



Canadian Association of Physicians for the Environment

FACTSHEET: Neonics, Honey Bees and Food Security

What are Neonics?

- Scientists in Europe noticed a steep decline in insect populations between 1990 and 2000 and wondered if this decline was related to a new generation of pesticides that were introduced in the 1990s.
- The new generation of pesticides are neonicotinoids or “neonics”. They are now the most widely used insecticides in the world.
- They are most frequently used on corn, canola, soybeans, and dry beans.
- They are called systemic pesticides because they spread throughout the entire plant so they can be found in the pollen, nectar, and all other tissues of the plant. They are most often applied directly to the seeds.
- Animals that pollinate flowering plants - such as bees - are exposed through nectar and pollen or by the dust that is created when neonic-treated seeds are planted.



Photo: Daniel Tobias – Photo taken at Weir's Lane Lavender & Apiary, Dundas, Ontario

Canada's Honey Bees and Neonics

- In recent years, concerns have been expressed about the dramatic increases in the over-winter losses of honey bee colonies in Canada.
- In Ontario, which was hardest hit, beekeepers reported losing nearly 6 out of 10 colonies in the winter of 2013 and nearly 4 out of 10 in the winter of 2014.
- Health Canada's Pest Management Regulatory Agency investigated a number of colony losses in 2012 and 2013 and concluded that neonic pesticides were partially responsible.
- The other factors that can affect the health of bee colonies are parasites, habitat loss and diminished food supplies, and climate change and weather.

Task Force on Systematic Pesticides

- An international Task Force on Systematic Pesticides was established with a team of independent scientists from 15 nations on four continents.
- It spent four years reviewing over 800 peer-reviewed scientific studies to understand what was happening to the ecosystem and how neonic pesticides were involved.
- The Task Force's Worldwide Integrated Assessment found that neonics and Fipronil (a similar insecticide):
 - Are extremely toxic to most insects, spiders, and crustaceans such as crabs
 - Are moderately toxic to animals such as fish and birds
 - Can run-off or leach into ponds, ditches, streams and groundwater
 - Can be found in the nectar and pollen of treated crops and wild plants growing nearby
 - Are persistent so they can accumulate in the soil over time
 - Have been linked to large-scale losses of honeybee colonies
 - Harm bees at lower levels of exposure (i.e. impair learning, increase deaths, reduce fertility, and increase susceptibility to diseases)
- ***The Task Force concluded that neonics were likely to produce major negative effects on pollinators that are needed to ensure food supplies around the world.***



Photo: Daniel Tobias – Photo taken at Weir's Lane Lavender & Apiary, Dundas, Ontario

Jurisdictions Taking Action

- The European Food Safety Authority recommended reductions in the guidance levels for acceptable exposures for two neonic pesticides (acetamiprid and imidacloprid) because of evidence which suggests that they may harm the development of the brain.
- In January 2013, the European Union put a two year ban on the use of neonics in agriculture to allow their impact to be further assessed.
- In July 2014, the Ontario government passed legislation to decrease the number of acres planted with neonic-treated corn and soybean seed by 80% by 2017. The pesticides targeted are imidacloprid, thiamethoxam, and clothianidin. The Ontario government is aiming to reduce honey bee hive mortality rates to 15% by 2020.

For more information, see CAPE.ca

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