

**Title:**

Tomato Commodity Survey 2014

**Project Leader(s):**

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**Cooperator(s):**

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**Abstract:**

A CAPS (Cooperative Agricultural Pest Survey) of tomatoes was conducted for one exotic insect pest and three exotic tomato diseases. A total of 13 farms in 12 counties were surveyed bi-weekly for both the insect and disease pests. Suspect samples were sent in to either Cornell's Insect Diagnostic Lab or Cornell's Plant Disease Diagnostic Clinic. No positive samples were found on any of the 13 farms surveyed.

**Background and justification:**

Fresh market yield of tomatoes in New York was valued at \$32.4 million in 2013 making NY the 7<sup>th</sup> largest tomato producing state based on production value ([2013 USDA Annual Vegetable Summary](#)). With such a highly valuable crop, early detection of exotic pests is critical to the crops protection and potential pest eradication.

A survey targeting three diseases and one insect pest was conducted throughout New York. Two of the diseases are bacterial, bacterial spot, *Xanthomonas gardneri*, which is found in Ohio, Pennsylvania and Michigan but not in New York and bacterial Wilt, *Ralstonia solanacearum*, which is found worldwide except for USA and Canada. The third is a viral disease, whose causative agent is a previously unknown virus found in both Pennsylvania and Virginia in 2012. The insect pest, tomato leafminer (TLM)- *Tuta absoluta*, has not been found in the US. TLM is native to South America and was first detected in Spain in 2006. It has continued to spread throughout southern Europe and northern Africa. It is considered a serious pest in both its native range as well as introduced areas.

**Objectives:**

1. Survey, using APHIS approved protocols, traps and lures, for tomato leaf miner (*Tuta absoluta*) in tomato fields. Submit any suspect samples to Cornell University Insect Diagnostic Lab.
2. Monitor and scout tomato fields bi-weekly for symptoms of the 3 target diseases. Submit any suspect samples for determination to Cornell's Plant Disease Diagnostic Clinic

**Procedures:**

We followed the [CAPS approved survey method](#) to survey and monitor for *Tuta absoluta* (TLM). Protocols for the three exotic diseases created in 2013 were used to monitor for bacterial spot (BS), bacterial wilt (BW) and the unknown virus (UKV).

Traps for TLM were initiated late June to late July throughout western, central and eastern NY (Figure 1) and checked every two weeks. One trap was set per acre of tomatoes for a total of 25 traps. Any suspect insect samples were collect and sent to Jason Dombroskie of Cornell’s Insect Diagnostic Lab. Lures were replaced every four weeks according to protocol. A disease survey was also conducted every two weeks and any suspect samples were collected, placed into labeled Ziploc bags and stored in a cooler. Disease samples were initially screened by Dr. Chris Smart of the New York State Agricultural Experiment Station (NYSAES) and then sent out to Cornell’s Plant Disease Diagnostic Clinic if warranted. Surveying and trapping continued until late September or mid October depending on site (Table 1).

