

Title

2012 New York Sweet Corn Pheromone Trap Network

Project Leaders

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Cooperators

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Abstract

Three important insect pests of sweet corn, European corn borer, corn earworm, and fall armyworm, cause damage to ears in their "worm" or larval stage. These pests are moths in their adult stage. Traps baited with the pheromones that male and female moths use to find each other are set up near sweet corn production in NY. The trap catch information allows growers, consultants, and Cooperative Extension and vegetable processor field staff to track the flights of the adults of these three pests, and trap numbers contribute to making informed decisions about when sweet corn fields need to be scouted or treated with an insecticide. Starting in 2010, traps for a new pest, the western bean cutworm, were added to the trap network to track its' movement and numbers. This project is funded in part by in-kind contributions from growers and consultants who host and check traps.

Background and justification:

Sweet corn for the fresh and processing markets is an important crop throughout NY. In 2012, sweet corn was grown on approximately 21,700 acres in New York, with a value of 68.4 million dollars. Three major "worm" pests of sweet corn, European corn borer (ECB-E and ECB-Z), corn earworm (CEW), and fall armyworm (FAW) are moths in the adult stage; and can be monitored using pheromone traps. A new pest, the western bean cutworm (WBC), is moving into the area from its historic range in the west and has the potential to be an economically important pest of sweet corn, field corn, and dry beans. Pest management is an especially important aspect of fresh market sweet corn production because the unhusked ear is marketed, and buyers are frequently very sensitive to insect damage or the presence of larvae in the ear. Harvest quality requirements are different for processing corn, which usually receives fewer insecticide applications than fresh market corn. Integrated pest management practices are widely used on both crops to determine the need for insecticide applications. Pheromone trap catches provide valuable information to growers, consultants, and processor field staff making pest management decisions. Pheromone trap catches help growers and consultants decide when to start scouting fields for ECB, reinforce what scouts are finding, help choose the best spray

materials for the pest complex that's present, and alert the industry to the arrival of the two migratory pests, CEW and FAW.

Pheromone trap catches are an integral part of weekly pest update newsletters sent by the Cornell Vegetable Extension program to approximately 260 subscribers in nine counties. The trap catches are also posted on the NYS IPM Program web site, the Northeast Weather Association web site, and a regional web site that includes trap catches from several northeastern states, making the information available to a large number of growers and extension personnel.

Objectives:

- 1) Establish and maintain networks of pheromone traps for sweet corn pests in NY.
- 2) Provide regional trapping information and recommendations to Extension field staff, and consultants working with sweet corn growers.
- 3) Provide regional trapping information to growers, along with scouting and threshold recommendations.

Procedures:

- 1) Sets of one each of ECB-E, ECB-Z, CEW, FAW, and WBC traps were placed at each of 35 trapping locations. Scentry Heliothis net traps were used to trap ECB and CEW. The BCS/Agrisense Unitrap was used for FAW and WBC. Lures from Trece Inc. were used for both races of ECB. Lures from Hercon Inc. were used for CEW. Lures from Scentry Inc. were used for FAW and WBC. All lures were replaced every two weeks. ECB and some CEW traps were set up in mid-May at fresh market locations, and as processing fields approached tassel emergence in other locations. WBC traps were set up in late June. Remaining CEW, and FAW traps were set up in early to mid-July. Traps were placed at least 40 meters apart in grassy areas near corn fields, avoiding areas near hedgerows where air circulation is poor. Heliothis traps were mounted on posts such that the bottom of the trap is ~6" above the grassy canopy. Unitraps were hung from short stakes to which angle brackets had been attached and were placed either in the field or at the edge of the field. Whenever possible, traps were moved to new fields as the previous fields matured and became less attractive to moths.
- 2) In Western NY, cooperators checked traps weekly on Monday or Tuesday and sent catch numbers to Abby Seaman via phone or email. Weekly catches for each location were collated and posted, along with interpretation, and scouting and thresholds recommendations for fresh market sweet corn, on Tuesday evening on the sweetcorn.nysipm.cornell.edu web site. In eastern NY, traps were checked weekly and numbers included in the weekly pest update newsletter.
- 3) Information posted on the web site was used directly by subscribing growers, incorporated into crop and pest updates distributed weekly by regional extension programs to approximately 260 subscribers, or provided to growers via direct contact with collaborating consultants. All catches are also posted on the PestWatch web site (www.pestwatch.psu.edu/).

Results and Discussion

Higher than average temperatures contributed to early flights of European corn borer and western bean cutworm. We continue to see an early season (June) catch of corn earworm at some locations that indicates either early migrations or some overwintering in our area. Very few fall armyworm moths were caught in 2012. Contact Abby Seaman (ajs32@cornell.edu) for information on individual sites.