

Canadian Corn Pest Coalition News Release: Continuous Corn Growers Should Check their Fields for Rootworm Resistance to Bt Hybrids

Corn rootworm (CRW) has historically been one of the most important pests of corn in Canada and can cause extreme economic loss and increased management costs. High CRW pressure in Ontario in 2020 is challenging current Bt corn rootworm hybrids and several growers of Bt rootworm hybrids are reporting unexpected injury by CRW to trait providers and research and extension scientists. Specifically, several fields in Huron, Perth and Durham Counties have been identified with injury to various Bt rootworm traits, providing an early warning of possible resistance development by CRW to some Bt traits. There is the potential for resistance development to be occurring in other regions of Ontario where use of Bt rootworm traits in continuous corn is prevalent.

Corn rootworm resistance to Bt traits are widespread in the United States and resistance may be a factor contributing to unexpected injury on Bt corn rootworm hybrids in Canada. While most of the injury by CRW larvae has already occurred by August, growers should still scout their fields as soon as possible to determine whether root injury, lodging, goosenecking, or high levels of adult CRW beetles are present. Scouting will help determine if these fields need to be managed differently next year to reduce the risk or spread of resistant populations. In these potential resistance scenarios, growing Bt rootworm corn may not be an effective tool for 2021. Beetles from this year will have already laid large numbers of eggs in these and surrounding fields which will hatch to become next year's problem. Scouting now will help determine the best management practices to implement in 2021.

Scout these high priority/high risk fields first:

1. **Continuous corn production and repeated use of Bt corn rootworm hybrids** – Continuous corn planting can promote higher populations of CRW. Fields or areas with a long history of corn after corn production and/or repeated use of Bt rootworm hybrids are at high risk of resistance development.
2. **High adult CRW populations** – Fields with high numbers of CRW adults observed the previous year and where a lot of egg laying likely occurred.
3. **Lodging or Goosenecking** – Because lodging/goosenecking often occurs in fields with high rootworm pressure, root digs are needed to determine if root injury was the result of larval CRW feeding or other factors (e.g. high winds).

Scouting Guidelines to Determine Possible Rootworm Resistance:

<https://fieldcropnews.com/2020/08/rootworm-scouting-guidelines/>

In cases where CRW injury to a Bt rootworm hybrid is suspected, growers should report the issue to their seed supplier and inform the executive or provincial members of the Canadian Corn Pest Coalition (CCPC; <https://www.cornpest.ca/contact-us/executive-members/>).

Guidelines are being developed to help guide growers on cropping and management decisions for the 2021 growing season. These will be distributed by OMAFRA, GFO, the CCPC, seed providers and others to ensure information is available to those growers impacted. Following these guidelines will be the best way to reduce the spread of resistance and preserve the longevity of Bt rootworm hybrids for Canadian corn growers.

Additional resources

- [Canadian Corn Pest Coalition Website](#)
- Insect Chapter of the [Agronomy Guide to Field Crops, OMAFRA Publication 811](#)