THE OHIO STATE UNIVERSITY EXTENSION

FACT SHEET

Agriculture and Natural Resources

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Monitoring Western Corn Rootworm Activity in Soybeans to Predict Rootworm Injury in First-Year Corn

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Crop: Field Corn
Crop Development: Tassel or Silk Stage (adults)
Scientific Name: *Diabrotica virgifera virgifera*

Western corn rootworm (WCR) (fig. 1), which spread across Ohio during the 1970s from its western origin, has been a problem on field corn in much of Ohio. Historically, injury caused by this species was primarily limited to corn following corn because adult rootworm beetles only deposited their eggs in plantings of corn. The eggs hatched the following spring into larvae that fed on the root systems of corn planted after corn (fig. 2), thus causing the injury that led to yield losses.

Figure 1. Western corn rootworm adult

In the late 1980s, cases of rootworm injury on first-year corn by the WCR were identified in northeastern Illinois and soon thereafter in northwestern Indiana. In this case, adult rootworms were depositing eggs in fields other than corn fields, most often soybean fields. The eggs then hatched the following year in corn planted after soybeans. This new egg-laying behavior enabled populations of WCR to thrive under a system of intense two-year rotations of corn and soybeans. This variant of the WCR spread throughout Illinois and Indiana during the 1990s, especially in an eastward direction towards the Indiana-Ohio border. By 1996, OSU Extension entomologists had confirmed that the new variant of WCR had become established in Ohio counties bordering Indiana. More recent observations indicate that it has become a more common occurrence in western Ohio, and is now present in the central part of the state.

Prediction of WCR Injury in First-Year Corn

The potential risk for rootworm injury in first-year corn can be predicted by monitoring WCR beetle activity in soybeans during the previous season. Adult rootworm beetle activity can be measured by the use of yellow sticky traps (fig. 3). The preferred method for monitoring rootworm beetle activity in soybeans is the use of the Pherocon AM yellow sticky trap.

Figure 2. Root injury

Figure 3. Yellow sticky trap

When using yellow sticky traps to monitor beetle activity, 6 traps should be stationed in soybeans at least 100 feet into the field and from each other. The traps should be placed in a soybean field by the third week in July, when adult rootworm beetles are beginning to emerge from cornfields. The traps should be replaced at 7-day intervals, with trapping continuing for 6 weeks. Trap monitoring of rootworm beetle activity should be terminated around early September.

The average number of beetles collected per trap per day per sampling period (7 days) over the entire monitoring period provides an index of adult rootworm beetle activity. In general, an average collection of 5 adult beetles per trap per day for any sampling period is an indication of potential economic rootworm injury if corn is planted in the field the following season.

See Ohio State University Extension Bulletin 545, *Control of Insect Pests of Field Crops*, for those insecticides labeled for corn rootworms, or for all insecticides labeled on corn. Bulletin 545 can be accessed at http://entomology.osu.edu/ag/.

Additional information is available from your local Extension office or The Ohio State University Entomology Agronomic Crops Insects web site (http://entomology.osu.edu/ag/).