

Ontario Western Bean Cutworm Trap Network

Purpose:

To provincially coordinate the monitoring of Western Bean Cutworm (WBC) and disseminating timely management recommendations for this new emerging pest of corn and dry beans in Ontario.

Methods:

- Western bean cutworm trap network webpage was established at www.cornpest.ca. A web-based workshop and educational material were developed and also provided on this site.
- Trap supplies were ordered and distributed to trap participants with several pick up locations established across Ontario for participants to attend and collect their supplies
- ID cards and a workbook was provided to aid in proper identification
- Traps were set up and monitored at least once a week from June 20th to September 14th. The antifreeze/water mixture was kept topped up by participants and pheromone lures were changed once every three weeks. Each participant tallied the total number of moths captured in their trap site each week, and the data was sent in to the principle investigator through the online trap data collection page of the WBC trap network website at www.cornpest.ca or via fax to the OMAFRA-Ridgetown office.
- Data collected was used to produce both weekly and accumulated trap catch maps for all trap sites across Southern Ontario and Eastern Ontario/Southern Quebec. Maps were displayed on the WBC trap network website and were also provided in newsletter articles.
- A designated email address at wbctrapnetwork@gmail.com was created for all participants to communicate with the WBC trap network team. When uncertain, specimens were collected and sent for ID to WBC team by trap participants. Photos were also often sent by participants to the principle investigator for confirmation on identification of moths and larvae.
- Online data entry and weekly scouting maps were produced and distributed through the WBC Trap Network website and through various ag. media outlets
- Any trap sites with significant moth activity (>100 moths captured) were scouted by the principle investigator and summer staff at least once during the season. Egg masses, larval activity and feeding damage were documented, if present. Later into the season, the principle researcher was contacted by other producers and ag. reps who found larval activity. The principle researcher and crew made every effort to also scout these locations to help gain perspective on the level of infestations and economic impact.

Results:

- 166 milk jug pheromone trap sites were established across Ontario and southern Quebec, monitored by producers, crop consultants, OMAFRA staff and ag. reps who

were trained through the WBC workshop/network. 155 were in Ontario, 11 were in southern Quebec. 19 trap sites were in dry bean fields, 147 were in corn fields.

- Weekly trap maps were developed from June 22 to Sept 7th by principle investigator and distributed to Ontario growers. Results from traps were used to develop timely recommendations.
- The western bean cutworm (WBC) trap network was very successful this year. Based on this year's results, WBC is continuing to spread further north and east into Ontario and the Great Lakes Region. Many counties in Ontario and Quebec had caught WBC moths for the first time (Figures 1a, b & 2) compared to trap results from 2008. A total of 1958 moths were captured in Ontario and Quebec this year. The first moth captured in Ontario was in Essex (Essex County), during the week of June 22nd. The last moth to be captured was in Blyth (Huron County) during the week of September 7th.
- The most eastern and northern WBC moth catch documented in North America was near Nicolet, Quebec, found through this trap network.
- Huron County captured the most moths again this year (541 moths), with one bean sites near Blyth alone catching 243 of those moths. Middlesex County had the next largest capture with 248 moths captured. Both Chatham-Kent and Lambton counties come in third, each catching 221 moths.
- Feeding damage was observed in many counties across Ontario. No egg masses were found by the WBC team. Larvae and feeding damage was observed in both corn and dry beans though damage was not at economic levels.
- Moth catches peaked in Ontario on the week of August 10-16th (Figure 2), similar to Michigan and approximately one month later than Ohio and Indiana.

Summary:

166 milk jug pheromone trap sites were established and monitored by OMAFRA staff and properly trained growers, ag. reps and consultants in 2009. A total of 1958 moths were captured in Ontario and Quebec this year. Results from this study in 2009 indicate that the pest has expanded further into the Great Lakes Region, making Nicolet Quebec the furthest documented location for this pest in North America. Valuable information on pest range expansion, feeding activity and phenology were also documented.

