing nil to only slight decreases in yield when neonicotinoids are not available.
7. **The Government of Canada cannot be counted on to do anything.** PMRA has stated that there registration review of neonicotinoids will not be completed before 2016 and likely 2018.
8. **The Province of Ontario can take the lead and act on its own.** While pesticide registration is a federal jurisdiction, under its Pesticide Control Act the province can suspend usage as they did with Ontario's Cosmetic Pesticide ban.





## POSITION STATEMENT

### CALLING FOR A MORATORIUM ON THE USE OF NEONICOTINOID PESTICIDES

The Ontario Beekeepers' Association has, since 1881, represented the interests of Ontario's beekeepers. Today, our members face excessive and unprecedented losses of colonies from the inappropriate use of neonicotinoid pesticide treated seeds on close to six million acres of Ontario cropland. Moreover, we are seeing the accumulation of these systemics in our soil and water leading to additional exposure to insects, birds and fish.

Therefore, to protect the health of bees, our ecosystems and the viability of Ontario's beekeeping industry, the OBA calls on the Government of Ontario to enact an immediate moratorium on the sale of neonicotinoid treated seeds on field crops in Ontario.

The widespread use of neonicotinoid seed treatments on vast acreages of field crops is not only putting the health of critical pollinators at risk, it is also discouraging farmers from using more pollinator-friendly practices like IPM and contributing to the evolutionary selection of resistant insects.

However, as members of the agricultural community, we recognize that the limited use of pesticides when used with Integrated Pest Management and in a targeted manner may be necessary in some situations. For this reason and in addition to the moratorium on the sale of neonicotinoid treated seed we support the following recommendations of the National Farmers Union.<sup>1</sup>

- Allow farmers to apply for one-time use of a neonicotinoid seed treatment only if they can:
  - a) Demonstrate through a soil test or monitoring program that their crop will be threatened by pest pressure and
  - b) Demonstrate that there are no alternative control options;
- Require that a permit be submitted to purchase neonicotinoid seed treatments, that the seed treatments be purchased separately from seed and that the cost of the seed and the treatment be listed separately when one-time use applications are approved;
- Monitor approved one-time use applications and publish a list of 'hot spots' where a significant number of farmers have applied to use neonicotinoid seed treatments;

Our call for a moratorium follows that of the European Commission, which banned neonicotinoids in 2013 after a thorough scientific review. It represents a viable option for protecting bees and other insect pollinators by restoring space for safe beekeeping, while removing the source of pesticides traces in our water and food. It is based on a considered position that balances the imperative of bee health with conditional use of neonicotinoids but *only* when Integrated Pest Management principles have been followed, there is proof that a pesticide application is needed and until a viable alternative is found.

In drafting this position we considered a number of factors, research and the best available peer reviewed science.

1. BEE POPULATIONS ARE DECLINING  
For the past seven years Ontario beekeepers have experienced serious losses due to acute bee kills, extensive overwintering losses, non-viable queens and weak unproductive colonies. Only through extensive management and costly replacement strategies have Ontario beekeepers been able to maintain colony numbers.
2. NEONICOTINOID PESTICIDES ARE KILLING OUR BEES  
PMRA reports confirmed the relationship of bee kills and neonicotinoid pesticide use in both 2012 and 2013. Much additional research from many other jurisdictions has been published that show that neonicotinoid pesticides are the major cause of recent bee population declines from both acute and chronic poisoning.<sup>ii</sup>
3. NEONICOTINOID PESTICIDES ARE PERSISTENT IN THE ENVIRONMENT, and will remain in soil and water for varying lengths of time, potentially impacting aquatic and other ecosystems. There is strong evidence that the widespread application of neonicotinoids is killing birds, fish and building residue in soils and water. In a March, 2013 report, the American Bird Conservancy stated that "less than one corn seed per day treated with any of the neonicotinoid insecticides is sufficient to cause reproductive abnormalities."
4. THE EXTENSIVE PLANTING OF NEONICOTINOID TREATED CORN, SOY AND WINTER WHEAT MAKES ONTARIO'S SITUATION PERILOUS AND UNAVOIDABLE FOR BEES AND BEEKEEPERS.  
Ontario Ministry of Agriculture and Food (OMAF)'s crop specialists have said that neonicotinoid seed treatments are currently used on almost 100 percent of Ontario's corn and canola acres, 80 percent of Ontario soybean acres and 35 percent of Ontario wheat acres. Based on the above percentages and the number of hectares of corn, soybean, wheat and canola planted in Ontario in 2011, over 50% of Ontario's cropland is being seeded with neonicotinoid treated seed. Much of the remaining crop land (23 %) is in hay production, as neonicotinoids are not registered for use in forage crop seed.
5. IN ONTARIO, NEONICOTINOID PESTICIDES ARE BEING USED INDISCRIMINATELY AND INCORRECTLY. Ontario crop specialists report that at most only 10 – 20% of corn and soy acreage actually need neonicotinoids and that's before using integrated pest management practices such as cover crops and crop rotation. Pesticides are not designed to be used as preventative treatment and yet they are being applied and sold indiscriminately without monitoring the fields in question.
6. THERE IS STRONG EVIDENCE THAT NEONICOTINOID PESTICIDES DO NOT PROVIDE ANY BENEFIT. IPM, BT and insect resistant seed hybrids can reduce or eliminate the need for neonicotinoid seed treatments. "Not every grower has soil insect pest problems. Even if there were problems in the past, it doesn't mean they are now, especially if insecticide seed treatments have been used in the same field over multiple years. If the soil pests are not at threshold and impacting yield, a seed insecticide is not necessary."<sup>iii</sup>  
  
