

Title: Western New York Pheromone Trap Network Survey**Project Leader(s):** Abby Seaman, WNY Vegetable IPM Educator**Cooperator(s):** Curt Petzoldt, Vegetable Coordinator, NYS IPM Program; National Agricultural Statistics Service New York Field Office**Abstract:**

The western New York pheromone trap network is an affiliation of extension staff, consultants and farmers, who collaborate to set up and maintain a network of pheromone traps near sweet corn fields throughout western New York. In 2006, traps were set up at 17 locations. The trap network is funded by the New York State Integrated Pest Management Program, and in-kind contributions from farmers and consultants who donate their time and mileage to check traps. This survey was developed by Abby Seaman and Curt Petzoldt and administered by the National Agricultural Statistics Service New York Field Office for the purpose of determining the impact of the trap network on the pest management practices of sweet corn growers in the 29 western New York counties in Seaman's program area.

Background and justification:

The western New York sweet corn pheromone trap network has been primarily funded by the New York State IPM Program since 1993. Traps for the three major sweet corn pests, European corn borer, corn earworm, and fall armyworm are set at 15-20 locations each season.

Cooperators check traps each week and call or email Abby Seaman with the numbers. Seaman then collates all trap catches and posts them, along with scouting and threshold information, on a listserv for Cornell vegetable extension faculty and staff, the NYS IPM Program web site, the Network for Weather and Environmental Awareness (NEWA), and the PestWatch web site, which tracks sweet corn pests in the Northeast. Extension colleagues in western New York include the information in their weekly pest update newsletter throughout the growing season. Because the NYS IPM Program has made a substantial investment in the trap network, this survey was conducted to determine the impact of the network on fresh market sweet corn growers' pest management practices.

Objectives:

To determine the impact of the pheromone trap network on grower's pest management practices in fresh market sweet corn

Procedures:

Questions for the survey were developed in collaboration with Curt Petzoldt. The National Agricultural Statistics Service New York Field Office (NASS) was contracted to administer the survey, and added a couple of clarifying questions after testing the survey with 10 farmers (Appendix 1). They identified 633 farms growing fresh market sweet corn in the western NY vegetable program area (29 counties). These operations were chosen because they had reported sweet corn acreage in the past. The goal was to survey at least 50% of farms in each county growing sweet corn.

NASS initially mailed the questionnaire out to the whole sample and allowed the operators two weeks to return it. If the questionnaire was not returned, they did a phone follow-up. Because of the requirement of at least a 50% response rate in each county, they kept track of the number of completed questionnaires we had received for each county and focused the telephone follow-up each day on those counties that were still under 50% response rate.

Results and discussion:

Overall, the response rate for the survey was 79%. They achieved at least a 50% response rate in all counties. The lowest response rate was 50% in Seneca county, while the highest response rate was 100% in Cattaraugus county. For confidentiality reasons, they combined the responses from Herkimer and Otsego into Oneida county.

We had 347 positive responses (indicating a positive value for sweet corn acreage), while 156 were valid zeros (no sweet corn grown). Refusal rate was only 8% for the entire sample, but we had a 13% inaccessible rate (unable to be contacted).

Twenty one percent of surveyed farmers are getting the pheromone trap network report. Eighty four percent received the information from Extension, 21% from a consultant, 4% from the web, and 7% from other sources. Of those who do not receive information from the trap network, 56% reported being unaware of the trap network, 25% were in a location that did not have traps set up nearby, 20% did not subscribe to the weekly extension pest update, 16% were in an area where weekly pest updates were not available, and 3% did not find the information useful. These results indicate that there are real opportunities to increase access to the trap network, especially by publicizing its availability on the web, and also by increasing the number of trapping locations.

Eighty six percent of those getting the trap network information are satisfied with the quality (level of pest infestation at harvest) of their sweet corn as compared with 66% of those not getting the trap information, suggesting that access to the trap information increases farmers' success growing sweet corn. Ninety three percent of those receiving trap catch information scout their fields, compared with 66% of those who do not, suggesting that access to the trap network information contributes to increased adoption of IPM practices. This increase may be because information about scouting and thresholds appears in newsletters or web postings along with the trap catches, although because such a high percentage of farmers receive the information through Extension, that contact undoubtedly plays an important role.

When farmers were asked what the impact on their sweet corn pest management practices would be if the trap network information was not available, of those who currently receive trap catches, 26% indicated that they would spray more, 53% said they would need to do more scouting, 19% thought they would have more worm damage at harvest, 15% indicated that they would get their own traps, and 16% thought it would have no effect on their sweet corn pest management practices.

Estimated Economic Impact

The 2002 census data reports total and processing sweet corn acreage, but for many counties, acreage of processing corn is not disclosed so it is not possible to calculate acreages for fresh market corn by county. The following figures are based on the total acreage of fresh market sweet corn in New York (25,025 in 2002), and assume a yield of 1000 dozen ears per acre, a direct market price of \$3.00 per dozen, a wholesale price of \$1.50 per dozen, and an average price of an insecticide application at \$20 per acre including application costs. For scouting costs, I estimated 2.50 per acre per scouting trip.

- Each 5% increase in worm damage would cost New York sweet corn growers \$3,753,750 if marketing direct, and \$1,876,875 if marketing wholesale.
- Each additional scouting trip through the field would cost \$62,565.
- Each additional insecticide application would cost \$500,500.
- If each individual grower bought and maintained pheromone traps, it would cost each of them approximately \$120 per year, for a total of \$135,840 for the 1,132 farms that reported growing fresh market sweet corn in the 2002 census.

