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Western Bean Cutworm (*Striacosta albicosta*)

by Jonathan Zettler, CCA

History

Western Bean Cutworm (WBC) is a moth native to North America and has historically resided in the Southwestern US. Recent expansion has been into the Midwest United States, such as Illinois, Iowa, Michigan and Ohio. Since 2000 the pest has slowly moved in an easterly direction, feeding on edible bean and corn crops. In 2009, several counties in western Michigan had damage that reached economic threshold in corn and edible beans. The first documented trap catch of Western Bean Cutworm in Ontario was in early July 2008. As of November 2009 there has not been documented economic damage from this pest in Ontario.

Growth Habit

Western Bean Cutworm over winters in the soil as pupae, it is unknown if they will over winter in Ontario. In the spring they emerge from the soil as adults. During the day you can find the cutworm moths in the whorl of the corn. The adult cutworm moths lay eggs on erect corn leaves, usually the top 3-4 leaves. Eggs masses can range from 200-500 eggs. The eggs are size of a pin and shaped like small cantaloupe, and hatch within 7 days of being laid. WBC egg color changes with age, Day 1 pearl white, and Day 7 purple/hatching.

The majority of economic damage to the corn plant occurs in August when larvae are feeding on the ear.

Larvae will disperse 12 ft within the row from the egg mass and up to 10 feet across rows.

Larvae initially move upwards toward the tassel (pre tassel), and then after tassel formation attack the ear. Larvae enter the ear from the side and the silks. When entering from the side cutworms give the ear a shot gun appearance (circular holes) after feeding. Expect grain quality issues to include ear rots and secondary pests.

Scouting and Threshold for Corn

To scout for WBC, examine 20 plants in 5 areas of a field during July to the end of August. Focus on the three to four upper leaves of the plant, looking for egg masses and young larvae. Pheromone traps can be used to monitor for moth flight. This will indicate when to start scouting, as eggs are being laid.

Economic threshold in corn is reached when 5% of plants have eggs or small larvae. If you find fields that have reached this threshold, check with your Certified Crop Adviser for pest management strategies.

Scouting and Threshold for Edible Beans

As corn starts to tassel, WBC can move to neighboring edible bean fields to lay eggs. WBC feed at night on edible beans, while feeding on corn during the daytime. Eggs are laid on the underside of leaves deep in the canopy. WBC feeds on leaves until they are ½" long and then move on to eating pods (chewing into them). When not feeding, the insect will hide in the soil during the daytime. The WBC has similar dispersal patterns in beans as corn.

Action Threshold for WBC in edible beans is determined by the number of moths caught in a trap.

Accumulated Catch at Peak Flight

- Less than 700, low risk of damaging levels in the field.
- Between 700-1000, medium risk of damage to the beans, scout beans closely. Look for eggs, larvae and signs of feeding 10-20 days after peak, action will be required if pod feeding is present.
- Over 1000, risk is high and action will be required.

Action is recommended 10-20 days after the peak flight.

An ad hoc group of extension entomologists are currently assessing the threshold levels for the Great Lakes region. The group is working together to ensure the thresholds are applicable to the more humid Great Lakes climate, as the thresholds were developed for the drier Nebraska and Arizona states.

Edible bean fields neighboring corn fields that have reached threshold for Western Bean Cutworm will be affected and require action, consult with your Certified Crop Adviser on steps to be taken.

Trap Setup

Information on trap set up and monitoring can be found on the following website; www.cornpest.ca. Contract the OMAFRA Entomologist or your Certified Crop Adviser for more information.

Management Strategies for Corn and Edible Beans;

- Corn hybrids with the Cry1F protein provides some protection from WBC, feeding on the cobs is required for the Cry1F protein to be ingested by WBC.
- Deep tillage can help disturb and kill larvae overwintering in soil chambers.
- Heavy rain can reduce young larvae survival.
- Natural enemies such as lady beetles, spiders and others, feed on egg masses and young larvae.
- Currently there are no registered insecticides for WBC in Ontario; applications have been submitted to have WBC added to several insecticide labels.

REFERENCES

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This industry driven program helps ensure that Ontario crop producers are well served by those providing their crop production advice. This article was written by one of those CCA's.