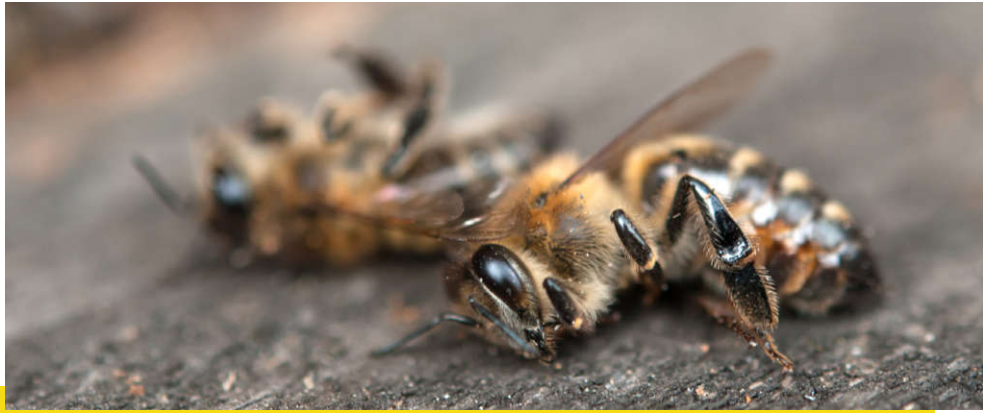




WHAT'S NEW ON NEONICS?



OVERVIEW

Neonicotinoid pesticides (“neonics”) are nicotine-based insecticides that target the central nervous system of insect pests. They are systemic pesticides, meaning they are absorbed by the plant and contaminate all plant tissues — roots, stems, leaves, flowers — as well as pollen and nectar. First introduced in the 1990s, neonics are now the most widely used insecticides in the world. Agricultural applications include seed treatments, soil treatments, and foliar sprays. Neonics are also used on trees, in insect treatments for animals, and in domestic and commercial turf products.

Neonics are toxic even at very low doses. They are water soluble and very persistent (i.e., do not readily degrade) in soil, resulting in sustained and chronic exposure in terrestrial and aquatic environments. Extensive and routine application of neonics in agriculture is causing large-scale environmental contamination and a significant threat to biodiversity.

EVIDENCE OF HARM

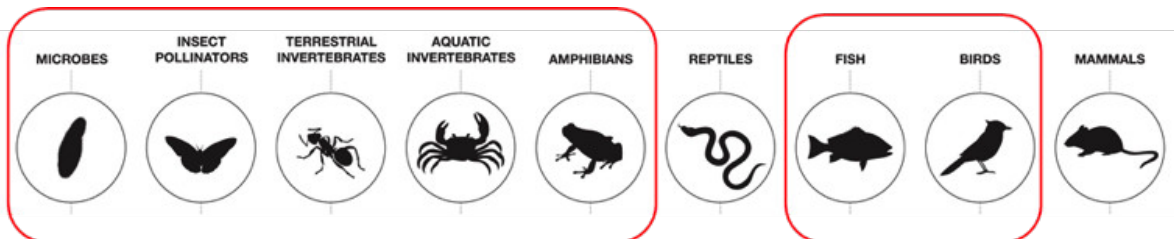
In 2015, the Task Force on Systemic Pesticides (tfsp.info) — an international group of independent scientists convened by the International Union for Conservation of Nature — produced a comprehensive meta-analysis of the science on the ecological effects of neonicotinoids. This landmark review, which considered more than 1,100 peer-reviewed studies, as well as data from manufacturers, identified clear evidence of harm to honeybees, along with a large number of other beneficial species, including aquatic insects at the base of the food chain, soil arthropods such as earthworms and common birds.

In 2017, the Task Force updated its meta-analysis to take into account hundreds of new peer-reviewed studies on systemic pesticides in the environment and their ecological effects. **The new meta-analysis reveals broader impacts and reinforces the conclusions of the original 2015 review: neonics represent a major worldwide threat to biodiversity and ecosystems / ecosystem services.**



Ecosystem services are the benefits provided by ecosystems that contribute to human well-being. For example, insect pollinators help plants produce fruit and vegetables that make up one third of our diet. The commercial value of bees to the pollination of crops in Canada exceeds \$2 billion annually.

