



A new pest to the Western Hemisphere threatens onions, garlic, chives, shallots, and green onions: the Allium leafminer.

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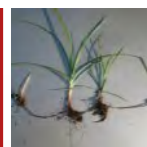
Cool soils in spring can be limited in phosphorus availability, but over application can induce zinc deficiency, a problem for tomatoes.

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There have been higher than normal reports of maggot damage in onions and brassicas this spring. Learn about the 3 most common maggots of veg crops.

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Yellow nutsedge in onion can be more readily controlled with post-emergent herbicides

BEFORE the plants produce rhizomes and side-shoots.

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# VEGEEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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Cornell University  
Cooperative Extension  
Cornell Vegetable Program

Photo: Judson Reid

## Pest Alert – Allium Leafminer

Information provided by Dr. Shelby Fleischer, Vegetable Entomologist at Penn State: <http://ento.psu.edu/extension/vegetables/pest-alert-allium-leafminer>; edited by Christy Hoepting, CCE Cornell Vegetable Program

The **Allium leafminer** also known as the onion leafminer (*Phytomyza gymnostoma*) was confirmed from infested leeks and onions collected in December 2015 from Lancaster County, Pennsylvania. This was the **first confirmed infestation in the Western Hemisphere**. It is native to Poland and Germany, but recently its **geographic range has been rapidly expanding**. Although the full host range is unknown, leeks tend to be described as the most damaged host, which may be influenced by the timing of the second generation and the planting of leeks. Infestations have also been reported in onion, garlic, chive, shallot and green onion. High rates of infestation have been reported: from 20 to 100 pupae per plant, and 100% of plants in fields. The literature suggests organic production and market garden production systems tend to be most at risk, perhaps due to insecticidal control in conventional production systems.



**Figure 1.** Leaf punctures arranged in a linear pattern towards the distal end of leaves may be the first sign of damage. Photo: UK Crown copyright.

continued on page 3



**VegEdge** newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 12 counties in Western New York.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

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*The next issue of VegEdge will be produced on June 1, 2016.*

## NYSERDA Agriculture Energy Audit Program

NYSERDA offers free energy audits to help eligible farms and on-farm producers identify ways to save energy and money on utility bills. Reports include recommendations for energy efficiency measures.

Eligible farms include but are not limited to dairies, orchards, greenhouses, vegetables, vineyards, grain dryers, and poultry/egg. The farms must also be customers of NYS investor-owned utilities and contribute to the System Benefits Charge (SBC). Check your farm's current utility bills to see if your farm pays the SBC.

NYSERDA will assign Flexible Technical Assistance (FlexTech) Program Consultants to perform energy audits to eligible farms. Three levels of audits are available: 1) a simple walk through for smaller and less complex operations, 2) a standard energy audit which looks at all farm systems and provides recommendations for energy efficiency upgrades and, 3) a more in depth audit which includes an analysis of a specific system and/or a renewable assessment. Choose the best fit for your farm and include your choice in the application.

To get started, visit [nyserda.ny.gov/agriculture](http://nyserda.ny.gov/agriculture) to download an application or apply online. Call 1-800-732-1399 to learn more, request an application, or for assistance with determining the audit level. ●



**Now is the time to scout.** Allium leafminers overwinter as pupae in plant tissue or the soil. Adults (tiny black flies with yellow head caps and knees) emerge in late winter (March) into spring (throughout April, perhaps into May), and lay eggs at the base of plant stems. Larvae mine leaves, and move downward into the base of leaves or into bulbs, where they pupate. Pupae may move into soil. These first generation pupae undergo a diapause or aestivation period which lasts throughout the summer, and develop into adults that emerge in the autumn (September / October). This second generation of adults lay eggs into *Allium* spp., which develop through the larval and into the pupal stage. These second generation pupae will overwinter. In late April of this year, adult Allium leafminer were already observed feeding on young onion seedlings.