The Center for Food Safety recently released a literature review of independent peer-reviewed studies completed in the U.S. and Canada on the use of neonicotinoid seed treatments. They concluded "in many cases, the compounds are not providing a yield or economic benefit to farmers."<sup>iv</sup>
7. CONTINUED INDISCRIMINATE USE OF NEONICS CAN RESULT IN PEST RESISTANCE. The widespread use of neonicotinoid seed treatment as a prophylactic, regardless of insect pressure, also acts as an evolutionary selection mechanism, killing susceptible insects while promoting the growth of resistant populations. This has already been documented with flea beetle populations in canola where Agriculture and Agri-Food Canada researchers found a shift toward a more resistant strain's
8. DUST REDUCTION IS MORE OF A DISTRACTION THAN A SOLUTION. While dust from corn seeding is a vector of exposure, recent efforts to contain dust from planting do not present a viable solution to

bee health. While the volume of dust exposure has been limited with new lubricants, the dust itself is now more concentrated and more toxic. Neonicotinoid laden dust continues to drift onto flowering plants, bushes and trees in adjacent fields.

9. GOVERNMENT ACTION IS REQUIRED TO RESTORE FREE MARKET CHOICE. Currently farmers requesting the latest high production hybrids are sold a bundled all-in-one product containing BT, fungicide and neonicotinoid pesticide coating. Seed and pesticide companies Monsanto (Dekalb), Dupont (Pioneer), Bayer and Syngenta control the manufacturing and distribution of Ontario corn, soy, wheat and canola seeds and neonicotinoid pesticide treatments. They continue to promote a bundled product containing high producing hybrids with pesticide coating as cheap insurance when only a fraction of farm acreage actually requires neonicotinoids.

## DISPELLING THE MYTHS: FIVE FACTS ABOUT NEONICOTINOIDS

**Fact One: The primary cause of Ontario's mass bee kills isn't varroa mites or other risk factors.** Bee health issues such as varroa and viruses, while significant, have been managed by beekeepers for many years, but beekeepers cannot manage neonicotinoid usage and exposure. It is important to understand that neonicotinoids are not separate from the other problems facing honey bees - exposure to these pesticides actually makes them worse. Science tells us that neonicotinoids compromise the bees' immune system, making them more vulnerable to viruses and varroa; they distort navigation, affecting the bees' capacity to forage; and they reduce the diversity of uncontaminated plants, compromising nutrition.

**Fact Two: The 2012 and 2013 bee kills were not an anomaly.** Canada's Pest Management Regulatory Agency (PMRA) confirmed that in 2012, 70% of the affected dead bee samples tested positive for residues of neonicotinoid insecticides used to treat corn seed. PMRA originally thought that the unusual early spring weather of 2012 were the cause of incidents of bee kills, and that it was linked to the dust created by planting treated corn in unusually dry conditions. However, the PMRA's most recent report on bee kills in 2013 revises that opinion: *"in spring 2013, with more typical weather patterns, we continued to receive a significant number of pollinator mortality reports from both corn and soybean growing regions of Ontario and Quebec, as well as Manitoba. Consequently, we have concluded that current agricultural practices related to the use of neonicotinoid treated corn and soybean seed are not sustainable."* We are concerned that we will experience the same, or worse, losses in 2014.

