Agricultural roots

By Miriam King, Bradford Times
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John Deere display at the 65th Annual Muck Vegetable Grower's Conference in Bradford, Ont. on Tuesday April 12, 2016. Miriam King/Bradford Times/Postmedia Network

The 65th Annual Muck Vegetable Growers' Conference combined education and an Agricultural Trade Show – all geared towards farming on organic "Muck" soils, like those in the Holland Marsh.

Exhibitors and speakers came from across Canada and the U.S., wherever muck soils are farmed or studied.

Displays in the arena ranged from specialized farming equipment, agricultural innovations and inputs, to the financial and insurance programs available for agribiz.

Weening Brothers Manufacturing Inc. set up a booth, marking 30th years in business, over which time WBM has grown from "a little manufacturing shop out of the Marsh," to the primary supplier for post-harvest equipment for carrots in South America, and a company with an international reputation for custom-designed machinery and metal fabrication, said Sales Rep Shaun Tearne.

WBM has been involved in "bigger and bigger" projects, including the recent completion of a prototype for a "first-of-its-kind" corn stover washer that will be used at an ethanol power plant in South Dakota - a plant designed to use corn husks instead of grain, as a fuel.

"We're gathering steam, and we're not looking back," Tearne said.

Exhibitors and visitors had to bundle up against the cold, though: despite a change of date, that moved the Conference from March to April 12-13, and in spite of space heaters and infrared lamps, the temperature inside the former ice arena was decidedly chilly.

Upstairs in the auditorium, visitors could shed their winter coats, and listen to speakers on a range of topics, from Thrip Control in Onions, to the Impact of Pesticide residuals in soils on crop rotation.

Some of the talks were of interest to a broader audience. Dr. Cynthia Scott-Dupree of the University of Guelph presented her findings on Bee losses and Neonicotinoid insecticides.

"Ontario continues to have a very high overwintering loss," Dr. Scott-Dupree noted. Causes include nutrition, winter weather conditions, pathogens, parasites, Small Hive beetle, genetic weakness from in-breeding – but "it's usually blamed on chemicals and pesticides."

She acknowledged that Neonicotinoid pesticides can have a negative impact. “They are insecticides, and bees are insects – there’s no doubt there’s going to be some toxicity. It’s inarguable,” Dr. Scott-Dupree said, but the question is whether exposure, in the field and under natural conditions, poses a significant risk. “What is happening in a real situation?”

Foliar spraying of vegetables increases the exposure to “neonics” and therefore risk, and contaminated exhaust dust, blowing off treated seed during the planting of corn and soy “is definitely a problem,” although it has been mitigated by altering planting practices since 2012, she said – but what about neonicotinoid contamination of pollen and nectar from crops grown from pre-treated seed?

The University of Guelph conducted a study of 10 Canola fields (5 treated, 5 untreated), and looked at parameters that included weight gain, honey yield, number of bees and sealed cells in the hive, and adult mortality. The study found no significant impact – but admittedly, was limited to a 2.5 week period in a single season, and a single crop.

Even so, if seed treatment does contaminate pollen and nectar, neonics should have been present in the pollen collected by the bees during Week 1, Scott-Dupree said - but there were no/barely measurable neonic traces in the pollen (measured in parts per billion) during the first week. In Week 2, levels of 0.5 to 1.9 ppb were measured even in the untreated fields.

Where did those neonics come from? “We really can’t control where these bees fly,” Scott Dupree said later. Although the study ensured that there were no other treated Canola fields within 10 km of each test plot, there may have foliar spraying of other crops, in areas where the bees were foraging.

All the same, she pointed out that Neonic and pesticide exposure can’t be the whole story of bee loss. Alberta, Saskatchewan and Manitoba “have a lot of crops that are treated,” but an overwintering loss of less than 15%. Ontario’s losses were closer to 37.8%.

Dr. Scott-Dupree noted that Ontario’s Pollinator Health Strategy includes regulations to reduce the use of Neonicotinoid-treated seed, and a strategy to increase pollinator habitat.

“Habitat reduction is responsible for reduction in abundance and diversity,” not only in honey bees but all bee species and other pollinators, Dr. Scott-Dupree said, encouraging farmers in the Holland Marsh to plant the new berms constructed as part of a drainage improvement project with wildflowers and native flowering shrubs, instead of grass.

It’s a simple step that can improve the abundance, diversity and health of beneficial insect populations, enhance ecosystem stewardship, and help pollinators – like bees.