Action steps:

Publicize the availability of the information through channels other than weekly Extension program pest updates.

Expand the trap network into additional counties based on the number of farms growing sweet corn, or grower or processor interest.

Project location(s):

The following counties were included in the survey:

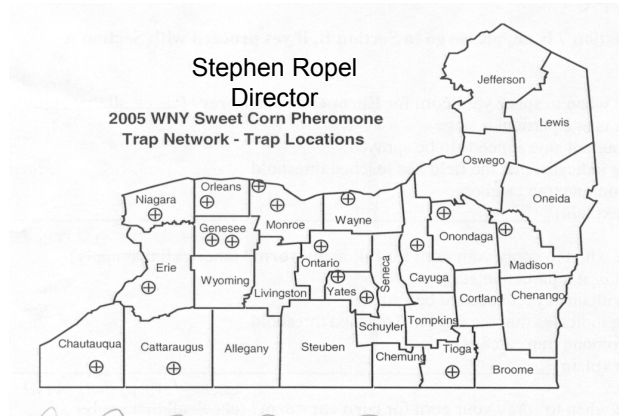
Allegany	Monroe
Broome	Niagara
Cattaraugus	Oneida
Cayuga	Onondaga
Chautauqua	Ontario
Chemung	Orleans
Chenango	Oswego
Cortland	Schuyler
Erie	Seneca
Genesee	Steuben
Jefferson	Tioga
Lewis	Tompkins
Livingston	Wayne
Madison	Wyoming
	Yates



2006 SWEET CORN IPM SURVEY

USDA,'s National Agricultural Statistics Service, New York Field Office is conducting this survey for Cornell University. Cornell University conducts integrated Pest Management programming in the counties mapped below through a network of pheromone traps to track the flights of the three major worm pests of sweet corn. This survey will evaluate the impact of the trap network on sweet corn pest management in the program areas. **Completing and returning the survey will justify continued funding from the New York State Integrated Pest Management Program for the trap network, and identify areas in need of trap information or other pest management programming.**

Response to this survey is voluntary. If you choose to respond to this survey, your identity will be kept in complete confidentiality. Only your responses to the questions on the survey will be sent to Cornell. Thank you for your time!



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|---|---------------|----------------------------------|
| 1. How many acres of fresh market sweet corn do you grow? | Acres | <input type="text" value="102"/> |
| 2. Are you satisfied with the level of worms in your sweet corn at harvest? | YES=1
NO=3 | <input type="text" value="103"/> |
| 3. Do you receive weekly reports of sweet corn pest pheromone trap catches? | YES=1
NO=3 | <input type="text" value="104"/> |

If you answered "yes" to question 3 please answer question 3a, if "no" please answer 3b.

3a. How do you get the trap catch information? *(Enter 1 for all that apply)*

Weekly extension pest update	110
Crop consultant	111
Web site	112
Other _____	113

3b. I don't get weekly pheromone trap information because:

Traps are not set up in my area	120
No weekly pest update is available in my area	121
A weekly pest update is available in my area but I don't subscribe	122
I don't think pheromone trap catches are useful	123
Unaware of trap catch program	124

4. Are your sweet corn fields scouted?

No	130
Yes, by me	131
Yes, by my employee	132
Yes, by my crop consultant	133

4a. If your fields are scouted by a crop consultant: Does your crop consultant also sell you pesticides?	YES=1 NO=3	140
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5. Do you use insecticides <i>(including those approved for organic production)</i> to control worms in your sweet corn?	YES=1 NO=3	141
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If your answer to question 5 is yes, please go to Section A, if no proceed with Section B

SECTION A

1. How do you decide when to spray your sweet corn for **European corn borer**? *(Enter 1 for all that apply)*

When the corn is at a particular stage	200
When my consultant says it needs to be sprayed.....	201
When scouting indicates that the field has reached threshold.....	202
Based on pheromone trap catches	203
Other <i>(Please explain)</i> _____	204

2. How do you decide when to spray your sweet corn for **fall armyworm**? *(Enter 1 for all that apply)*

When the corn is at a particular stage	210
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When my consultant says it needs to be sprayed.....	211
When scouting indicates that the field has reached threshold.....	212
Based on pheromone trap catches.....	213
Other (Please explain).....	214

3. How do you decide when to spray your sweet corn for **corn earworm**? (Enter 1 for all that apply)

When the corn is at a particular stage	220
When my consultant says it needs to be sprayed.....	221
When scouting indicates that the field has reached threshold.....	222
Based on pheromone trap catches.....	223
Other (Please explain).....	224

4. If you currently receive trap catch information and it became unavailable how would it impact your sweet corn pest management practices? (Enter 1 for all that apply)

It would have no effect.....	230
I would need to spray more.....	231
I would spend more time scouting	232
I would get my own traps	233
I would have more worms in my corn at harvest.....	234

5. How much per year do you estimate it would cost to monitor the pest flights yourself? (Enter 1)

Less than \$100.00	250
\$100-\$500.00	251
More than \$500.	252

SECTION B: Questions for growers who do not use insecticides on their sweet corn

1. Do you take any action to control worm pests in your sweet corn?	YES=1 NO=3	300
1a. If yes, what action do you take? (Enter 1 for all that apply)		
Keep my soil healthy and in balance so pests are not a problem.....		301
Plant pollen and nectar sources to encourage native natural enemies		302
Purchase and release natural enemies (If so, which enemies?		303
Hand pick pests (If so, which technique?		304
What technique do you use? Other (Please describe)		305

2. Do you use trap catch information to help with any of these techniques?.....	YES=1 NO=3	310
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THANK YOU FOR YOUR ASSISTANCE!