**Fact Three: Ontario's agriculture is different than other provinces.** Corn and soybeans make up more than 50% of Ontario's field crops, both of which are heavy users of neonicotinoid pesticides. In fact, corn uses at least double the neonicotinoid pesticides per acre than canola, for example, Alberta's main crop. We also know that neonicotinoid pesticides accumulate in the soil, increasing in intensification every year. Even untreated plants may take up residues of neonicotinoids still present in the soil from previous applications. Add to that the significant increase in use of neonicotinoids – a US study showed a nearly six-fold increase within six years – and what you have is a 'perfect storm' for bee decline in Ontario.

**Fact Four: New Best Management Practices are not enough to protect bees.** Neonicotinoids are systemic, water-soluble pesticides applied to seeds. While the dust generated from planting coated seeds can cause direct mortality of bees, only 2% of the active ingredients are released through the dust, the remainder is found in pollen, water and soil, creating acute and sub-lethal exposure throughout the season and for years to come. PMRA's original registration was based on research that measured impact on one-year application on virgin ground, they didn't take into consideration the cumulative impact of year-after-year applications. As well, neonicotinoids aren't reducing other pesticide applications, since many farmers apply foliar applications later in the summer, on aphids for example. And finally, stronger BMPs were developed by Health Canada this year, but we continued to see acute bee kills associated with the planting of neonicotinoid treated corn and soybeans. This would indicate that either the BMPs aren't working or that compliance is an issue.

**Fact five: Colony count doesn't measure the well-being of honey bees.** We measure the decline of honey bees by counting the losses of colonies that occur over the winter. In Ontario, 2012/13 winter losses amounted to 37.9% of colonies. This figure is very conservative, though, as it doesn't consider additional spring and summer losses that occur because colonies are weak from the sub-lethal effects of pesticides and cannot recover from winter damage. The fact that, despite these losses, the number of colonies has increased is due to the efforts of beekeepers to maintain their stock by dividing surviving colonies. However, the related costs of labour, new queens and the replacement of contaminated comb, estimated at \$500 per hive, significantly erode the ability of an Ontario beekeeper to make a living. As well, new hives are less productive pollinators and honey producers. Honey production is already down 6.5% since 2010 and some Ontario honey producers reported up to 50% less production last year.

We agree with PMRA's conclusion that current agricultural practices related to neonicotinoid use are not sustainable. Our concern is that Ontario's beekeeping industry will not survive another few years of such losses

## FREQUENTLY ASKED QUESTIONS (FAQ'S) ABOUT NEONICOTINOID PESTICIDES

**1. Q. How are you sure that the problem with bee decline is caused by neonicotinoid pesticides and not varroa mites, viruses, nutrition or loss of habitat?**

Bee health issues such as varroa and viruses, while significant, have been managed by beekeepers for many years, but despite their best efforts, beekeepers cannot manage neonicotinoid usage and exposure. As well, it's important to stress that neonicotinoids are not separate from the other problems facing honey bees – exposure to these pesticides actually makes them worse. By compromising the bees' immune system<sup>vi</sup>, bees are more vulnerable to viruses and find it more difficult to fight off varroa<sup>vii</sup>; by reducing their navigation skills, neonicotinoids affect the bees' capacity to forage and communicate forage opportunities to other bees<sup>viii</sup>; by reducing the availability of a diversity of uncontaminated plants, neonicotinoids compromise nutrition<sup>ix</sup>. Most recently, however, research from Harvard University<sup>x</sup> directly links neonicotinoid pesticides to Colony Collapse and winter losses. Bee health issues cannot be addressed in isolation from the impact of these pesticides, which is why we believe that suspending the use of these chemicals is central to any strategy to address the survival of honey bees.

