



## **CORNELL VEGETABLE PROGRAM HIGHLIGHTS**

**JULY – SEPTEMBER 2014**

### **Rainy Season Favors Late Blight – Cornell Vegetable Program Responds**

The wet 2014 season was one of the most favorable in memory for the development of late blight, a destructive disease of tomatoes and potatoes. The Cornell Vegetable Program (CVP) was on-farm identifying the disease so growers could take immediate action, and collecting samples for strain identification. Weekly alerts of new county finds were included in our VegEdge newsletter so other growers could take protective action. Recommendations on scouting, identification, and fungicide sprays (fine-tuned by the Late Blight Decision Support System) were also included. A rapid response is needed to limit the spread of late blight because just one leaf lesion can produce 350,000 spores, each capable of starting an infection. The spores can move with winds for many miles. No fungicide can eradicate the disease.



2014 late blight lesions on a dry, sunny day, showing wide, light green borders.  
*Photo: Darcy Telenko, CVP*

Information on late blight, and the need for rapid communication of detections, was sent to all Cornell Cooperative Extension (CCE) agriculture staff and Master Gardener coordinators in 18 CVP and adjacent counties, by Carol MacNeil, Vegetable Specialist. Sample submission was encouraged for strain identification. Some strains are resistant to certain fungicides, and strains of different mating types can cross, producing new strains and soil-borne, over-wintering oospores. CCE staff, agribusiness reps, a consultant, growers and gardeners were assisted with identification and sample submission. Fifty-four late blight samples were submitted from the 18-county area, with 40 being positive or likely for late blight. (Only 22 samples were submitted from the other 37 upstate NY counties.) Two CVP counties had a late blight strain resistant to mefenoxam, the best fungicide against other late blight strains. Two CVP counties and an adjacent county had two new, unidentified late blight strains. Complete genetic analysis is needed to determine their origin. Several new strains found in WNY in 2010-11 originated from the crossing of mating types. Fortunately those new strains were not “fit” and didn’t survive. New York growers “dodged a bullet” back then, and to date late blight can still only develop from infected potato tubers or infected tomato plants from the South, not from the soil. The future of the two new late blight strains remains in question, however. The numerous samples submitted in our area by Cornell Vegetable Program staff, or with their assistance, helped lead to the detection, and pin-pointed the location, of the new strains.

### **Season Recap from Robert Hadad**

The weather had a huge impact on vegetable production and marketing this summer. Extensive rain made getting into the field a real headache for growers and many were held back from planting for as much as 6 weeks. Flooded conditions caused wet soils to harden up and that affected plant growth for most of the season. Leaf and fruit diseases caused reductions in yield and drastic losses in profits.

I spent the entire season dealing with disease and insect problems as well as nutritional deficiencies. Identifying the problems, recommending solutions, and following up on implementation kept me exceptionally busy. From planting time through harvest, there was one hurdle after another for many farmers to overcome.

This season, above all, seemed to bring out farmers we have not worked with either at all or in a very long time. Farmers appreciated us for being there and listening to their concerns. Even when we brought them bad news, having us there seemed to help them move on and look forward to working with us to help with other crops or the next season. As one farmer put it, “With the Cornell Vegetable Team in my corner, I can be optimistic about continuing to grow vegetables in the future.”

## Cornell Vegetable Program Aides Processing Vegetable Industry in Identification and Management of Crop Diseases

Each year, more than 35,000 acres of vegetable crops for the canning and freezing industry are planted in New York. These crops which include green peas, snap and lima beans, sweet corn, carrots, beets and spinach are valued at more than \$32 million. Processing vegetables are typically planted in fields ranging from 10 to 80 acres in size, where losses from pests can mount in to the thousands of dollars per field. Working with Cornell University Plant Pathologists, Cornell Vegetable Program staff members assist the industry each year in diagnosing disease issues and recommending management programs. The 2014 growing season was generally wetter than average. This favored bacterial brown spot and white and gray mold in beans. Numerous fungal diseases were detected in spinach in the fall. We researched fungicide resistance in beets and the cause of various leaf spots in lima beans.



Vegetable Specialist Julie Kikkert inspecting lima bean spots.  
*Photo: Angela Parr, CVP*

## Cornell Vegetable Program Determines How to Manage Devastating Weed Problem in Onions

Perennial sow thistle has emerged as a devastating weed problem in certain muck land areas where onions are grown in New York. Of special concern is the Elba muck where at least 20% of the 3000 acres of onion crop land are already severely infested. This perennial weed reproduces by specialized underground stems called rhizomes, which can grow about 6 feet in a growing season and produce several new plants along their length. When uncontrolled, Perennial sow thistle can significantly reduce onion yield up to 84% and growers can barely produce a marketable crop. The herbicides commonly used in muck onion production do not provide any control of Perennial sow thistle, leaving hand weeding as the only currently available option.

