

Corn Rootworm: Another Reason to Rotate Your Corn Crop

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What are corn rootworms? There are 2 species of corn rootworms that can be pests of corn in Canada, the northern corn rootworm (*Diabrotica barberi*) (Fig.1), and the western corn rootworm (*Diabrotica virgifera*). In Manitoba, we have never found western corn rootworm, but we do have some established populations of northern corn rootworm. Areas where we know established populations exist based on recent surveys include the Souris area, and the Morden /Winkler area, although it is likely more widespread than these areas. Larvae of these beetles (Fig.2) feed on the roots of corn. Very high levels of feeding on roots may cause plants to lodge and grow with curved stems, although there are other factors such as soil compaction, herbicide injury and environmental conditions that can also increase the risk of lodging.



Fig. 1. Adult Northern corn rootworm



Fig. 2. Corn rootworm larvae and pupa (upper right)

Figure 2 shows some mature corn rootworm larvae and a pupa. This is the stage they were at on July 19. The larvae feed on corn roots, so you would need to dig and look around the corn roots to find them. Newly hatched larvae feed on root hairs and outer root tissues, but also tunnel into the soft root tissue. Larger larvae tunnel into roots and occasionally into the plant crown. Tunnel openings may be visible on the roots, and root tips may appear brown and chewed back. In August and September you may see the adult beetles.

How are corn rootworms managed? Very good control of corn rootworms can be achieved through crop rotation, and this is highly recommended as a means of managing corn rootworms where they are present. Corn is the only crop they feed on. And eggs are laid into corn fields in late-summer. When the eggs that have overwintered hatch the next year, if corn is not present in the field the larvae cannot move far and will die. If corn is repeatedly being grown in the same field, this makes it easy for corn rootworm to build their population.

Varieties of corn have also been developed containing *Bt* traits that make these varieties resistant to corn rootworms. The *Bt* traits that make corn resistant to corn rootworm are different than those that make corn resistant to European corn borer. So if resistant varieties are to be used as a method to minimize corn rootworm injury, make sure the proper *Bt* varieties are selected.

Seed treatments are also available to help manage corn rootworm. However the rates required to manage corn rootworm are several times the rates used for wireworm management. So this method will not be cheap.

Corn rootworm is one more reason why growing corn in the same field in consecutive years will eventually become a costly and frustrating endeavor. So for profitable corn production, make sure to have a good crop rotation plan.