

Neonic threshold called 'overly conservative' | The Western Producer

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Bayer questions PMRA's decision to set safe levels at 1.5 parts per trillion in its ban proposal; it's 50 p.p.t. in the U.S.

If the highway speed limit in Canada was 15 km-h, it's likely that the number of speeding tickets would increase.

In the same vein, Health Canada has selected a low number it deems to be an acceptable amount of neonicotinoid insecticides in water bodies.

For clothianidin, a Bayer insecticide, Health Canada scientists decided the acceptable level is 1.5 parts per trillion for long-term exposure to the chemical, although in a later email the department changed that to 20 p.p.t.

These limits explain why ponds and wetlands in Canada often have levels of neonicotinoid insecticides that are above the "level of concern."

"Recent water monitoring data show that clothianidin is being detected in Canadian surface waters at concentrations that frequently exceed the level of concern for chronic adverse effects on aquatic invertebrate," Health Canada said in its full report on the risk of clothianidin to aquatic insects.

On Aug. 16, Health Canada's Pest Management Regulatory Agency proposed to ban all outdoor uses of clothianidin and thiamethoxam, a Syngenta product, because of an unacceptable risk to aquatic insects such as mayflies and midges. The neonicotinoids are applied to almost all the corn and canola seed in Canada and a portion of the soybean crop. The products can move from the soil to nearby wetlands, ponds and creeks.

After looking at the available research, PMRA scientists concluded:

- The threshold to protect 95 percent of all aquatic invertebrates from chronic exposure to clothianidin is 0.0015 ug/L, or 1.5 p.p.t.
- For acute exposure to clothianidin, the PMRA threshold is 1.5 parts per billion.

In comparison, the U.S. Environmental Protection Agency uses 50 p.p.t. as the acceptable, chronic exposure to the neonic.

"The PMRA chronic reference value for clothianidin of (1.5 p.p.t.) ... is more than an order of magnitude lower (more sensitive) than the USEPA's unbound reference value of (50 p.p.t.)," the PMRA says in its report.

Bayer believes that 1.5 parts per trillion is a remarkably low threshold for clothianidin exposure.

"In Bayer's opinion, that is the critical issue," said Paul Thiel, vice-president of

innovation and public affairs with Bayer Crop Science in Canada.

“The chronic endpoint value, 1.5 parts per trillion, is ... overly conservative.”

Thiel said the PMRA doesn't have sufficient information, or “adequate” scientific weight, to arrive at such a number.

Other environmental toxicologists, including Christy Morrissey of the University of Saskatchewan, have come up with significantly higher thresholds for chronic risk to aquatic insects such as mayflies and midges.

The PMRA said in its report that Morrissey's number is 35 parts per trillion for neonic exposure.

“Our own work, with both Tier 1 and higher tier studies, we believe the number is more in the 100 to 200 parts per trillion range,” Thiel said.

Setting an appropriate threshold for risk is critical because too low a number means that every water sample will likely exceed the “speed limit.”

In fact, 1.5 p.p.t. is below the sensitivity of water quality tests.

“The limit, generally ... is five to 10 parts per trillion,” Thiel said.

While Bayer is concerned about the low threshold for risk, others are wondering why Health Canada is banning neonicotinoid seed treatments, which many farmers view as a safer way to use insecticides.

Health Canada said it's necessary because neonics are moving from soil to nearby ponds.

“There is evidence that concentrations of clothianidin and thiamethoxam in water bodies, as a result of seed-treatment uses, can exceed the chronic level of concern at different times during the year, mainly in the spring and summer,” it said.

Bayer is also troubled by the PMRA assumption that aquatic insects are in jeopardy, as well as the presumption that birds and other species are suffering because of a lack of food.

“We are not seeing any evidence that there's a decline in aquatic invertebrate populations,” Thiel said.

“Even fish populations — there's no evidence they're in significant decline in the past 20 years while these products have been used.”

The PMRA decision to phase out neonics is still a proposal. The agency won't make a final decision until late 2019, so it could change its mind.

“The PMRA has a track record of listening and evaluating information,” Thiel said.

“I value our relationship with the PMRA.... We do have an opportunity to talk with them and they do listen and they do consider the information we provide them.”

Is it 1.5 or 20 parts per trillion?

Health Canada, in its special review decision on clothianidin, a neonicotinoid, said it used something called a species sensitivity distribution to assess the risk to aquatic insects.

“When sufficient laboratory data are available to determine an SSD ... the fifth percentile of the SSD is used to identify the concentration which is expected to be protective of 95 percent of the species in the community,” the report says.

Based on that method, Health Canada selected 1.5 parts per trillion as the concentration in water that would protect 95 percent of species.

However, in an email, Health Canada said it’s using a different threshold for chronic exposure.

“Based on information from scientific literature and manufacturers, levels of clothianidin in water below 0.020 p.p.b. (20 parts per trillion) ... would be considered acceptable over the long term.”

Bayer, which makes clothianidin, was surprised by the 20 parts per trillion figure.

A spokesperson said the company had never heard of that, and it was under the assumption that PMRA’s acceptable limit for clothianidin is 1.5 parts per trillion.

What is a part per trillion?

- A 747 airplane can hold almost 50,000 gallons of fuel. One part per billion is about four drops of liquid mixed into the fuel.
- One part per trillion would be about half a drop of oil in a super tanker carrying six million gallons of oil.

Source: www.vanishingzero.org