We agree with The Task Force on Systemic Pesticides 2017 “Worldwide Integrated Assessment of the Effects of Systemic Pesticides On Biodiversity & Ecosystems,”

“The [ecosystemic] consequences of losing the invertebrate fauna due to continuous exposure to ubiquitous residues of neonicotinoids ... are thus far reaching and cannot be ignored any longer.”

Reduced Foraging and Flight Distance

A study published April of 2017 found bees that consumed “a single sublethal dose of Thiamethoxam ... foragers showed excitation and significantly increased flight duration and distance... Chronic exposure significantly decreased flight duration... distance... and average velocity... These results provide the first demonstration that acute or chronic exposure to a neonicotinoid alone can significantly alter bee flight. Such exposure may impair foraging and homing, which are vital to normal colony function and ecosystem services.” For beekeepers this results in: bees lost and dead in the field, and poor honey production from ones that come home drunk and disoriented.

Low dose of neonicotinoid insecticide reduces foraging motivation of bumble bees. Neonicotinoid concentrations of 1 ppb, often reported in plant nectar near agricultural lands, can thus affect the foraging behaviour of bumble bees. Even without a notable impact on flight performance and learning, a reduction in foraging motivation could explain the poor performance of colonies of bumble bees exposed to neonicotinoids.


CURTAIN HONEY BEE LOSSES

SUPPORT OUR WORK TO Secure a Moratorium of Neonicotinoid Pesticides

Make your tax deductible contribution today

832.727.9492 pollinatorstewardship.org
Beekeepers generally acknowledge scientific knowledge almost always follows, not leads, what we observe in our hives. Beekeepers have been reluctant to point at any single factor as the cause of our fourteen years of heavy colony losses. If our hives die, we generally blame ourselves that we somehow did not feed enough, or treat for Varroa mites soon enough, or treat for nosema on time, or we had viruses out of control or our bees did not forage well. Is it possible that everything we just mentioned has a common trigger? We are convinced the class of pesticides known as neonicotinoids along with their companion pesticides, either cause or exacerbate most of the issues beekeepers are experiencing in their colonies. With the exception of Imidacloprid (which has been almost exclusively used on non-bee attractive plants from 1998 through 2003) other Neonicos were registered for wide agricultural use late in the fall of 2003. By the spring of 2006 the whole world knew something was drastically amiss in the US bee population.

**Picky Eaters**

A University of California- San Diego study determined bees exposed to Imidacloprid would not forage on low sugar content flowers: hey became “picky eaters.” “James Nieh, a professor of biology at UC San Diego, said: “In 2006, it (Imidacloprid) was the sixth most commonly used pesticide in California and is sold for agricultural and home garden use. It is known to affect bee learning and memory . . . we discovered that the treated bees also danced less … between fourfold and tenfold … The picky honey bees brought back dramatically reduced resources to the colony, which led to an overall smaller food store.” The bottom line for beekeepers: reduced honey crop and overwinter stores.

### Reduced Thermal Regulation

A study released in October 2016 determined that Thiamethoxam “…elicited a decrease in temperature . . . alterations in thermal regulation caused by Thiamethoxam may affect foraging activity and a variety of in hive tasks, likely leading to negative consequences at the colony level…” Bottom line for beekeepers: reduced honey crops and dead hives after cold snaps.


### Thiamethoxam and Clothianidin Significantly Reduce the Reproductive Capacity of Male Honey Bees

A just released study implicates clothianidin and thiamethoxam as a culprit. “…here we show that two neonicotinoids (4.5 ppb thiamethoxam and 1.5 ppb clothianidin) significantly reduce the reproductive capacity of male honey bees (drones)....Our results demonstrate for the first time that neonicotinoid insecticides can negatively affect male insect reproductive capacity, and provide a possible mechanical explanation for managed honey bee queen failure and wild insect pollinator decline.”


The Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) guidelines are to register pesticides and label them to mitigate risk, so the pesticides prevent unreasonable risk to the environment. However, the manner in which one uses their property (i.e. application of pesticides) should not damage the property of others. The use of Neonics damages the property (land, crops, bees) of others.