Unfortunately, hand weeding costs hundreds of dollars per acre and only exacerbates the problem, because it stimulates the rhizomes to produce even more plants. In 2013, Hoepfing and Buck studied how to manage

Perennial sow thistle in onions with a growth regulator type of herbicide, Stinger. While control was effective, the required rates and timing to the weed were harmful to the onions and resulted in unacceptable bulb injury. In 2014, field trials focused on strategies to align effective rates of Stinger to the susceptible stage of the weed and to the tolerant stage of onion. Data collected from 2013 and 2014 trials was used to support a request to IR-4, which is the first step towards getting Stinger labeled on onions. Hoepfing and Buck are working to combine several strategies into a management plan so that onion growers will have all the tools they need to economically control a once unmanageable and devastating weed.



Cornell Vegetable Program Extension Educator, Christy Hoepfing (right), and Program Aide, Elizabeth Buck (left) share the best management strategies for controlling Perennial sow thistle in onions at the annual Elba Muck Onion Twilight Meeting. (Weed is flowering in untreated check plot vs. clean plots with healthy onions in the plots treated with Stinger, a growth regulator type herbicide.)  
*Photo: Cordelia Hall, Cornell Vegetable Program*

## Farm Visits, Field Meetings, and Project Management – A Busy Season for Judson Reid!

This quarter reflects a frenetic season of farm visits, field meetings and project management. On-farm pest management workshops were conducted with all 5 produce auctions in the region, representing an opportunity for 7.5 pesticide license recertification credits. On farm trials of grafting, container production, living mulch and soil health were in full swing with data now being synthesized for the reporting/winter meeting season.



Living mulch (clover) trial in peppers.  
*Photo: Judson Reid, Cornell Vegetable Program*

## New Vegetable Specialist Dives Right In!

Since joining the Cornell Vegetable Program in May, Darcy Telenko has spent time getting reacquainted with the region and meeting producers, extension personnel and faculty. She assisted with monitoring and identifying pest issues (weeds, diseases and insects) on both conventional and organic fresh market vegetable farms and provided educational information and materials for farmers to utilize as they try to manage these pests.

Darcy hosted and organized an on-farm Vegetable Disease Management meeting in Eden Valley, in conjunction with Cornell University Plant Pathologist, Dr. Christine Smart. The 18 participants were engaged in discussions on disease identification and management. In addition, Darcy led a workshop in Allegany county in September on management of weeds and disease in vegetables. A farmer attending the meeting states that “some of this information I learned I will utilize on my farm in the future.”

Monitoring for major insects and diseases as they move into the state supported faculty programs and helped growers determine when pesticides needed to be applied. This included monitoring sweet corn insect traps and a survey of tomato diseases and insects not currently present in NY. Early detection assists extension and faculty to be on the front edge of the sword should a new pest move into NY. Regular scouting rounds in other crops helped monitor, identify and confirm late blight and cucurbit downy mildew as they moved into western New York. By catching these diseases early we are able to warn growers in the region to proactively treat susceptible fields.



Vegetable Specialist Darcy Telenko scouting tomatoes for diseases.

Photo: Cordelia Hall, CVP

## Newly Funded Grants

Each year, the Cornell Vegetable Program is tasked with generating a certain percentage of our operating funds, or Program Generated Income (PGI), through research grants, sponsorships, and meeting registration revenue. This quarter, we are pleased to have received the following grant funds:

- **USDA-NRCS Conservation Innovation Grant: Strengthening Networks to Accelerate Adoption of Soil Health Practices by New York Farmers**, (PI – D. Haight, American Farmland Trust; MacNeil, CVP), \$9,238 for work in the CVP region, 9/2/2014 – 8/31/2016.
- **Exploring the reproductive biology of the invasive swede midge to improve IPM in Brassica crops**, USDA-NIFA Crop Protection and Pest Management grant project (Chen, Hallet and Hoepting), \$250,000, 1/1/2015 - 12/31/2018).
- **Cultural Practices for Farmers Having to Deal with Phytophthora in Vine Crops and Peppers**, NESARE grant (O’Dea, Hadad). We hope to show through trials that this disease can be effectively managed through cultural practices rather than just with chemicals which would save farmers thousands of dollars.

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- **Together, over 1,700 farm visits and phone/email consultations were made by our Vegetable Specialists**
  - **17 educational events were organized by the Cornell Vegetable Program during this quarter**
  - **Nearly 900 people attended meetings where presentations were made by our Vegetable Specialists**
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For more information about our program, contact Julie Kikkert at [jrk2@cornell.edu](mailto:jrk2@cornell.edu) or 585.394.3977 x404 or visit our website

<http://cvp.cce.cornell.edu>



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