



Agronomic Spotlight

Manage Rotation-Resistant Variant of Western Corn Rootworm

The western corn rootworm (WCR) rotation-resistant variant is creating management challenges for some Midwestern corn growers. WCR variant adults lay eggs in soybeans that can hatch into larvae and damage corn roots the following season. Soybean fields should be scouted every week through the first week of September to help identify fields where WCR may attack corn next spring. Farmers are encouraged to adopt best management practices to reduce WCR damage to corn roots.

WHAT TO CONSIDER

Some areas of the eastern Midwest have observed a steady and substantial increase of damage in first-year corn due to a behavioral variant of the western corn rootworm (WCR) (*Diabrotica virgifera virgifera*) that has evolved to lay eggs in soybeans and to a lesser extent in

other crops. This “rotation-resistant” WCR variant also lays eggs in wheat stubble, alfalfa, and oats. When WCR eggs laid in non-corn fields hatch the following season, the larvae can cause corn root damage.

SCOUT AND IDENTIFY

Farmers in or near areas where the WCR variant has been identified should scout soybean fields for adult WCR in August and early September to identify the potential for crop-damaging levels of WCR larvae where corn will be planted next spring. Scouting this summer allows time for planning a WCR management strategy for next spring. Soybean fields should be scouted in the morning or late afternoon, when WCR adults are most active, using either sweep nets or sticky traps.

Sweeping:

- Using a 15-inch diameter sweep net, take 20 continuous sweeps in 5 different areas of a field, keeping the net

closed between the 5 areas.

- Take sweeps from areas that represent differences in topography: high ground, low ground, waterways, wet and dry areas, dark and light soil, etc.
- Sample areas within 50 feet of a corn field separately.
- Sweep the net from left to right with the top of the net slightly above the top of the foliage.
- Reverse the net and sweep through the foliage in the opposite direction.
- Count the total number of WCR adults in 100 sweeps.
- Samples should be taken weekly.



Figure 1. Female western corn rootworm adult beetle.



Figure 2. Northern corn rootworm adult beetle.



Figure 3. Southern corn rootworm adult beetle. Capinera, J. University of Florida, Bugwood.org.

Sticky Traps:

- Pherocon® AM yellow sticky traps should be mounted on stakes just above the soybean canopy.
- 12 traps should be placed throughout the field in a grid pattern, avoiding field edges. Count and record the number of male and female adult WCR beetles captured on each trap each week.
- Traps should be replaced every 7 days. Continue trapping for 6-8 weeks or as long as significant beetle activity is noted.
- Research suggests that catches of 5 or more WCR

beetles per trap per day during any trapping week indicates a potential problem with rootworm the following year.

Identification:

Male and female adult WCR are yellow to green in color with a black stripe along the sides of their wing covers. They are about 5/16-inch long (Figure 1). Female wing covers usually have a regular striped pattern, while male wing covers may be nearly completely black. Northern corn rootworm adults are tan to pale green (Figure 2), and southern corn rootworm adults are yellow to green in color (Figure 3), with 11 black spots on their back.

MANAGEMENT OPTIONS

In fields that were planted with products that contain YieldGard VT Triple® or Genuity® VT Triple PRO® technology that experienced greater-than-expected CRW damage during this season:

- Rotate to Genuity® Roundup Ready 2 Yield® soybeans or another non-host crop if soybeans are not a suitable recommendation for that area.
- Switch to a dual-mode-of-action SmartStax® RIB Complete® corn blend or SmartStax® corn.

- Products with SmartStax® technology offer dual modes-of-action for above- and below-ground insect protection.
- If a dual mode-of-action product is not available for a specific geography, consider use of a soil-applied insecticide with non-CRW traited corn products. Placement of VT3P corn products on fields where insufficient rootworm protection has been observed is not recommended.

Sources

Bledsoe, L.W., and Obermeyer, J.L. 2010. Managing corn rootworms. E-49-W. Purdue University. <http://extension.entm.purdue.edu>. Cook, K.A., Ratcliffe, S.T., Gray, M.T., and Steffey, K.L. 2005. Western corn rootworm variant scouting information sheet. University of Illinois Integrated Pest Management. <http://ipm.illinois.edu>. Rice, M.E., and Tollefson, J.J. 2006. The variant western corn rootworm in Iowa. Integrated Crop Management Newsletter. IC-496(4). Iowa State University Extension. <http://www.ipm.iastate.edu>. Michel, A. 2009. Status of western corn rootworm variant in Ohio. The Ohio State University Department of Entomology. <http://oardc.osu.edu>. Web sources verified 08142017. 140731162232

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