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Variant Western Corn Rootworm

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The variant western corn rootworm has been on the scene in Wisconsin since 2003. The first reports came from farmers in southern Wisconsin who began to notice corn rootworm damage in first year corn. This variant, or rotation-resistant, population had expanded north from Illinois where it was first observed in the mid 1990's.

What makes the variant different from ordinary corn rootworm are the crops in which adults lay their eggs. Ordinary corn rootworms lay their eggs in corn. The next year, if corn is planted in the same field, the rootworm eggs are in the right place for the hatching larvae to feed. By

putting fields into a corn-soybean rotation, most corn rootworm damage can be avoided. However, with the variant corn rootworm it's a different story; the variant lays its eggs in soybean fields. This means that corn planted after soybeans may suffer from rootworm feeding if the variant is present.

In order to anticipate if first year corn will be at risk, a trapping protocol was developed by the University of Illinois. The time to trap is when the field is in soybeans. Twelve sticky traps are placed throughout the soybean field during the last week in July and checked weekly throughout the entire month of August, when western corn rootworms are laying their eggs. At the end of the month the number of adult beetles per trap per day (B/T/D) is calculated. If the figure is greater than 5 B/T/D, and corn is intended to be planted the next year, a rootworm control measure (e.g., soil insecticide, Bt corn rootworm corn) is recommended.



The University of Wisconsin Entomology Department, UW-Extension county agents, and the Wisconsin Department of Agriculture Trade and Consumer Protection (WDATCP)'s pest survey have been collaborating using this trapping protocol to determine the extent of this variant pest in Wisconsin every year since 2004. Trapping has been focused in the southern part of the state, where the pest

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was first observed. Rock County has been a particular area of focus because it consistently has had fields above the 5 B/T/D threshold, and because the Rock County Agricultural Extension Agent, Jim Stute, is very involved in the project. Sentinel monitoring in commercial soybean fields is also maintained throughout the southern half of Wisconsin with sites in Buffalo, Columbia, Dane, Dodge, Grant, Green, Jefferson, Kenosha, LaCrosse, Monroe, Racine, Sheboygan, Vernon, Washington, Walworth, and Waukesha counties.

Since 2004 the variant has been detected above the 5 B/T/D threshold in five counties: Jefferson (2005), Kenosha (2005), Racine (2005), Rock (2004-2006), and Walworth (2004-2005). In 2007 none of the 53 sites trapped were above threshold.

In 2008 there were fewer fields trapped (26) over a wider geographical region, but again, none of the fields were above threshold. What this means is that although adult corn rootworms were found in soybean fields this year, the numbers were low enough that any root feeding damage that might occur next year when corn is planted in those fields will not be severe enough to warrant a rootworm control.



It is important to keep in mind that trapping data is specific to the field trapped. Although it appears that the variant western corn rootworm is diminishing in pressure, at least for the last two consecutive growing seasons 2007-2008, it may still be present and cause damage in individual fields. This is why farmers interested in using an integrated pest management approach to field pests are encouraged to trap their own fields. Information and resources for this are given below.

Trapping for variant western corn rootworm will continue in 2009 and reports will also be available through the WI DATCP Pest Bulletin (<http://pestbulletin.wi.gov/>). Past reports

can be accessed online from the Wisconsin Crop Manager (<http://ipcm.wisc.edu/>) or from the UW-Madison Entomology Department site below.

You can find the variant western corn rootworm trapping protocol online on the Cullen lab website through the UW-Madison Entomology Department. From the lab home page go to Extension, click on Projects, and find the How-to guide for monitoring under the Variant Western Corn Rootworm heading. The following is a direct link: http://www.entomology.wisc.edu/cullenlab/site%20pages/extension/PDFs/Sticky_trap_protocol.pdf.