

Corn rootworms

What are corn rootworms?

There are three different species of corn rootworm, the northern corn rootworm (NCR) (*Diabrotica barberi*), southern corn root worm (SCR) (*D. undecimpunctata*) and the western corn rootworm (WCR) (*D. virgifera*).

All three are native to North America however the WCR and SCR are also native to Central America. The WCR was introduced to Serbia in 1992 since then it has spread to most European countries.

Adults and larvae both cause damage to crops while feeding, however larvae feeding on roots cause the most significant damage to maize crops. Both the NCR and WCR adults predominantly feed on maize but may also feed on other grasses (including wheat), cucurbits, legumes and members of the daisy family (including sunflower). The adults of the SCR (also known as the spotted cucumber beetle) are highly polyphagous but mainly feed on cucurbits.

What do they look like?

All three species are small to medium sized beetles (6-8 mm long). The NCR adult is yellow to pale green in colour with no black stripes or spots and a brown to green head. The SCR is yellow to yellowish green in colour with 11 black spots on the wing covers and a black head and legs. The WCR adults have three black stripes that run along their wing covers and have black coloured heads. The black stripes are widely separated on females but can merge together on males. The larvae of all three species are white to pale yellow with a yellow to brown head. There is a brown marking on top of the last abdominal segment. The pupae are found in the soil and are white, gradually becoming light brown before adults emerge.

Plants that are damaged by corn rootworm larvae show symptoms such as stunting (particularly of the root system) tillering and lodging. Often lodged plants will “goose-neck” or attempt to grow upright after lodging. The adult beetles strip tissue from the leaves and feed on other above ground plant parts, particularly maize tassels and kernels.



Larvae of the western corn rootworm. Note the brown marking on the last segment of the abdomen

Scott Bauer, USDA Agricultural Research Service, Bugwood.org



Adult corn rootworms. southern corn rootworm (left), northern corn rootworm (centre) and western corn rootworm (right)

R. L. Croissant, Bugwood.org



Adult northern corn rootworm

Winston Beck, Iowa State University, Bugwood.org

What can they be confused with?

The larvae can be confused with other white larvae inhabiting the soil but can be distinguished by their brown heads and the brown marking on top of the last abdominal segment. The symptoms of the host plant can resemble shallow planting and similarly lodging can occur for a variety of reasons. The adults can be easily confused with the three lined potato beetle (*Lema trivittata*) and other small to medium sized striped or spotted beetles.

What should I look for?

Look for the adult beetles which feed on the above ground parts of the crop. It is also important to investigate the cause of any loss of vigour, stunting, tillering, leaf damage, kernel or grain damage and stunting. Root systems of affected plants should be investigated for damaged roots, particularly for poor root growth and damage as a result of larvae tunnelling inside roots.

How do they spread?

The adults are capable of flight allowing for localised spread. It is also possible that they could be accidentally spread on vehicles or machinery.

Where are they now?

Corn rootworms are currently found in Central and North America. The WCR is also found in Central and Eastern Europe.

How can I protect my farm from corn rootworms?

You can protect your farm from corn rootworms by checking your property frequently for the presence of any new pests and by closely examining the cause of any lodging, stripped leaves and tillering in crops. Make sure you are familiar with the symptoms of common pests so you can tell if you see something different.

If you see anything unusual, call the **Exotic Plant Pest Hotline** on **1800 084 881**.

DISCLAIMER: The material in this publication is for general information only and no person should act, or fail to act on the basis of this material without first obtaining professional advice. Plant Health Australia and all persons acting for Plant Health Australia expressly disclaim liability with respect to anything done in reliance on this publication.



Variation in the markings of the female (left) and male (right) western corn rootworm

Whitney Cranshaw, Bugwood.org



Damage to maize root system caused by southern corn rootworm

R. L. Croissant, Bugwood.org

GRAINS FARM BIOSECURITY PROGRAM

An initiative of Plant Health Australia and Grain Producers Australia



**IF YOU SEE ANYTHING UNUSUAL,
CALL THE EXOTIC PLANT PEST HOTLINE**

1800 084 881