Next Steps:

Additional trap sites will be added to the network in 2010 and even stronger communication between neighbouring states and provinces is planned. 4H volunteers will be located, to help educate and involve the rural youth, developing their interests in pest management. A proposal for additional funds through the DIAP program, matching funding through this project has been put forward to fund a PhD student and additional staff to work on WBC biology, management strategies and control options for corn and dry beans in Ontario. A coordinated approach to research with Michigan, Ohio, Indiana, NY and Pennsylvania are underway. Pooling resources and synergizing efforts will expedite the production of sound management recommendations for this new emerging pest in the Great Lakes Region.

Acknowledgements:

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Location of Project Final Report: Grain Farmers of Ontario Research Report

Western Bean Cutworm Trap Network 2009 Cumulative Trap Catches for Southern Ontario

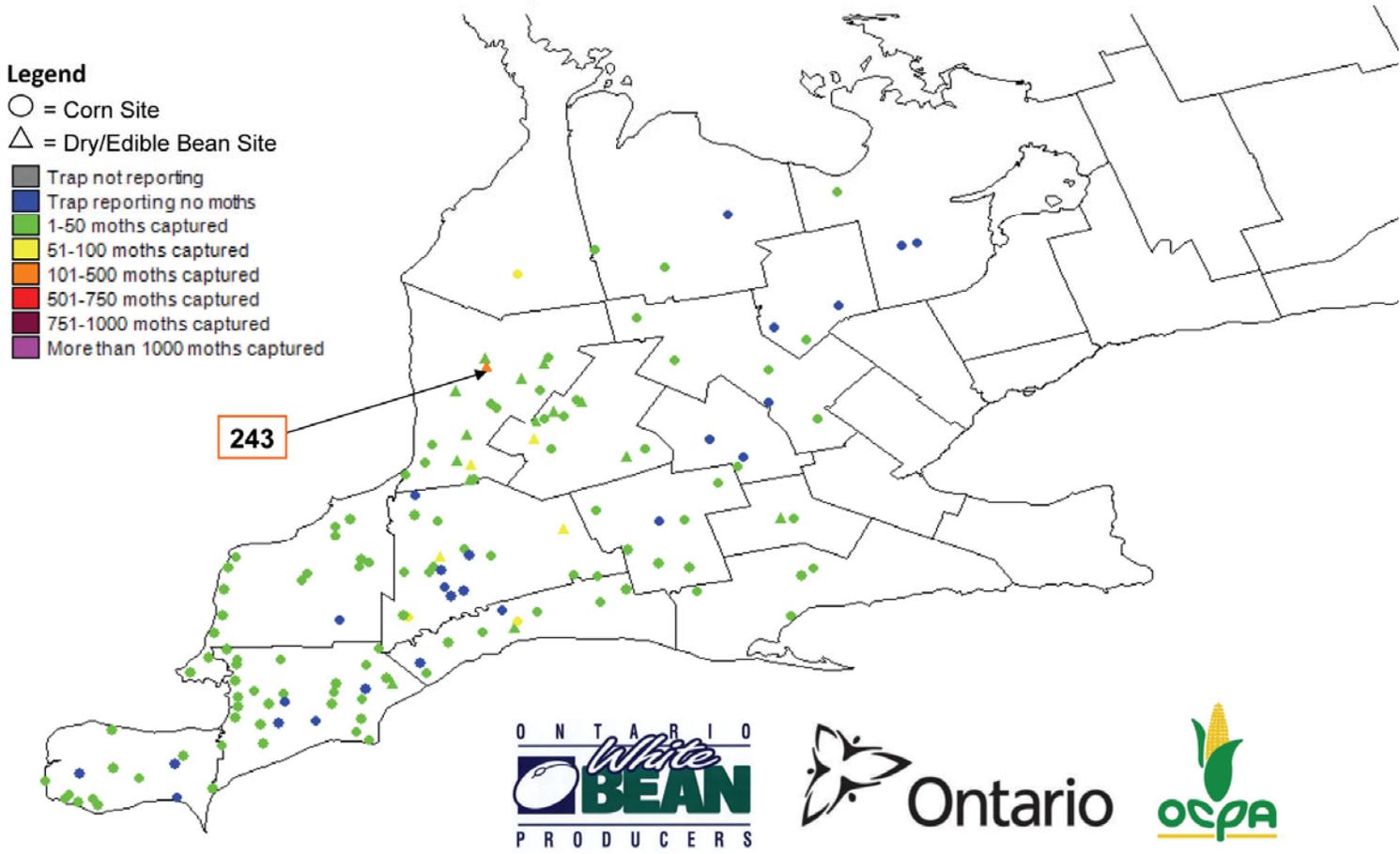


Figure 1a . 2009 Cumulated Moth Trap Catches for Southern Ontario

Western Bean Cutworm Trap Network 2009

Cumulative Trap Catches for Eastern Ontario and Southern Quebec

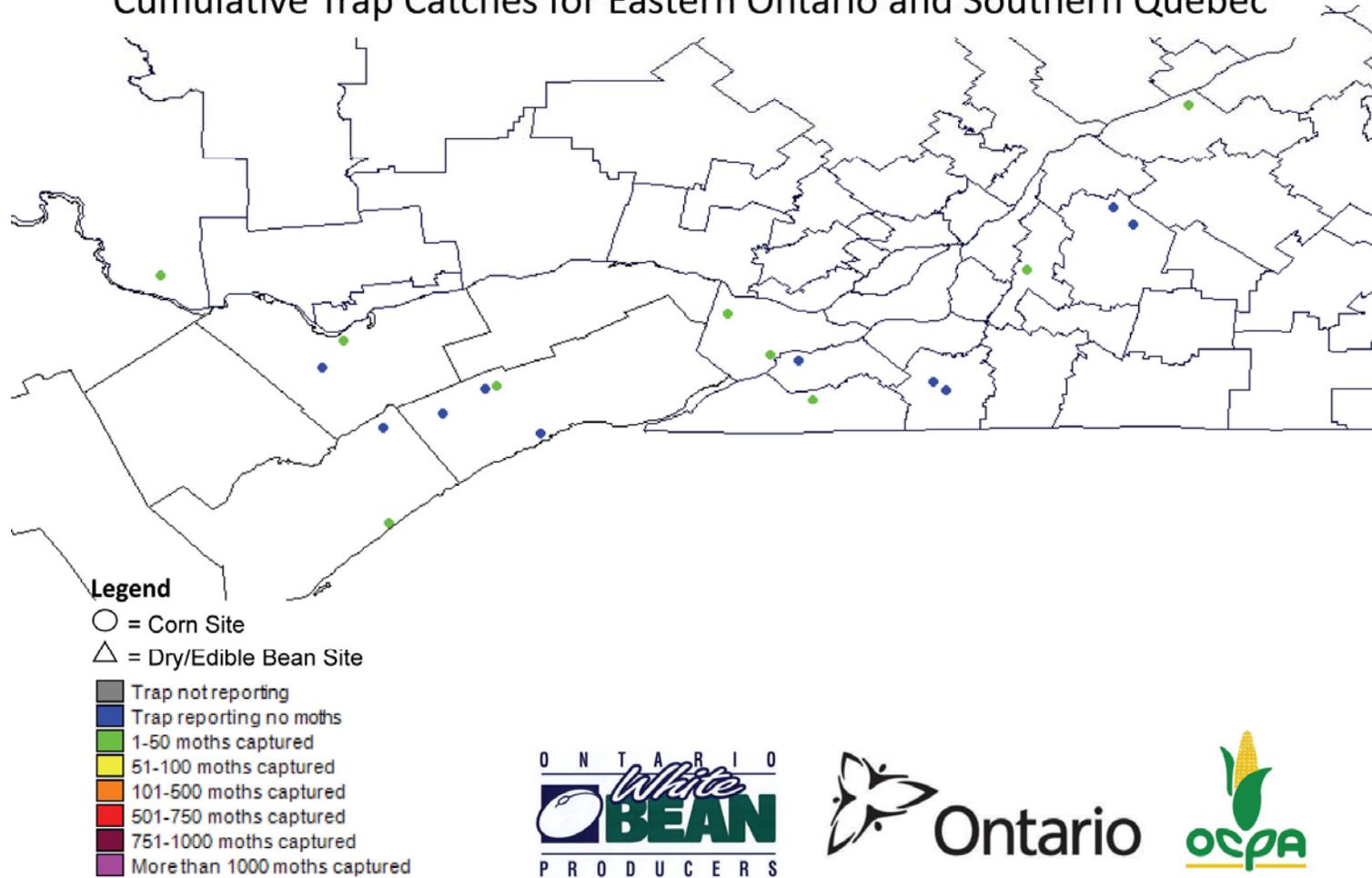


Figure 1b. 2009 Cumulated Moth Trap Catches for Eastern Ontario and Southern Quebec

