

Western Bean Cutworm Monitoring In Corn and Soybeans 2008

Purpose:

To monitor for the presence and early detection of a new pest, western bean cutworm, *Striacosta albicosta* (Smith) in corn fields and bean fields in southern Ontario.

Methods:

Sixteen locations in southern Ontario were monitored for the presence of adult moths from June 23 to August 25, 2008. One pheromone trap per location was established in accordance to the specifications outlined by Dorhout and Rice (2008). Each trap was made from a one gallon plastic milk carton jug with four inch windows cut from each side (Figure 1). A 2" high floor was left at the bottom of the jug to hold a 4:1 mixture of water and antifreeze. A few drops of dish soap were also added to the mixture each time the trap liquid was refreshed. A paper clip hung on the inside of the jug through a hole punctured at the top of the jug cap. A pheromone lure specific for *S. albicosta* purchased through Great Lakes IPM was punctured by the other end of the paper clip and hung inside the jug. The trap was secured to a post placed at the edge of a corn or edible bean field and hung five feet from the ground. The liquid mixture was kept topped up and traps were inspected as frequently as required (at least twice a week) to maintain liquid levels and to strain out incidental insects that were captured. The pheromone lure was changed every four weeks. Suspect moths found in the traps were collected in vials and brought back to the lab for proper identification. At trap locations where moths were captured, neighbouring corn and/or edible bean fields were scouted one week after capture and weekly thereafter until the end of August. Twenty plants in five areas of the field were examined for egg masses and larval activity. In corn, the top four to six leaves of the plant were inspected as well as any developing ears, while in edible beans, all leaves and pods on the plant were inspected.

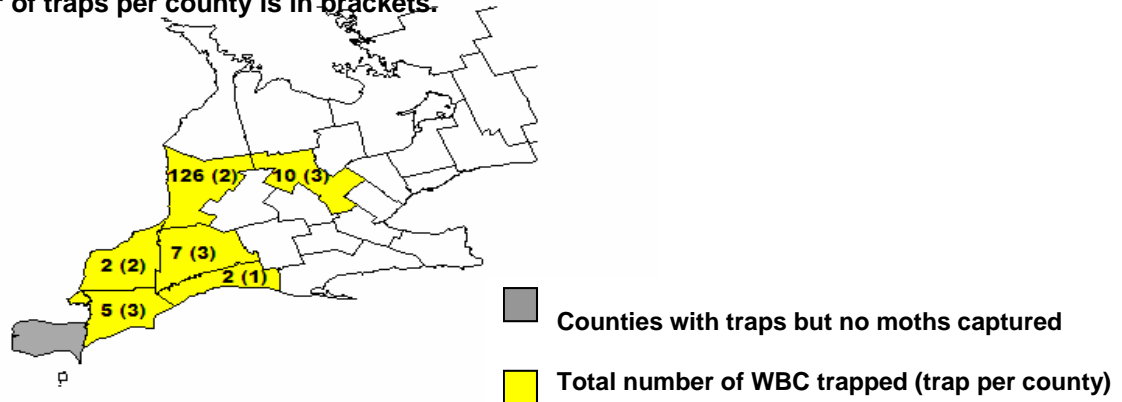


Figure 1. Picture of a western bean cutworm trap at the edge of a corn field.

Results:

Twelve of the 16 trap sites captured moths in 2008 (Fig. 1, Table 1). This is the first documented observation of western bean cutworm moths being present in Ontario as traps in 2007 did not capture moths. Port Lambton was the first location to capture moths. The total number of moths captured at all locations was quite low, with the exception of the trap site near Blyth, Ontario which captured a total of 123 moths by the end of the season. Moths were also captured at this location three weeks longer than other locations, with moths captured up to the end of August. The four trap locations that did not capture moths were all located in the southern most area of the province.

Figure 1. Western bean cutworm trap results from 2008.
Number of traps per county is in brackets.



Field scouting was initiated at active trap sites one week after first moth capture and continued weekly thereafter. One egg mass containing 55 eggs was found in the corn field at the Glencoe site on July 27. This was the only egg mass found the entire season. Given the high moth counts, additional scouting was done in corn in October near the Blyth trap. All corn fields within a 2 km radius around the trap were scouted for ear damage. No damage by western bean cutworm was found. To date, no reports of damage by western bean cutworm has been reported in Ontario. In 2009, a trapping network of up to 150 traps will be established in southern Ontario to determine where the edge of the range expansion is and scouting efforts will continue to determine if western bean cutworm is establishing itself in Ontario.

Summary:

Western bean cutworm has been spreading rapidly across the US midwest since 2000, causing economic damage in both corn fields and dry edible beans. Trapping efforts in Ontario in 2008 indicated that western bean cutworm moths have now arrived in Ontario. Though damage has been reported in both corn and edible bean fields in some counties, or in Michigan in both 2007 and 2008, no damage was found or reported in Ontario. It is suspected to have overwintered in Michigan in 2007 and will most likely successfully overwinter in Ontario once it becomes established.

Next Steps:

Monitoring for this pest in Ontario will continue in 2009, with a substantial increase in the number of sites monitored. A trapping network of up to 150 traps will be established and field surveys at active sites will determine the extent of damage and range expansion of this new pest. Trapping and scouting information will be made available to all corn and bean growers in Ontario on a weekly basis through various media reports and growers and consultants will be alerted to any infestations that require management.

Acknowledgements:

We would like to thank our co-operators for providing us with the fields to set up traps for monitoring. Funding for this project was provided in part the Ontario Corn Producers' Association and the Ontario White Bean Producers.

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Table 1. Ontario Western Bean Cutworm Trap Results for 2008

Location	Total # of Moths Captured Weekly									Total Captured in Season
	06/30	07/07	07/14	07/21	07/28	08/04	08/11	08/18	08/25	
Woodslee	0	0	0	0	0	0	0	0	0	0
Belle River	0	0	0	0	0	0	0	0	0	0
Tilbury	0	0	0	0	0	0	0	0	0	0
Chatham	0	0	4	0	0	0	0	0	0	4
Ridgetown	0	1	0	0	0	0	0	0	0	1
Port Lambton	1	0	0	1	0	0	0	0	0	2
Glencoe	0	2	1	0	0	0	0	0	0	3
St. Thomas	0	1	1	0	0	0	0	0	0	2
Forest	0	0	0	0	0	0	0	0	0	0
Thorndale	0	0	0	0	0	1	0	0	0	1
London	0	0	0	0	2	1	0	0	0	3
Centralia	0	0	0	2	0	1	0	0	0	3
Elora	0	0	0	0	2	0	0	0	0	2
Blyth	0	0	1	0	35	65	13	4	5	123
Harriston	0	0	0	0	2	2	1	0	0	5
Monck	0	0	0	2	2	1	0	0	0	5

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References Cited:

Dorhout, D.L., and M.E. Rice, 2008. 'An Evaluation of Western Bean Cutworm Pheromone Trapping Techniques (Lepidoptera: Noctuidae) in a Corn and Soybean Agro ecosystem'. J. Econ. Entomol. 101: 404-408.

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