

CONTROLLING THE CABBAGE SEEDPOD WEEVIL IN CANADA

Locations	Canada
Dates	01/04/2009 - 31/03/2016

Summary

The cabbage seedpod weevil is a widely distributed pest of cruciferous crops in Europe and North America, causing substantial economic losses in canola crops in Canada. Current control measures still rely on applying broad-spectrum insecticides. We are collecting European distribution data for a parasitic wasp that is the weevil's most effective natural enemy in Europe, to find out whether it may prove successful in Canada.

The problem

The cabbage seedpod weevil (*Ceutorhynchus obstrictus*) is a widely distributed pest of cruciferous crops in Europe and North America. Accidentally introduced from Europe, the weevil was first discovered in British Columbia, Canada, about 80 years ago, and has since spread to other parts of western and eastern North America. Since its arrival in North America, the weevil has caused substantial economic losses in canola crops in the Canadian prairie provinces of

Saskatchewan and southern Alberta. In eastern Canada, the occurrence of this pest is regarded as a threat to canola seed production.

Yield loss results from adults feeding on the flower buds and larvae feeding within the seedpods. Current control measures still rely on broad-spectrum insecticides. Although never intentionally released in eastern Canada, the most effective natural enemy of *C. obstrictus* in Europe, the parasitic wasp *Trichomalus perfectus*, was first recorded in Ontario and Quebec in 2009. However, it remains unclear whether the parasitoid has the potential to spread and establish throughout the canola growing areas of Canada.

What we are doing

Bioclimatic simulation models, also known as bioclimate envelope or ecological niche models, have been applied successfully to predict the distribution and the extent invasive insect pests have managed to establish in new environments. To a much lesser extent bioclimatic models have been developed to predict the potential areas where insects considered for classical biological control may be successful against invasive pests. The objective of our study is to collect European distribution data for *Trichomalus perfectus* to develop bioclimatic models, predicting the potential distribution and abundance of the parasitoid in North America.

Results so far

Surveys for cabbage seedpod weevil parasitoids were conducted across Europe to determine their geographical distribution and abundance. The most common parasitoids were: *Trichomalus perfectus, Mesopolobus morys, Stenomalina gracilis* and *Eurytoma* spp*. Trichomalus perfectus* was found at 121 locations in Europe and our data suggest that *T. perfectus* is dominant in the northern parts of Europe, whereas *M. morys* is more common in the South. Bioclimatic models for *T. perfectus* and *M. morys* were finalized in 2018 and have been published.

Donors

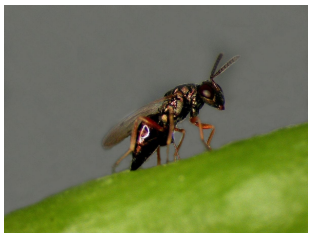
Agriculture and Agri-Food Canada (AAFC)

Partners

Agriculture and Agri-Food Canada (AAFC), University of Alberta, Edmonton, Canada

CABI Project Manager

Tim Haye






https://www.cabi.org/what-we-do/cabi-projects/