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Rootworms and YieldGard RW hybrids

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Abstract
It is that time of year when your corn rootworm management strategy should be examined. We are currently digging corn roots in our research plots to evaluate the performance of the seed treatments, soil insecticides, and YieldGard Rootworm (YGRW) hybrids. As you dig corn roots, you might find larvae feeding on the roots of YGRW hybrids or adult beetles in the field. Either of these situations may come as a surprise if you are unfamiliar with the technology.

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There are several conditions under which you might expect to find adult corn rootworms in a field of YGRW. First, there is the possibility that the field was not planted to a YGRW hybrid. This is an unlikely situation, but sometimes bags get accidentally mixed or field records are incorrect. Second, each YGRW field must have a refuge planted to a nonBt hybrid. This refuge will produce adult beetles, and they would be expected to move into the YGRW hybrid. Research has shown that adults can move 17 rows a day in what we would call trivial movement, but they also can migrate very long distances. Third, if the YGRW is a late-maturing hybrid (because of genetics or late planting), the green silks in this field may attract adults from more mature fields that are nearby. Fourth, YGRW hybrids do not kill all the corn rootworm larvae. The Bt technology does not provide complete control of the pest, similar to what we have experienced with European corn borers and YieldGard corn borer hybrids. Therefore, you should expect some larvae to survive, cause minor injury, and for those larvae to mature and emerge from the soil as adults.

What should be done if adult beetles are found in a YGRW field?

First, confirm that YGRW was planted in the field. Second, measure the performance of root protection by digging the roots, washing off the soil, and looking for injury. Effective performance would be if no more than 1/4 node of roots was removed on any plant. Root rating information can be found at on the root rating page [1].

Should the adult beetles be controlled in a YGRW field?

Probably not--only if beetles are clipping silks back to within 1/2 inch of the husk and interfering with pollination would their populations be a concern.

Egg laying that will produce next year's damaging larval populations has already begun, and adult control this season to prevent larval injury next year will no longer be effective. YGRW has been very effective in protecting corn roots from significant larval injury. If it is being planted next year, there is little need to kill adults to reduce next year's larval pressure.
There is little justification for being redundant with your management efforts; don't spend additional money to manage this insect this summer.

Unprotected corn roots (right) showing a Node-Injury Scale rating of 3.0 and protected roots (left) from a YieldGard Rootworm hybrid. (Marlin E. Rice)

Adult western corn rootworms may be found in YieldGard RW hybrids. (Marlin E. Rice)

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