

Acadia's Pest V. Pesticide Challenge

Partnership Seeks "Green" Ways to Save Trees, Crops

Acadia University

Dalhousie University

University of New Brunswick



If insects had their way, you wouldn't be able to see the forest *or* the trees.

Every year bugs, beetles and like-minded pests chomp their way through millions of hectares of forest and farmland, according to Canadian government figures. But with rising concerns about the adverse environmental and health effects of traditional pesticides, a major push is under way to develop more "green" approaches to pest management—and not just in Canada but around the world.

Researchers at Acadia University in Nova Scotia are in the forefront of this movement. The effort is led by biology professor Kirk Hillier, an internationally recognized expert in how insects use naturally produced semiochemicals such as pheromones to communicate with one another. Pheromones can signal alarm, attract prey, repel enemies and lure potential mates.

It's that last category that interests those working to protect the country's crops and forests. Hillier's team and its

partners have developed and marketed several products that disrupt the mating behaviours of targeted groups of pests, among them the brown spruce longhorn beetle, the emerald ash borer and the jack pine budworm. These products include traps, lures and sprays to attract, repulse or confuse the intended recipients.

“ In 2017 Canada committed nearly \$3 million from the Atlantic Canada Opportunities Agency to the project, which supporters hope will reduce the billions of dollars in damage caused by native and foreign insects, while simultaneously protecting the environment.

Acadia’s key partners include Forest Protection Limited (FPL), a nonprofit company that operates customized aircraft used for firefighting and aerial surveys in addition to vegetation and pest management. FPL says field trials of sex pheromones and biological insecticides using its state-of-the-art delivery techniques “allow us to optimize low-volume delivery with the maximum benefit to the forest and people.

Other partners include National Resources Canada, the University of New Brunswick and Dalhousie University.

Federal Environment Minister Catherine McKenna said the research “has the potential to create effective and environmentally responsible, pheromone-based products that will be marketed in Canada and internationally.

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