

# Five facts about neonicotinoids

**Dear editor:**

The Ontario Beekeepers' Association recognizes that issues surrounding the impact of neonicotinoids and bee decline are complicated and that people are hearing many different things, so we would like to take this opportunity to address some of the most frequent misunderstandings 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 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 was 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 four times as much neonicotinoid pesticides per acre than canola, 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 BMP's 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 BMP's 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 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 are reporting up to 50% less production this 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.

To review references for the facts in this article: [www.ontariobee.com/neonic-faq](http://www.ontariobee.com/neonic-faq)

**Dan Davidson, President,  
Ontario Beekeepers' Association**



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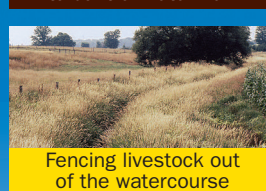
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