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Get a handle on CRW populations this summer

BY Andy Nesseth and Liz Morrison

Growers continue to search for ways to cut corn production expenses. One target is corn rootworm (CRW) seed traits.

But can you drop CRW genetics next year without jeopardizing yields and crop revenues?

One way to answer that question is by getting a handle on beetle populations in your fields this summer.

Counting CRW beetles in July and August is the best way to:

- understand CRW species and pressure, field by field;
- estimate the potential number of eggs that may be laid in each field;
- make informed, field-specific CRW management decisions for 2018 and 2019.

“Scouting can help save resources,” says University of Minnesota Extension entomologist Ken Ostlie. “Information on corn rootworm populations in a field gives growers the flexibility to tailor their management.”

Traps a flexible IPM tool

Sticky traps are a reliable and relatively convenient way to estimate CRW populations. You put them out for a week, and if beetles are present, they will blunder into the traps. Sticky traps eliminate some of the variability of whole-plant beetle counts, which depend more on well-timed scouting, weather, and observer skills.

Sticky traps are also a flexible IPM tool.

You can place them in all your corn fields, or just in higher-risk fields, such as continuous corn fields, or later-planted or replanted fields, which attract migrating beetles.

You can set out a few traps per field to get a rough estimate of CRW densities, or trap more intensively, for a precise estimate.

Sticky traps are also a good diagnostic tool in fields where CRW traits haven't worked as well as expected. Higher beetle numbers could be a sign that insects are developing resistance to one or more Bt-CRW proteins.

Full trapping for four to six weeks, including labor, will cost around \$100 per field. By contrast, corn rootworm control — in the form of genetic traits, insecticides, or both — is much more expensive.

How to use sticky traps

Pherocon AM unbaited sticky traps are recommended because action thresholds are well established for these traps. Set up traps at silking time, about mid-July, placing them at corn ear height.

Ideally, you should set out eight traps per field, arranged down a single inside row for the entire length of the field. If labor is limited, you can place fewer traps, but the information won't be as accurate. Count beetles in each trap every seven days, counting western and northern beetles separately.

If the total beetle count for the field averages eight beetles per trap per day, no more trapping is needed. You can anticipate high CRW populations next year in that field.

If the average beetle count is less, place new traps in the field for another week. Continue trapping for about four weeks, or until traps reach the action threshold of eight beetles per trap per day.

If you are seeing a lot of northern corn rootworms, extend the trapping another week or two.

If populations are low...

If average CRW populations in the sticky traps are below the action threshold, you can consider skipping Bt-CRW traits next year. That could save you \$20 to \$40 per bag of seed.

Remember that Bt-CRW traits do not increase corn yield potential, but only protect yield potential if rootworms are present. As long as CRW pressure is low, hybrids without CRW protection typically yield as well or better than hybrids with one or multiple CRW traits.

If populations are high ...

If sticky trap action thresholds are exceeded, your best choice for next year is crop rotation. In Minnesota, switching to a non-host crop such as soybeans or alfalfa will virtually eliminate western CRW in the field.

However, if rotation is not practical in that field, you should plant a pyramided corn hybrid with multiple Bt-CRW proteins. Pyramids are needed because resistance to several Bt-CRW proteins has been documented in Minnesota. Resistance to the most commonly-used trait, Cry 3Bb1, appears to be widespread, Ostlie says.

Another option if CRW counts are high is to plant a non-Bt-CRW hybrid with a soil-applied insecticide.

If you've trapped a lot of northern corn rootworms, which often show extended diapause, use these control measures on rotated fields in 2019. Action thresholds for northern corn rootworms are somewhat higher than for westerns due to some mortality during the rotation year.

This summer, the University of Minnesota is seeking farmers to participate in a corn rootworm trapping project. The research will help scientists map the distribution and density of western and northern corn rootworms statewide. To participate, contact Ken Ostlie at 612-750-0993 or ostli001@umn.edu.

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Key points

- Counting CRW beetles this summer is the best way to make CRW management decisions for 2018.
- Sticky traps are a reliable way to estimate CRW populations.
- If beetle counts are low, you may be able to skip CRW traits next year in that field.