



February 7, 2022

TO LEGISLATORS DISCUSSING H. 626 TO REGULATE THE USE OF NEONICOTINOID PESTICIDES

Below are just a handful of the thousands* of studies demonstrating that, not only are neonicotinoid pesticides extremely harmful to ecosystems, but they are also unnecessary because they don't increase yields of soy and corn. These independent studies are in scientific journals or in reports from well-respected academic institutions as opposed to the studies done by the pesticide industry, which has a vested interest in promoting these products. *The study in Ontario was, in fact, funded by the Grain Farmers of Ontario.* [The environmental risks of neonicotinoid pesticides: a review of the evidence post 2013](#)

Some have argued that studies not done in Vermont are invalid. This notion is speculation. The properties of neonics are well known and not in dispute: they are extraordinarily toxic to insects, systemic, water soluble, contaminate soil and flowering plants and are long-lasting in the environment. In Vermont, thousands of pounds per year of neonics are used on corn and soy. In 2015 AAFM estimated that 8270 pounds per year were used on 100,000 acres of corn.* Even if the amount of neonics on seeds has halved since then (as suggested in testimony), that still means that 4100 pounds per year are used in Vermont on corn. *[NEONICOTINOID PESTICIDES; SAFETY AND USE](#)

There is no reason to expect that Vermont is immune from neonicotinoid contamination when states such as New York and Pennsylvania and the Province of Quebec have studies or reports demonstrating harm. In fact, Heather Darby from UVM Extension stated that "neonics are present throughout the ecosystem" and that the way they are being used isn't sustainable.

In 2018, the European Union expanded their ban on the use of neonicotinoids to include ALL FIELD CROPS. Leading European neonic expert, Dr. David Goulson, explains that the absence of neonic-treated seeds does not appear to have affected production of crops; and where data is available, as it is in the UK, the weight of insecticide use is also down. [European Union expands ban of three neonicotinoid pesticides | Science | AAAS](#)
<https://on.nrdc.org/3svzmBG>

We urge you to take a look at some of these studies and to pass legislation that requires rules requiring Integrated Pest Management for treated seed. This would result in a substantial reduction in their use, and it is good public policy to follow the science. Thank you.

UNPRECEDENTED TOXICITY. Neonicotinoids are much more toxic to pollinators than other insecticides. One teaspoon is enough to kill 1.25 billion bees. [Neonicotinoids and bees: what is](#)

[the fuss all about? : Dave's blog](#). And approximately 5% of the neonicotinoid active ingredient is taken up by crop plants and most instead disperses into the wider environment. [The environmental risks of neonicotinoid pesticides: a review of the evidence post 2013](#)

According to a recent analysis, **toxicity to insect populations has increased 48 times since neonicotinoids became the insecticide of choice.** "The types of synthetic insecticides applied to agricultural lands have fundamentally shifted over the last two decades . . . to a mix dominated by neonicotinoids and pyrethroids. . . [neonicotinoids] are considerably more toxic to insects and generally persist longer in the environment. . . " Neonicotinoids accounted for nearly 92 percent of the increased pesticide toxicity to insects from 1992 to 2014. [An assessment of acute insecticide toxicity loading \(AITL\) of chemical pesticides used on agricultural land in the United States](#)

"Now, about 20 years after their introduction, ubiquitous use of three main neonicotinoid active ingredients (imidacloprid, clothianidin, thiamethoxam) is **increasing the toxic load** of agricultural landscapes, forests, and other ecosystems throughout the world, posing threats to beneficial insects and other sensitive taxa." [Opinion: Neonicotinoids pose undocumented threats to food webs | PNAS](#)

NEW YORK STATE, PURDUE, ONTARIO GRAIN FARMERS, QUEBEC MINISTRY OF AGRICULTURE: SERIOUS RISK, INSIGNIFICANT BENEFITS. Recent studies show that neonic-treated seeds rarely provide a benefit. A 4-year study by Purdue found that **IPM achieved 95% lower insecticide use with no effect on corn**, a 129% increase in flower visitation by pollinators and 26% higher yield in watermelon. [IPM reduces insecticide applications by 95% while maintaining or enhancing crop yields through wild pollinator conservation | PNAS](#)

A 400- page Cornell report found that "trials comparing neonicotinoid-treated corn and soybean seeds to no insecticide controls **rarely found a significant effect on yield.**"

Ontario and Quebec have implemented IPM (need must be demonstrated before use is authorized) for neonic seeds. A five-year study in 84 fields in Quebec found that "92.6% of corn fields and 69.0% of soybean fields had less than 1 wireworm per bait trap. However, no significant differences in plant stand or yield were observed between treated and untreated corn or soybeans during the study. This study shows that **neonicotinoid seed treatments in field crops in Quebec are useful in less than 5% of cases**, given the very low level of pest-associated pressure and damage, and that they should not be used prophylactically. Integrated pest management (IPM) strategies need to be developed for soil insect pests to offer effective alternative solutions to producers." [Impacts of neonicotinoid seed treatments on soil-dwelling pest populations and agronomic parameters in corn and soybean in Quebec \(Canada\)](#)

A 4-year study in Ontario* found infrequent crop injury and absence of consistent benefit from neonicotinoid seeds. Of 129 and 31 corn and soybean sites, **only 8% and 6% respectively benefited from neonic seed use and the costs of treated seeds were recovered at only 48% and 23% of corn and soybean sites respectively.** [Quantifying Early-Season Pest Injury and Yield Protection of Insecticide Seed Treatments in Corn and Soybean Production in Ontario, Canada | Journal of Economic Entomology | Oxford Academic](#) *