**2. Q. Why do you say that honey bees have declined by 35% over the past three years when the number of colonies in Canada has actually gone up?**

We currently measure the decline of honey bees by counting the losses of colonies that occur over the winter. In Ontario, 2012/13 winter losses amounted to 37.9% of colonies compared to the pre-2007 (and pre-neonicotinoid) historical average of 15-18%<sup>xi</sup>. Nation-wide, the winter mortality rate rose to about 29 per cent of honey bees<sup>xii</sup>. The most recent information from an OBA survey for 2013/14 shows that forty percent of respondents lost more than half their hives this winter. However, the winter loss figure for Ontario is somewhat misleading, though, as it doesn't consider additional spring and summer losses that occur because colonies are weak from the sub-lethal effects of pesticides and cannot recover from winter damage.

- a. The fact that, despite these losses, the number of colonies has increased is primarily due to the efforts of beekeepers to maintain their inventory by dividing surviving colonies. However, the related costs of labour, new queens and the replacement of contaminated comb significantly erodes the ability of an Ontario beekeeper to make a living and deters new commercial beekeepers from entering the market. New hives, as well, are less productive pollinators and honey producers. OBA estimates the value of replacement and opportunity cost to be \$500, far higher than the \$105 being offered by OMAF to those who lose more than 40% of their colonies in 2014. A relevant indicator of the well being of the industry is honey production, which has declined by 32.6% in Ontario between 2012 and 2013, twice the national average.<sup>xiii</sup>

**3. Q. Neonicotinoid pesticides have been around since 2004 in Ontario, why is the problem just showing up now?**

There are a number of reasons why this problem is emerging now:

- a. Increased acreage of corn crop<sup>xv</sup> Although neonicotinoids are approved for use on many crops in Ontario, corn represents the most concentrated use. In 2004, the number of acres of grain corn in Ontario was 1.7 million acres. By 2012, this was up to 2.3 million acres, an increase of 34%, despite the fact that total cropland acreage has stayed the same over this period. As well, soybean crops, which use neonicotinoids significantly, have grown to 2.7 million acres: combined they represent more than 50% of Ontario field crops.
- b. Increased application of neonicotinoids. Although Canadian figures are not available, we know that North and South America represent 75% of the global market for treated seeds<sup>xvi</sup>, a market worth \$2.3 billion in 2012. In 2003, total pounds of neonicotinoid insecticides used in agriculture in the U.S. were less than 500,000 pounds.<sup>xvii</sup> By 2009, the use amounted to 3.3 million pounds, a 560% increase, which has likely increased since then. With only a 34% growth in grain corn crop size, does this mean that crops could be using more than three times the amount of neonicotinoids per acre than was used in 2003? And the pesticide industry expects that this market will double in the next five years.<sup>xviii</sup>
- c. Accumulation in soils and plants.

We know that neonicotinoid pesticides accumulate in the soil, increasing the intensification. The Environmental Protection Agency in the U.S. (EPA) reports that clothianidin, the neonicotinoid found in corn and canola, has a half-life of between 148 and 1,155 days depending on the soil type.<sup>xix</sup> Even untreated plants may take up residues of neonicotinoids still present in the soil from previous applications. The EPA also reports that clothianidin “has potential to leach to ground water and be transported via runoff to surface water bodies.”

**4. Q. Beekeepers in the Prairie Provinces are not reporting bee deaths related to neonicotinoids. Why are Ontario and Quebec the only provinces seemingly affected?**

There are significant differences between agriculture in the Prairie Provinces and agriculture in Ontario that may account for the different experience with neonicotinoid pesticides. Whereas corn, at 2.3 million acres, and soybeans, at 2.7 million acres, comprise more than 50% of Ontario’s field crops, Alberta, for example, grows one-twentieth the amount corn<sup>xx</sup> in twice the area of crop land, with canola comprising 25% of its field crops<sup>xxi</sup>. The relevance here is that corn uses two to four times the amount of neonicotinoid pesticide per acre than canola<sup>xxii</sup>. The intensive planting of crops that are heavy users of neonicotinoids in Ontario makes it difficult for commercial beekeepers to avoid exposure to these neurotoxins.

We are already seeing what might be the effects of this build up in some prairie provinces. Manitoba lost 46 per cent of its honey bee colonies in 2012/13, a record rate for the province.<sup>xxiii</sup> (No results yet for 2013/14) We believe Prairie beekeepers can anticipate the same experience as Ontario’s beekeepers if they continue to increase their corn crops<sup>xxiv</sup> and, as well, experience the inevitable toxic accumulation of neonicotinoids from current canola crops.

