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Lament for the Honeybee

TAGS

bees | clothianidin | colony collapse disorder | honeybees



As this priceless pollinator vanishes from the face of the earth, North American regulators refuse to protect it from a known toxin

The crop chemical clothianidin, approved almost five years ago by the Pest Management Regulatory Agency, (PMRA) a division of Health Canada, has since its approval been found to be [very highly toxic to the honeybee](#), *apis mellifera*. Despite knowing this for at least four years, the PMRA has kept the product's temporary license in place. So it continues to be used! Clothianidin is a member of the chemical family, neonicotinoids, used, among other things, to treat canola seed to ward off flea beetles. Another family member, imadacloprid, has been used in Canada for years. In 2004, the PMRA and its American counterpart, the Environmental Protection Agency, jointly reviewed [data on clothianidin](#). In addition to their conclusion of very high toxicity, they found that other studies into the question had been "deficient in design." Those studies found the product had "no significant impact" on the bees. Despite all of this, a PMRA regulatory officer, Iulia Popa, insisted in email exchanges with [Paths Less Travelled](#), beginning last September, that there had been "Rigorous pre-market evaluation processes. The current scientific consensus is that residues of neonicotinoids do not pose a serious threat to honey bees or other pollinators." Addressing this apparent contradiction, Ms. Popa explains, the PMRA also considered the amount of chemical the bees are subjected to. If used in spray form, concentrations might be a problem. But, "as a seed treatment (the registered use in Canada) concentrations are not likely to cause acute mortality or other short-term effects."

But the 2004 report sounds [another cautionary note](#):

"Questions remain about the possibility of long-term effects on honey bee colonies. A chronic, multi-generation field

study has been requested to clarify this risk."

In recent years, honeybees have been vanishing in huge numbers, around the world. Authorities have dubbed this phenomenon, "[Colony Collapse Disorder](#)." They paint CCD as an extremely complex problem, because it may be caused by mites, parasites, viruses, malnutrition, stress, pesticides, lack of biodiversity, or a combination of some or all of these. Scientists and researchers far and wide have gone into overdrive, trying to solve the "mystery." But, of all the countless studies into this, those that do not implicate pesticides are rare. [Last spring, Germany's Federal Office of Consumer Protection and Food, suspended use of neonicotinoids, until further notice.](#)

The move followed a huge die-off of honeybees in Germany where clothianidin had been sprayed. Up to two-thirds of the colonies in one region were lost. Tests showed the chemical present in the bodies of many dead bees. France, Italy and Slovenia have now imposed suspensions similar to Germany's. In North America, however, it's a starkly different story.

South of the border, The U.S. Environmental Protection Agency authorized the use of neonicotinoids about four years ago. This fall, a major U.S. environmental group, the Natural Resources Defense Council, [took the EPA to court](#) to force it to publicly release studies, which may shed more light on their effects on honeybees.

But some of those studies are already on the Agency's website. They are similar to the ones referred to earlier, but go into more detail. One reads:

"Clothianidin is highly toxic to honey bees on an acute contact basis.

It has the potential for toxic chronic exposure to honey bees, as well as other non-target pollinators, through the translocation of clothianidin residues in nectar and pollen.

In honey bees, the effects of this toxic chronic exposure may include lethal and/or sub-lethal effects in the larvae and reproductive effects in the queen."

Despite all of this, the EPA insists there's still not enough evidence to ban these products. In a news release this summer, curiously entitled "EPA Acts to Protect Bees," it claims the incident in Germany doesn't fit the profile of Colony Collapse Disorder. For example, in typical cases of CCD, bees just disappear. In the German case, the bodies were found (with clothianidin in their tissues). The EPA also notes that the formulation in question did not contain a polymer coating, which keeps the chemical stuck to the seed.

The Agency promises, if more information comes to light, to "examine our practices with respect to label requirements for seed treatment pesticides."

Scientific consensus?

Meanwhile, the internet is [full of articles by credible scientists](#), implicating these products in the deaths of honeybees. For example, in the spring of last year, an article called "Requiem for the Honeybee" appeared online with the subtitle, "Neonicotinoid insecticides are harmful to the honeybee!" It goes on to say, flatly, widespread applications of the neonicotinoids are "highly toxic to insects including bees at very low concentrations."

The author, Prof. Joe Cummins, is a geneticist at the University of Western Ontario. He is also an adviser to the international, non-profit "[Institute of Science in Society](#)." Unlike either the PMRA or the EPA, which believe the chemicals have not played a role in CCD, Cummins writes, "A team of scientist led by the National Institute of Beekeeping in Bologna, Italy, found that pollen obtained from seeds dressed with imidacloprid contains significant levels of the insecticide, and suggested that the polluted pollen was one of the main causes of honeybee colony collapse." Not only does the PMRA continue to license the chemicals in question, it approved a similar product "Movento" (another Bayer product) just this summer. It is suspected of having the same effects!

An American environmentalist with the Natural Resource Defence Council, goes further. He says "Movento" is even worse than clothianidin. The headline in the October 9th edition of the Manitoba farm paper, Co-operator reads, reads, "New systemic insecticide (Movento) worries beekeepers."

Earlier this year, the Co-operator reported that commercial honey producers in Canada lost over a third of their colonies last winter.

Beekeepers in Atlantic Canada, where the neonicotinoids are used on potato crops, are among the hardest hit by these losses in Canada so far. Meanwhile, Manitoba beekeepers are also being hit. And they are not far behind the national average. An apiarist with the Government of Manitoba, Rheel Lafreniere, says normal winter losses would be less than 20%. Last winter, they approached 30%! But he too says the losses in this province do not "fit the profile" of CCD.

Honeybees - a History

Honeybees appeared on earth **more than 100 million years ago**. For centuries, beekeepers have known their value as makers of honey, the world's first sweetener that **never spoils**. It has even been found in Egyptian tombs. Honeybees are the world's best pollinators of food crops, ranging from apples to blueberries to cucumbers. Without them, these plants would simply not produce. It is believed that fully one third of the human diet comes from plants pollinated by insects, mostly honey bees. As the bees fly from flower to flower, gathering nectar, pollen sticks to their legs and is then deposited on other plants. The fertilization cycle is thus completed. While figures for Canada are not immediately available, the US Department of Agriculture estimates the products bees produce there are worth \$15 billion dollars a year. Recently, the annual Earthwatch debate in the UK actually voted the bee the most valuable species on the planet. In the words of one debater there, Dr. George McGavin of Oxford University, "Bees are irreplaceable. Their loss will be catastrophic."

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(Photo by the Guardian newspaper, UK)

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COMMENTS

JBL wrote on February 23, 2009, 04:20PM : ▶

Modern Man conquers nature.

Do we really want to be part of the demise of bees and bats in our life time?

Bees and bats have been around before we came onto the scene but it has taken only a few years of "modern technology" from the hands of scientists to start the process of vanquishing these much needed species.

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