

2005 Western Corn Rootworm Variant On-Farm Survey

Purpose:

Corn rootworm damage has been observed in some first year corn fields in various U.S. States, including parts of Michigan and Ohio. Starting as early as the 1990's, in some regions where a strict corn-soybean rotation was followed, a biological selection was made for a new root worm variant. With the strict corn-soybean rotation, larvae hatching from eggs laid in soybean fields emerge in first year cornfields causing root injury, lodging and yield reduction. In 2005, 10 soybean fields in eastern Ontario were surveyed in August to track the presence, density and distribution of any 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.

- 10 soybean fields were randomly selected with each field being adjacent to a second year (or more) corn field.
- The survey for adult WCR was conducted for a 4 week period in August.
- Each field was surveyed with 4 unbaited Pherocon AM yellow sticky traps set 15, 30, 60, and 90 m (50, 100, 200 and 300') respectively from the edge of the soybean field adjacent the corn field (see figure 1.).
- Economic losses of corn due to WCR variant root feeding can occur if trap capture in soybean fields the previous year averages greater than three beetles/trap/day.

Results:

Table 1. Average number of Northern Corn Rootworm trap-capture per day using Pherocon AM traps.

Field Location	Trap – 1 15m (50')	Trap – 2 30m (100')	Trap – 3 60m (200')	Trap – 4 90m (300')	Ave.
Glengarry 1	0.00	0.00	0.00	0.00	0.00
Glengarry 2	0.00	0.00	0.00	0.00	0.00
Russell 1	0.03	0.00	0.07	0.05	0.04
Stormont 1	0.13	0.07	0.13	0.07	0.10
Dundas 1	0.03	0.03	0.00	0.00	0.02
Dundas 2	0.00	0.00	0.00	0.00	0.00
Dundas 3	0.00	0.00	0.00	0.00	0.00
Dundas 4	0.00	0.00	0.00	0.00	0.00
Dundas 5	0.00	0.00	0.00	0.00	0.00
Dundas 6	0.00	0.00	0.00	0.00	0.00

Summary:

No Western Corn Rootworm was captured. Average trap-capture numbers per day for Northern Corn Rootworm are listed in Table 1. The maximum number of Northern Corn Rootworm captured was 0.10 beetles per day, which is approximately 3% of the economic threshold of approximately 3 beetles per trap per day. The fact that no Western Corn Rootworm was captured indicates that the variant WCR is not present in the areas surveyed and that crop rotation continues to be an effective method of managing corn rootworms. Similar observations were made in southwestern Ontario by Dr. Art Schaafsma at Ridgeway College.

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.

Project Contacts:

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Location of Project Final Report:

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