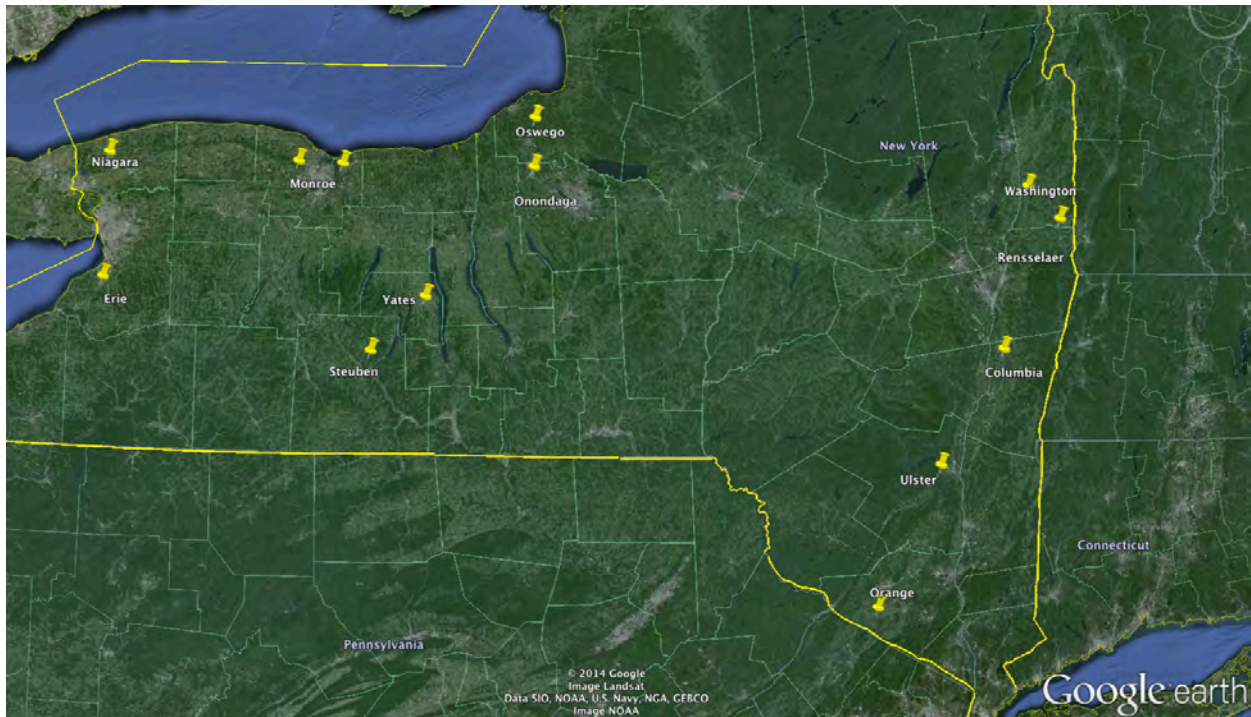


Figure 1. Map of NY showing the placement of the 13 survey sites.

Table 1. County locations for the 13 sites, including total tomato acreage surveyed, start and end dates, total services for the season, and results for TLM (tomato leafminer), BW (bacterial wilt), BS (bacterial spot), and UKV (unknown virus).

County	Acres	Start Date	End Date	# Services	TLM	BW	BS	UKV
Columbia	2	7/7/14	10/9/14	7	0	0	0	0
Erie	3	7/29/14	9/22/14	5	0	0	0	0
Monroe	1	7/3/14	10/10/14	7	0	0	0	0
Monroe	1	7/3/14	10/10/14	7	0	0	0	0
Niagara	2	7/29/14	9/22/14	5	0	0	0	0
Onondaga	5.5	6/30/14	9/29/14	6	0	0	0	0
Orange	1	7/14/14	10/6/14	6	0	0	0	0
Oswego	>1	6/30/14	9/22/14	7	0	0	0	0
Rensselaer	2	7/13/14	10/9/14	7	0	0	0	0
Steuben	>1	7/3/14	10/9/14	8	0	0	0	0
Ulster	1	7/7/14	9/29/14	6	0	0	0	0
Washington	2	7/3/14	10/9/14	7	0	0	0	0
Yates	>1	7/1/14	10/9/14	7	0	0	0	0

### Results and discussion:

Of the 13 farms surveyed, no exotic pests were found during the span of this survey. Four suspect insects were submitted to the insect diagnostic lab and all came back negative as *Tuta absoluta*. Only one sample of potential bacterial spot was submitted to the plant disease diagnostic clinic and it too came back negative for *Xanthomonas gardneri*.

During the survey other diseases were detected, including early blight, white mold, septoria leaf spot, bacterial speck, buckeye rot, late blight, bacterial canker, growers were immediately informed and advised on treatment options.

### Project location(s):

Surveys were conducted on tomato farms in Columbia, Erie, Monroe, Niagara, Onondaga, Orange, Oswego, Rensselaer, Steuben, Ulster Washington, and Yates counties.