

Western Corn Rootworm Variant On-Farm Survey

Purpose:

Corn rootworm damage has been observed in first year cornfields in some U.S. States, including parts of Michigan and Ohio. Starting in the early 1990's, in some regions, where a strict corn-soybean rotation was followed, a selection was made for a new variant of western corn rootworm (WCR) that lays at least a portion of its eggs in fields other than corn. With the strict corn-soybean rotation, larvae hatching from eggs laid in soybean fields emerge in first year cornfields, where they can cause root injury, lodging, and yield reduction. In 2003, 11 soybean fields in eastern Ontario were surveyed in August to track the presence, density and distribution of adult WCR variant.

Methods:

The methodology employed was adapted from the survey protocol for WCR variant developed by the Department Of Crop Sciences (Integrated Pest Management), University of Illinois

- 11 soybean fields were randomly selected; each field was adjacent to a second year (or more) field of corn.
- The survey for adult WCR was conducted from the 1st to the last week of August.
- Each field was surveyed with 4 unbaited Pherocon AM yellow sticky traps set 50, 100, 200 and 300 feet respectively from the edge of the soybean field adjacent the corn field (see figure 1.).
- The traps were positioned just above the soybean canopy on 2 X 2 wooden posts
- After 4 weeks, the traps were removed and adult WCR on each trap were counted. The number of beetle per trap was divided by the number of days the trap was in the field to obtain the number of beetle trapped per day.
- Economic loss due to root feeding by WCR variant can occur if trap capture in a soybean field the year before averages more than 3 beetles per trap per day.

Results:

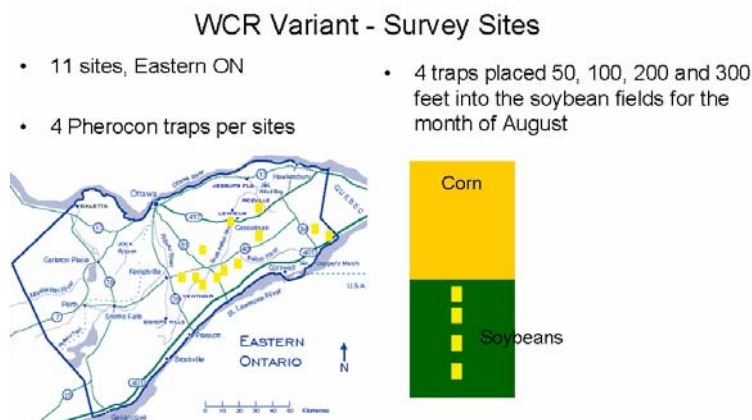


Figure 1:

Table 1: Average Trap Capture per Day

Field Location	Trap – 1 50'	Trap – 2 100'	Trap – 3 200'	Trap – 4 300'
Glengarry 1	0.07	0.15	0.00	0.00
Glengarry 2	< 0.05	0.10	< 0.05	n/a
Stormont 1	0.00	0.00	n/a	n/a
Prescott 1	0.20	0.00	0.00	< 0.05
Russell 1	0.20	0.07	< 0.05	0.00
Dundas 2	0.00	0.00	0.00	0.00
Dundas 3	0.30	0.07	0.00	n/a
Dundas 4	0.20	0.01	n/a	0.00
Dundas 5	0.05	0.00	< 0.05	n/a
Dundas 6	0.05	0.05	< 0.05	0.00
Dundas 7	0.15	0.15	0.00	n/a

Summary:

The maximum trap capture was 0.3 beetle per day, which is only 10% of the economic threshold of approximately 3 beetles per trap per day. The extremely low trap capture levels seem to indicate that the variant WCR is not present in the areas surveyed.

Next Steps:

Monitoring will continue as new information about the WCR variant spread is received.

Acknowledgements:

The willingness of various cooperators in eastern Ontario for allowing traps to be established on their farms is greatly appreciated.

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Location of Project Final Report:

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