**5. Q. Is it accurate to say that the 2012 bee kills were an anomaly, a ‘perfect storm’ of early, dry windy weather?**

Canada's Pest Management Regulatory Agency (PMRA) confirmed that in 2012, 70% of the affected dead bee samples tested positive for residues of neonicotinoid insecticides used to treat corn seeds<sup>xxv</sup>. It was originally thought that the unusual early spring weather of 2012 were the cause of incidents of bee kills. These kills were linked to neonicotinoids associated with the large amount of dust created by planting treated corn in unusually dry conditions. Further, it was felt that better adherence to published Best Management Practices would prevent additional incidents.

However, the PMRA's most recent report on bee kills in 2013 revises that opinion: *"in spring 2013 with more typical weather patterns, we continued to receive a significant number of pollinator mortality reports from both corn and soybean growing regions of Ontario and Quebec, as well as Manitoba. Consequently, we have concluded that current agricultural practices related to the use of neonicotinoid treated corn and soybean seed are not sustainable."*<sup>xxvi</sup>

Due to the late spring, corn planting for 2014 has been delayed, so it is too early to tell whether 2014 will be Year Three of significant bee losses due to neonicotinoid poisoning.

#### **6. Q. Won't the new Best Management Practices (BMPs) encouraged by PMRA protect bees?**

The promotion of Best Management Practices (BMP) regarding the proper application of treated seeds has been put forward as a solution to the toxic exposure of bees to neonicotinoid pesticides. These suggested farming practices are aimed at reducing the dust associated with spreading neonicotinoids at planting and include adjustments and improvements to equipment and the use of new seed lubricants. In theory, BMPs are a good idea but are not the answer for protecting bees.

First, neonicotinoids are systemic, water-soluble pesticides applied to seeds. 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 coated seeds can cause direct mortality of bees, only 2% of the active ingredients are released through the dust,<sup>xxvii</sup> the remainder is found in pollen and also in water and soil, which are known to accumulate over an extended time period<sup>xxviii</sup> creating acute and sub-lethal exposure throughout the season and for seasons to come. 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.<sup>xxix</sup> Furthermore, the new seed lubricant from Bayer, which is touted to be the 'solution' to the dust problem has shown through their own research to reduce the dust by only 21%.

Second, despite the new guidelines, we continue to see the same, if not more, acute bee kills associated with the planting of neonicotinoid treated corn and soybeans. This would indicate that either the BMPs do not work or that compliance is an issue.

Integrated Pest Management (IPM), however, could be an effective strategy. It's goal is to utilize the least hazardous pest management options only when there is a demonstrated need and to take special precautions to reduce the danger to the environment.<sup>xxx</sup> Instead, neonicotinoid-treated seeds are applied prophylactically regardless of whether pests are present in a particular field or at levels that will lead to economic losses. In the opinion of Tracey Baute, Field Crop Entomologist from Ontario's Ministry of Agriculture and Food (OMAF):

*“We have seen the use of neonicotinoid seed treatment evolve from being used on those acres that needed it for specific pest problems, to being used on nearly 100% of corn acres and 65% of soybean acres in Ontario. Based on my experience, only 10 to 20% of the corn and soybean acres are actually at risk of most of the soil pests on the product labels. I recognize the ease that insecticide seed treatments have provided, but they are insecticides and should be used for that purpose. Growers not fitting into the high risk factors may not need insecticide seed treatment, and should consider trying fungicide-only seed next year.”<sup>xxxix</sup>*

**7. Q. What will happen to grain growers if neonicotinoid pesticides are banned? Will they suffer significant economic impact?**

A. Since virtually all corn seed planted in Ontario is now treated with neonicotinoids, whether they are needed or not, it is difficult to say exactly what the result of suspending the use of neonicotinoid pesticides would be. As stated above, only 10% to 20% of corn and soybean acreage is at risk of insect pests treated by neonicotinoids<sup>xxxix</sup>. Research demonstrates that preventive neonicotinoid seed treatments do not consistently result in successful management of key pests or crop yield benefits, which suggests that widespread use of treated seed is not warranted. As well, some growers we have talked to indicate minimal increase in yield per acre related to pesticides, barely offsetting the additional expense of treated seed (which has nearly doubled since 2002<sup>xxxix</sup>). Some point to improvements in soil nutrients, irrigation techniques and increased plant population density as more likely reasons for yield improvements.<sup>xxxix</sup>