Neonics Harm Numerous Beneficial Species



¹The Worldwide Integrated Assessment of the Effects of Systemic Pesticides on Biodiversity and Ecosystems was published in a special edition of the journal *Environmental Science and Pollution Research* in January 2015, available online at <https://link.springer.com/journal/11356/22/1/page/1>.

NEONICS IN CANADA

Clothianidin, imidacloprid and thiamethoxam are the most widely used neonics in Canada. Clothianidin has been among the top 10 insecticides sold in Canada over the past decade.

In June 2012, Health Canada's Pest Management Regulatory Agency (PMRA) initiated a re-assessment of risks to pollinators from imidacloprid, clothianidin and thiamethoxam. The target date for publication of the pollinator risk assessments and proposed regulatory decisions is December 2017, with final regulatory decisions to follow in December 2018.

Number of Neonic Products Registered for Use in Canada, by Active Ingredient

Active Ingredient	Products Registered	New Product Applications	Annual Sales by kg of A.I. †
Acetamiprid	7	2	< 50,000
Clothianidin	16	22	>1 00,000
Dinotefuran	0	8	n/a
Flupyradifurone	3	4	n/a*
Imidacloprid	97	28	> 50,000
Sulfoxaflor	5	7	< 50,000
Thiacloprid	2	0	< 50,000
Thiamethoxam	23	40	> 50,000
Total	153	111	> 200,000

Source: Health Canada, Pesticide Products Information Database (consulted September 11, 2017) and Pest Control Products Sale Report for 2014.

† Health Canada does not report sales of neonics-treated seeds; therefore, the sales data presented here exclude this major use.

* Flupyradifurone was registered in Canada in 2015; no data on sales after 2014 are available.

Separately, in November 2016, the PMRA completed a routine re-evaluation of imidacloprid, excluding pollinator risks. The proposed decision states, "The environmental assessment showed that, in aquatic environments in Canada, imidacloprid is being measured at levels that are harmful to aquatic insects. These insects are an important part of the ecosystem, including as a food source for fish, birds and other animals. Based on currently available information, the continued high volume use of imidacloprid in agricultural

areas is not sustainable."² The PMRA has proposed a three-to-five-year phase-out of all agricultural uses of imidacloprid, and for most other outdoor uses. Public consultations on the proposed imidacloprid decision generated tens of thousands of comments in support of an accelerated phase-out. The PMRA target date for issuing the final decision on the imidacloprid re-evaluation is December 2018.

In light of the conclusions of the imidacloprid risk assessment, the PMRA initiated special reviews of the other two neonics widely used in agriculture: clothianidin and thiamethoxam. The PMRA target date for issuing proposed decisions in these reviews is June 2018, with final decisions to follow in June 2019.

In Ontario, regulatory restrictions on the use of neonics-treated corn and soybean seed entered into effect in 2015. In Quebec, draft regulations published on July 19, 2017, would introduce similar restrictions on neonics-treated seed, but across all major field crops. Quebec is also proposing restrictions on other agricultural uses of neonics. Montreal and Vancouver adopted bylaws in 2016 banning all uses of neonicotinoids within City limits.

INTERNATIONAL DEVELOPMENTS

In 2013, the European Union imposed a moratorium on imidacloprid, clothianidin and thiamethoxam on bee-attractive crops, and is now considering a proposal to extend it to all neonics. France's new biodiversity law includes a provision to ban all agricultural uses of neonics starting in September 2018.

"Only a tiny fraction [of pesticide use] serves its purpose to fight pests. The rest [...] contaminates the environment."

- Task Force on Systemic Pesticides, 2017

CONCLUSION

Recent scientific studies confirm the need for swift action on neonics to prevent further environmental contamination and protect biodiversity. The David Suzuki Foundation urges federal and provincial decision-makers to phase out all neonics without further delay.

September 2017



²Health Canada. Proposed Re-evaluation Decision PRVD2016-20, Imidacloprid. November 23, 2016.