Ontario and Quebec WBC Trap Catches 2009

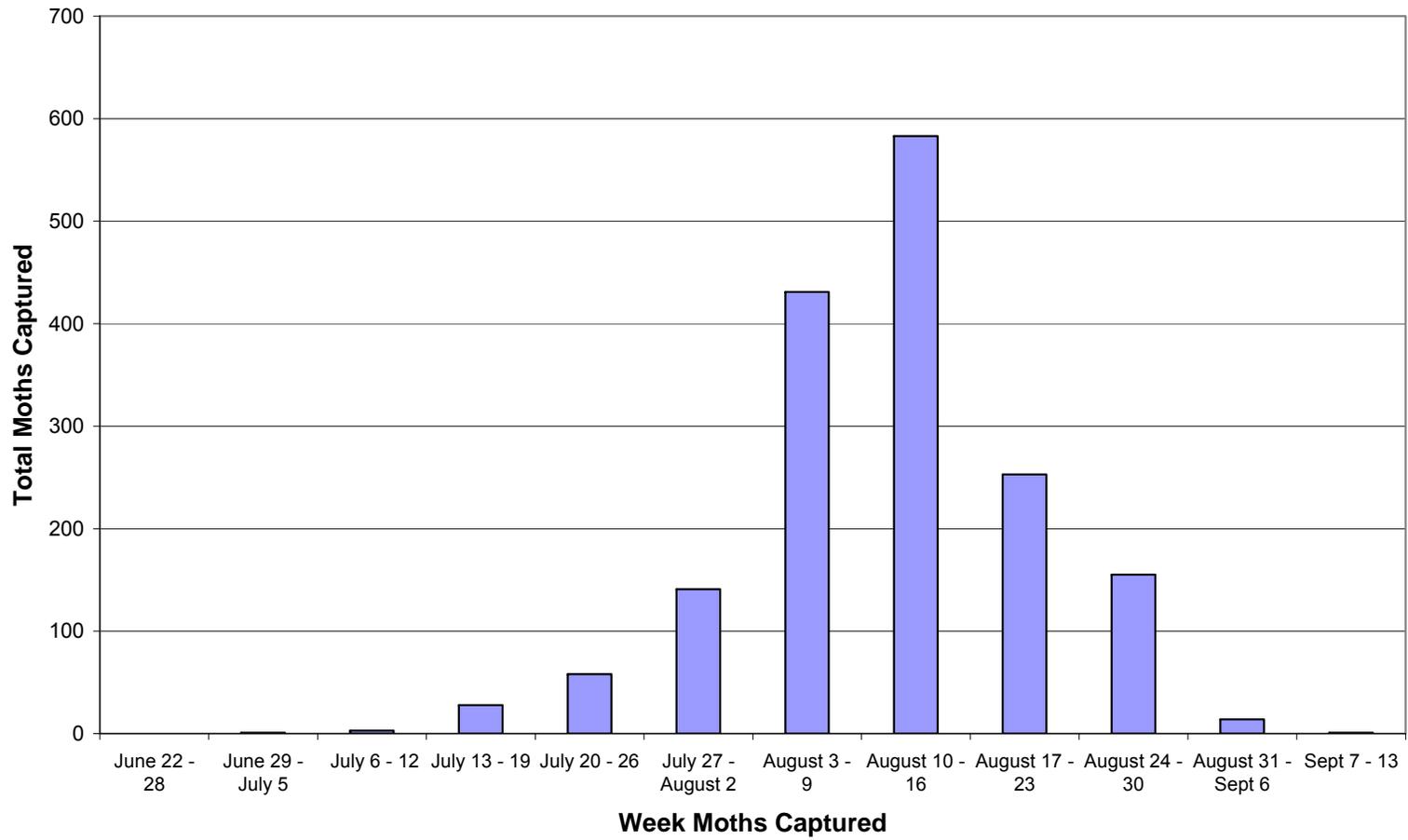


Figure 2. Total WBC Moth Catches By Week in Ontario and Quebec.