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Western Corn Rootworm found in Manitoba

Manitoba Agriculture and Resource Development has identified a new corn pest in Manitoba during the 2021 growing season. This new pest is Western Corn Rootworm (WCR), closely related to Northern Corn Rootworm (NCR) previously verified in the province during the 2015 growing season.

Background & Impact on Crop

- Larvae cause the most yield loss
 - Larvae feed on the roots, starting with root hairs and go as far as pruning off and tunneling into nodal roots
 - Each missing set of nodal roots results in a 15-18% yield loss due to reduced water and nutrient uptake
 - Eggs overwinter in the soil and hatch mid-June to mid-July
- Adults clip silks causing pollination issues in corn crop
 - Very high populations are required to cause economic damage
- Severe damage can cause goose-necking and lodging resulting in poor pollination, difficulty at harvest and yield loss
- Corn Rootworm (CRW) do not discriminate between a corn silage or a grain corn field

IDENTIFICATION

There are 2 species of CRW in Manitoba – western and northern. Other species exist, but are not a concern in Western Canada.



Western Corn Rootworm Adults
(male – left; female – right) (Purdue, 2009)

WCR adults are yellow to green in color with a black stripe along the sides of their wing covers. Male adults have wing covers that are often entirely black (or darker in pigmentation), resulting in more irregularity in their stripes. Female CRW adults have larger abdomens than the males.



Northern Corn Rootworm Adult
(OMAFRA, 2016)

Northern CRW adults can be easily identified as having a pale green body with no additional markings.



Corn Rootworm Larvae
(UNL Entomology)

Larvae are white and slender with brown heads, and a dark plate on the top side of their “tails.” When fully grown, they are about 0.5” long.

It is nearly impossible to differentiate NCR and WCR species as larvae

Best Management Practices

- 1. Crop Rotation** – This is the primary strategy to managing CRW. Larvae can only survive in the soil if they have corn roots (and limited other grass roots) to survive on. Larvae do not migrate very far so when there are no corn roots to feed on, they will starve. A one year break in corn on the field can significantly reduce pest populations.
- 2. Traits** – Some seed companies offer traits that protect the roots from CRW larvae damage. In general, there are less CRW traits available in the Western Canada due to the low incidence of pest. However, as corn acres increase it is likely pest pressure will increase and more lower maturity hybrids will contain CWR traits. PRIDE Seeds offers G8 (SmartStax RIB Complete) and G7 (Agrisure Duracade 5222 E-Z Refuge) hybrids that provide protection against WCR and NCR (note: only G8 hybrids are available in Western Canada).
- 3. Control Corn Volunteers** – Avoiding corn volunteers in next seasons crop will be important because if a small larvae population finds roots to feed on, they will be able to reproduce another life cycle.

This is a short list of the most common best management practices – there are others. Please note that seed treatments are not an option to manage CRW.

Wrap Up

At this stage in the game CRW is not a significant pest, but it is something for growers to watch out for. Especially for growers with corn-on-corn fields. Other parts of the country and the US are dealing with CRW trait break down resulting in the traits and not providing the protection expected. This newsletter is not intended to create panic, but to generate awareness and encourage growers to be proactive against this pest.

During the 2022 growing season, PRIDE Seeds will have corn root worm traps at various trial locations throughout Manitoba to help get a better idea of areas with high and new insect pressure. We are committed and dedicated to helping farmers succeed through all challenges they may face during the growing season.

“Western corn rootworm is actually a very significant finding for anyone who is growing corn consecutively on the same land,” Gavloski said. “Anybody who is growing corn and rotating it, where you’re not growing it continuously on the same land, won’t have a problem with it.”

(Two new pest insects found in province, Alexis Stockford, Manitoba Co-operator: Volume 79, Issue 48, December 2, 2021)

Additional Reading

- › [Corn rootworm \(*Diabrotica virgifera*\), *Diabrotica barberi*\) - Syngenta](#)
- › [Two new pest insects found in province - MB Co-operator](#)
- › [Corn Rootworms - Purdue University](#)
- › [Corn Rootworm - Crop Advisors Institute](#)