In Italy, where neonicotinoid pesticides were banned for corn (maize) in 2008, the monitoring network, APENET has found that farmers' untreated maize 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.<sup>xxxv</sup> A similar US study also demonstrated only slight reductions in yields with untreated seeds.<sup>xxxvi</sup> Using figures provided by a representative from DuPont who stated, *“We did a lot of yield testing of these products and in corn it would be five bushels less without these products”*,<sup>xxxvii</sup> Ontario could anticipate, at the very worst, a 3.2% drop in production.<sup>xxxviii</sup>

**8. Q. Can we expect to see a quick and full recovery of bees and other pollinators if we ban neonicotinoid pesticides?**

If neonicotinoid pesticides are removed from all use, we would likely eliminate the mass bee kills at spring sowing that we experienced in 2012 and 2013 (and possibly 2014). However, it's important to note that the lasting and cumulative impact of neonicotinoids make an immediate 'bounce-back' of colonies unlikely. Neonicotinoid pesticides can linger in soil and water for years and be taken up even by untreated plants that are sowed in contaminated soil. Bees could still experience sub-lethal effects from the pollen and contaminated water. The experience in Italy, though, provides good evidence that within three years the bee populations showed signs of complete recovery from the effects of neonicotinoids.

Perhaps a more compelling question is 'what happens if we *don't* suspend the use of these chemicals?' How long can the beekeepers manage these losses before the industry collapses? What is the tipping point where our food production is threatened by the disappearance of honey bees, wild bees, and other pollinators?



**9. *I'm told the science about neonicotinoid pesticides and bee health is inconclusive. Shouldn't we wait until science can prove that neonicotinoids are the problem?***

Those who consistently call for more research tend to be those who would benefit from a delay and the continued use of neonicotinoid pesticides. In fact, there is currently a great deal of independent, peer reviewed science related to the effects of neonicotinoids on honey bees and other pollinators, aquatic insects and other wildlife, and the volume is growing. The OBA has seen more than 150 studies and has gathered some of the most recent and relevant research and resources on its website [www.ontariobee.com/neonics](http://www.ontariobee.com/neonics). In addition, we have evidence through scientific test results from Health Canada's Pest Management Regulatory Agency (PMRA) confirming the link between neonicotinoid pesticides used in corn and soybeans and the mass bee kills in 2012 and 2013.<sup>xxxix</sup>

But more to the point, shouldn't the burden of proof be on proving that neonicotinoid pesticides do *not* cause lethal and lasting harm? The European Union employed the United Nation's Precautionary Principle in their decision to suspend neonicotinoid pesticides for two years, "*When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.*" If Canada employed the precautionary principle, many toxic substances, contaminants and unsafe practices would not be produced or used the first place. The precautionary principle concentrates on prevention rather than mitigation.

**10. *Q. Shouldn't the OBA be working with farm groups or the Ontario Bee Health Working Group to come up with a solution that is acceptable to farmers and beekeepers?***

The OBA has always had positive relationships with Ontario's farmers and farm groups. Our bees pollinate Ontario fruit and vegetables and our members place their hives in farmers' fields. While many farmers understand and support our position some large agri-business groups like the Grain Farmers of Ontario believe "*if a decision on this important technology was to be made outside of the regulatory system, it would be unscientific and rash.*"<sup>xli</sup>

Our responsibility is to protect our members and our bees. Our position is based on independent peer-reviewed science. While we support finding acceptable alternatives, any delay in suspending the use of neonicotinoids on field crops puts our bees and our members' livelihoods at risk. Once these pesticides are banned we can determine whether there are ways to use them safely or to find alternatives. For example, neonicotinoids could be suspended for prophylactic use, but could be used on a permit basis by those farmers with a proven need.

**11. *If these products are so toxic to bees, why did the PMRA register them in the first place?***

In fact, neonicotinoid seed treatments were given only a temporary registration. PMRA is currently re-evaluating the uses of neonicotinoid insecticides. The regulatory body has stated their concern with current agricultural practices related to the use of neonicotinoid treated corn and soybean seed, saying that current practices are 'not sustainable'. Although the PMRA has recently reported that they have expedited the review to 2015 (from 2018), and have given it its "highest priority"<sup>xli</sup> the OBA is concerned that this will not be soon enough to save our bees.

