NEONICS

#6 IN A SERIES OF 6

WHAT are "neonics"?

Neonics are **neonicotinoids**, a class of insecticides used by farmers to protect fruit, vegetables and crops from various insect pests such as aphids, wireworms, flea beetles and types of chewing and sucking insects.

Neonics can be sprayed on crops. They are also often applied as a seed treatment, which protects planted seeds and crops in the early stages of growth from various insects. Only small quantities of the insecticide are needed to coat the seed, which is then planted in the ground, reducing human and environmental exposure as well as exposure to non-target insects such as bees.

In addition, neonicotinoids are used for killing insects in homes, controlling fleas on pets, and protecting trees from invasive insects such as the Emerald Ash Borer.[1]

Wireworm eating wheat kernel - will result in significant crop damage

Why were these insecticides developed?

The first neonicotinoid was approved for use in Canada in the 1990s. Researchers all over the world are continually working to develop new insecticides that are more effective in controlling specific pests to protect beneficial insects and safeguard the environment and human health.

Are neonicotinoids safe?

Although no human health concerns have been identified with the use of neonicotinoids to date neonics, like all pesticides, must be used with caution. A thorough human and environmental risk assessment was carried out by Health Canada's Pest Management Regulatory Agency (PMRA) before neonicotinoids were approved.[3]

Flea beetle damage to canola crop.

A 2012 study indicated that insects, weeds, and diseases resulted in global crop losses of about 30% in corn, soybeans, and cotton.[2]

INSECTS CAN DEVASTATE CROPS

Insects can eat crops and/or cause injury to crops by laying eggs on plant tissue. The larvae that hatch may feed on the crops, too. Some insects also carry disease that they can spread from plant to plant.

ARE NEONICOTINOIDS AFFECTING BEES?

Some people believe that neonicotinoids kill bees or make them sick. The only situation in Canada in which high numbers of bee deaths have been directly linked to neonicotinoid pesticide occurred primarily in corn and soybean growing regions in 2012 and 2013, mostly in Ontario and Quebec.[4] The cause of these deaths was linked to dust that was released while planting corn and soybean seeds that had been treated with neonicotinoids. Similar incidents have been reported and confirmed elsewhere in the world, including Germany in 2008.

When used according to label instructions, neonics pose no unacceptable risk to bees. In Western Canada, for example, although the majority of canola seed grown is treated with neonicotinoids, beekeepers in this region have not reported any problems. In fact, beekeepers often seek out canola fields for their bees.

What is being done to lessen the environmental impact of neonics?

To address the dust-related issues and prevent further bee deaths, crop farmers and bee farmers have been working with government to reduce the amount of dust released during planting. As of 2014, dust-reducing agents must now be used when planting neonicotinoid-treated seed.[5]

Pesticide labels are a legal document that all farmers must follow. Most insecticide labels state that plants should not be sprayed before or during blooming stages because that is when pollinators such as bees are most active.

Pollinator risk assessments were conducted in 2017 by Health Canada's Pest Management Regulatory Agency (PMRA) in collaboration with the United States Environmental Protection Agency and California Department of Pesticide Regulation. These agencies have been seeking public input into the assessment results before making recommendations.[6,7]

Aphid larvae on green tomato plants

Farmer examines canola seed. The seed may be treated with neonics before being planted to protect plants from insects during early stages of growth.

If left untreated, Colorado potato beetles will defoliate entire potato plants and decimate crops.