***Funded by the Grain Farmers of Ontario and, in part, through Growing Forward 2 (GF2), a federal-provincial-territorial initiative.**

NEW YORK STATE: DRAMATIC LEVELS OF WATER CONTAMINATION. Scientist Pierre Mineau studied the use of neonics in New York State and found that: "imidacloprid when detected was present at levels above the USEPA chronic aquatic benchmark level of harm to aquatic resources **90-100%** of the time. . .and that sites with multiple detections of imidacloprid show that most 'grab samples' underestimate true water concentrations – a well-documented deficiency of water sampling programs." Is it possible that VAAFMs using grab samples? <https://www.nrdc.org/sites/default/files/testimony-dr-pierre-mineau-s2288-20190606.pdf>

LACK OF LEADERSHIP AT THE FEDERAL LEVEL. The Environmental Protection Agency determined in 2014 that "Published data indicate that in most cases there is **no difference in soybean yield when soybean seed was treated with neonicotinoids versus not receiving any insect control treatment.**" Despite this finding 8 years ago, EPA continues to allow the prophylactic use of neonic-treated soybean seed. As noted above, studies have also documented that neonic seeds are equally ineffective at increasing corn yield. [Benefits of Neonicotinoid Seed Treatments to Soybean Production | US EPA](#)

NEW YORK STATE: TREATED SEEDS COST MORE THAN UNTREATED. The Cornell Report finds that **untreated corn seeds cost \$20.15 less per acre than neonic-treated seeds**, and fungicide-only seeds cost \$6.80 less (see p.128). The prices are those provided by Bayer CropScience—now likely the largest U.S. corn seed manufacturer after acquiring Monsanto—for a 2018 study (p. 141-142). For soybeans, the Cornell Report finds untreated seeds cost \$20.70 less than neonic-treated seeds, and fungicide-only seeds cost \$5.10 less based upon farm-level data from independent research (p. 146). Similarly, a 2014-15 Iowa study estimates the additional cost of neonic soybean seed treatments at \$10-15 an acre <https://pollinator.cals.cornell.edu/sites/pollinator.cals.cornell.edu/files/shared/documents/0727%20Accessible%20Neonicotinoid%20Assessment%20compressed.pdf>

ENGLAND: THE EUROPEAN BAN IS WORKING. "Overall, 6 years after neonicotinoids were banned on flowering crops in Europe, the evidence to date suggests that there has been no measurable negative impact on crop production or on the environment." from a letter by Dave Goulson, UK bumblebee scientist to Governor Cuomo. Goulson debunks the claim that more toxic pesticides will be used if neonics are banned. [Goulson letter 1/28/2020](#)

PENN STATE: NEONICS DON'T KILL SLUGS, BUT DO KILL THEIR PREDATORS. "Our research reveals that neonicotinoids **can indirectly increase slug damage to crops by poisoning insects** that eat slugs. As a result, crop yields are lower." According to Tooker, their results also confirm that predatory insects can provide significant control of slugs.

"In our lab work, we found that slugs were unaffected by the fungicides and also unaffected by the neonicotinoid insecticides, likely because they are mollusks and not insects," said Tooker. "But the slugs did transmit the insecticide to the ground beetles, impairing or killing more than 60 percent of the beetles."

In the field, the team found that the neonicotinoid treatments depressed activity of insect predators, thereby relaxing predation of slugs and reducing soybean densities by 19 percent and crop yield by 5 percent. **"Slugs are among the most challenging pests faced by Mid-Atlantic no-till growers,"** said Tooker. "Our research reveals that neonicotinoids can indirectly increase slug damage to crops by poisoning insects that eat slugs. As a result, crop yields are lower."

According to Tooker, their results also confirm that predatory insects can provide significant control of slugs. "This phenomenon dispels the common belief in the United States that insect predators do not contribute to slug control," he said. "It also emphasizes that if growers care for these predator populations they can help with slug control."

The USDA's Northeast Sustainable Agriculture Research and Extension program, the Pennsylvania Department of Agriculture and the Maryland Grain Producers Utilization Board supported this work. <https://www.psu.edu/news/research/story/insecticides-foster-toxic-slugs-reduce-crop-yields/>

QUEBEC: ALTERNATIVE CONTROL FOR WIREWORMS EXISTS. Pest management of wireworms does not require the prophylactic use of neonicotinoids and in cases where pest densities are high, alternatives to insecticides exist. Some approaches are still being tested, such as mass trapping of adult wireworms with light traps [104], crop rotations with brown mustard or buckwheat [105], attraction to insecticide-treated wheat grown between untreated potato rows [106]; they represent alternative control measures that are under development in Canada. [Impacts of neonicotinoid seed treatments on soil-dwelling pest populations and agronomic parameters in corn and soybean in Quebec \(Canada\)](#)

MINNESOTA, ILLINOIS: WILDLIFE HAS ACCESS TO NEONICOTINOID-TREATED SEEDS DURING SPRING PLANTING. Neonicotinoid-treated seeds could be available to wildlife through spillage or exposed seeds near or at the soil surface due to incomplete or shallow drilling. . . Exposed seeds were present at the soil surface in 35% of 71 fields. . . Over a dozen species of birds and mammals consumed seeds at simulated spills. . . Seeds are abundant on the soil surface for wildlife to consume during the spring planting season and should be considered in pesticide risk assessments. [Multi-scale availability of neonicotinoid-treated seed for wildlife in an agricultural landscape during spring planting](#)