<sup>i</sup> National Farmers Union Submission to Senate Standing Committee on Agriculture and Forestry on The Importance of Bees and Bee Health, May 1, 2014

<sup>ii</sup> Health Canada, Evaluation of Canadian Bee Mortalities in 2013 Related to Neonicotinoid Pesticides, Interim Report as of September 26, 2013

<sup>iii</sup> Taking Steps towards Reducing the Risk to Pollinators

by Greg Stewart, Corn Specialist, OMAFRA and Tracey Baute, Field Crop Entomologist, OMAF  
<http://www.gocorn.net/v2006/Insects/articles/Reducing%20the%20Risk%20to%20Pollinators.html>

<sup>iv</sup> Stevens, Sarah and Peter Jenkins, "Heavy Costs Weighing the Value of Neonicotinoid Insecticides in Agriculture", Center for Food Safety, March 2014. p. 4.

<sup>v</sup> "Neonicotinoid clothianidin adversely affects insect immunity and promotes replication of a viral pathogen in honey bees" National Academy of Sciences of the US. Gennaro Di Presco, et al. <http://www.pnas.org/content/early/2013/10/18/1314923110>

<sup>vi</sup> "Immune suppression by neonicotinoid insecticides at the root of global wildlife declines"

[http://www.gmfrecymru.org/pivotal\\_papers/JEIT-D-12-00001\\_proofs.pdf](http://www.gmfrecymru.org/pivotal_papers/JEIT-D-12-00001_proofs.pdf)

<sup>vii</sup> "Crop pollination exposes honey bees to pesticides which alters their susceptibility to the gut pathogen nosema ceranae"

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0070182#authcontrib>

<sup>viii</sup> "A common pesticide decreases foraging success and survival in honey bees."

[http://zembra.vara.nl/fileadmin/uploads/VARA/be\\_users/documents/tv/pip/zembra/](http://zembra.vara.nl/fileadmin/uploads/VARA/be_users/documents/tv/pip/zembra/)

2011/Moord\_op\_de\_honingbij/Bees-Pesticides-Henry-03-30-12-Science.pdf

<sup>ix</sup> "Are Neonicotinoids Killing bees?" <http://www.xerces.org/neonicotinoids-and-bees/>

<sup>x</sup> Sub-Lethal exposure to neonicotinoids impaired honey bees winterization before proceeding to colony collapse disorder.

Chensheng Lu, Kenneth M. Marchol, Richard A. Callahan. Bulletin of Insectology 2014

<http://www.bulletinofinsectology.org/pdfarticles/vol67-2014-125-130lu.pdf>

<sup>xi</sup> CAPA Statement on Honey Bee Wintering Losses in Canada (2013)

<http://www.ontariobee.com/sites/ontariobee.com/files/2013%20CAPA%20Statement%20on%20Colony%20Losses%20-%20final.pdf>

<sup>xii</sup> <http://www.cbc.ca/news/canada/huge-honey-bee-losses-across-canada-dash-hopes-of-upturn-1.1699198>

<sup>xiii</sup> Stats Canada. Table 001-0007 production and value of honey 2009-2013

<http://www.ontariobee.com/sites/ontariobee.com/files/honey%20statistics%202009-2012.xlsx>

<sup>xv</sup> OMAF Field Crop reports <http://www.omafra.gov.on.ca/english/crops/field/corn.html>

<sup>xvi</sup> <http://www.marketsandmarkets.com/Market-Reports/seed-treatment-market-503.html>

<sup>xvii</sup> [http://www.xerces.org/wp-content/uploads/2013/09/XercesSociety\\_CBCneonics\\_sep2013.pdf](http://www.xerces.org/wp-content/uploads/2013/09/XercesSociety_CBCneonics_sep2013.pdf)

<sup>xviii</sup> <http://www.marketsandmarkets.com/Market-Reports/seed-treatment-market-503.html>

<sup>xix</sup> EPA (Environmental Protection Agency) 2010. Pesticide Fact Sheet: Clothianidin

[http://www.epa.gov/opp00001/chem\\_search/reg\\_actions/registration/fs\\_PC-044309\\_30-May-03.pdf](http://www.epa.gov/opp00001/chem_search/reg_actions/registration/fs_PC-044309_30-May-03.pdf)

<sup>xx</sup> [http://www.statcan.gc.ca/pub/95-640-x/2012002/prov/48-eng.htm#Farm\\_area](http://www.statcan.gc.ca/pub/95-640-x/2012002/prov/48-eng.htm#Farm_area)

<sup>xxi</sup> <http://www29.statcan.gc.ca/ceag-web/eng/community-agriculture-profile-profil-agricole?geold=480000000&selectedVarIds=159%2C>

<sup>xxii</sup> EPA Pesticide Fact sheet: Clothianidin [http://www.epa.gov/opp00001/chem\\_search/reg\\_actions/registration/fs\\_PC-044309\\_30-May-03.pdf](http://www.epa.gov/opp00001/chem_search/reg_actions/registration/fs_PC-044309_30-May-03.pdf)

<sup>xxiii</sup> CAPA Statement on Honey Bee Wintering Losses in Canada (2013)

<http://www.ontariobee.com/sites/ontariobee.com/files/2013%20CAPA%20Statement%20on%20Colony%20Losses%20-%20final.pdf>

<sup>xxiv</sup> <http://www.businessweek.com/articles/2012-11-08/canadas-corn-belt-attracts-the-hot-money>

<sup>xxv</sup> Health Canada: Evaluation of Canadian /bee Mortalities that Coincided with Corn Planting in Spring 2012.

<http://www.ontariobee.com/sites/ontariobee.com/files/Evaluation%20of%20Canadian%20Bee%20Mortalities.ENG-1.pdf>

<sup>xxvi</sup> Health Canada, Pest Management Regulatory Agency: Action to Protect Bees from Exposure to Neonicotinoid Pesticides

[http://www.hc-sc.gc.ca/cps-spc/alt\\_formats/pdf/pest/part/consultations/ noi2013-01/noi2013-01-eng.pdf](http://www.hc-sc.gc.ca/cps-spc/alt_formats/pdf/pest/part/consultations/ noi2013-01/noi2013-01-eng.pdf)

<sup>xxvii</sup> 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>

<sup>xxviii</sup> Xerces Society: Beyond the Birds and the Bees. [http://www.xerces.org/wp-content/uploads/2013/09/XercesSociety\\_CBCneonics\\_sep2013.pdf](http://www.xerces.org/wp-content/uploads/2013/09/XercesSociety_CBCneonics_sep2013.pdf)

<sup>xxix</sup> Van Dijk, Tessa C, Van Staalduijn, Marja A, Van de Sluijs, Jeroen P. "Macro-Invertebrate Decline in Surface Water Polluted with Imadacloprid." May 2013 PLOS ONE <http://www.ontariobee.com/sites/ontariobee.com/files/neonicsandNetherlandswater2012.pdf>

<sup>xxx</sup> Field Crop News: Neonics or not on 2014 seed. <http://fieldcropnews.com/2013/09/neonics-or-not-on-2014-seed/>

<sup>xxxi</sup> <http://www.omafra.gov.on.ca/english/crops/field/news/croptalk/2013/ct-0913a1.htm>

<sup>xxxii</sup> Ibid

<sup>xxxiii</sup> Better Farming, October 2013 "Corn Profit Comparisons"

<sup>xxxiv</sup> Better Farming, October, 2013; "Looking for the right formula to grow high-yield corn crops in Ontario."

<sup>xxxv</sup> "Effects of coated maize seed on honey bees: APENET project

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

<sup>xxxvi</sup> The Western Producer: "No yield benefit from neonicotinoids: scientist" <http://www.producer.com/2013/05/no-yield-benefit-from-neonicotinoids-scientist/>

<sup>xxxvii</sup> <http://www.michiganbees.org/2013/pioneer-announces-neonicotinoid-free-seed-offering/>

<sup>xxxviii</sup> <http://www.omafra.gov.on.ca/english/stats/crops/ctygrcorn12.htm>

<sup>xxxix</sup> Health Canada, Action to Protect Bees from Exposure to Neonicotinoid Pesticides, September 13, 2013. [http://www.hc-sc.gc.ca/cps-spc/alt\\_formats/pdf/pest/part/consultations/ noi2013-01/noi2013-01-eng.pdf](http://www.hc-sc.gc.ca/cps-spc/alt_formats/pdf/pest/part/consultations/ noi2013-01/noi2013-01-eng.pdf)

<sup>xl</sup> <http://www.gfo.ca/protectingpollinators.aspx>

<sup>xli</sup> Mary Mitchell, Director PMRA in an interview on CBC "As it Happens" October 8, 2013