**What to look for.** Leaf punctures arranged in a linear pattern towards the distal end of leaves may be the first sign of damage (Fig. 1). Leaves can be wavy, curled and distorted (Fig. 2). Larvae mine leaves, and move towards and into bulbs and leaf sheaths where they pupate. Leaf mines are most evident in plant types with thin leaves (chives). In those with larger leaves, it is often necessary to peel back the leaves to find the insect (Fig. 3). Both the leaf punctures and mines serve as entry routes for bacterial and fungal pathogens.

**Insecticides labeled for leafminers in onions and other Alliums that may be effective against Allium leafminer:**

- Trigard (cyromazine)
- Radiant SC (spinetoram)
- Mustang, Mustang Maxx (and its generics) (zeta-cypermethrin)
- Warrior II (and its generics) (lambda-cyhalothrin)

*For Organic Growers*

- Aza-Direct (and its generics) (azadirachtin)
- Entrust SC (spinosad)

*Products not specifically labeled for *Phytomyza gymnostoma* but may be effective*

- Agri-Mek SC (and its generics) (abamectin)
- Exirel (cyantraniliprole)



**Figure 2.** Plants infested with Allium leafminer may have wavy, curled or distorted leaves. Photo: L. Donovan



**Figure 3.** In Alliums with larger leaves, it is often necessary to peel back the leaves to find the Allium leafminer. Photo: L. Donovan

**If you suspect Allium leafminer,** contact your local CCE Extension Educator. Cornell Vegetable Program enrollees may contact Christy Hoepting at 585-721-6953 or [cah59@cornell.edu](mailto:cah59@cornell.edu) 📍

## Late Blight Risk – Potatoes are Emerging!

Carol MacNeil, CCE Cornell Vegetable Program

The first potato foliage was seen emerging on May 12 in small, protected muck fields in Wayne Co. 8-9 miles from Lake Ontario. Thus May 12 marks the beginning of the count of late blight (LB) Severity Value (SV) for all potato/tomato fields within 30 miles, regardless of when they're planted. If you had an uncovered tomato field (southern plants only) or potato emergence (planted, volunteers, culls) before that date, or in another county, please contact Carol MacNeil at

[crm6@cornell.edu](mailto:crm6@cornell.edu) or 585-313-8796. I am especially interested in areas west of Rochester or south of I-90. There are locations in WNY where SVs began to accumulate last weekend. LB was just confirmed in western MD on tomato in a small retail greenhouse operation.

All those planning to use the LB Decision Support System (DSS) or BlightPro, should be sure their fields and varieties are set up on the LB DSS website. Be sure to include your most susceptible variety! Input the date of the first to-

mato foliage (southern plants only) or potato foliage (culls, volunteers, planted) within 30 miles of your fields. When you've done this you can click on Get Reports to see SV accumulations and predictions for your area/ your fields.

If you have a LB DSS account but can't remember your username or password, or if you'd like a review of using the DSS, contact Carol MacNeil at [crm6@cornell.edu](mailto:crm6@cornell.edu) or 585-313-8796. 📍

# Remember Herbicide Rotational Restrictions when Planning Your Weed Management Program

Darcy Telenko, CCE Cornell Vegetable Program

Many residual herbicides have the potential to persist in the soil providing a longer window of weed control. As a consequence herbicide residuals may remain active in future growing seasons and could injure or kill in susceptible crops when planted. The length of time a herbicide will remain in the soil varies with climate conditions, soil type and production practices. A number of commonly used herbicides in vegetable production have rotational restrictions. If you are growing a diverse array of crops you need keep a close eye on these restrictions – careful reading of labels, documenting herbicide application dates, and careful planning can help you avoid future issues in your rotation scheme. (See the table for reference on a few common vegetable herbicides with rotational restrictions).

Table 1. Common Vegetable Herbicides with Crop Rotation Restrictions

Herbicide	Common name	Mode of Action	Rotation Restriction (months after application)				
			Dry bean	Sugar beet	Potato	Cucumber	Tomato
<b>AAtrex<sup>z</sup></b>	atrazine	5	21	21	10-18	21-33	21-33
<b>Acuron<sup>y</sup></b>	S-metolachlor, atrazine, mesotrione, bicyclopyrone	5, 15 & 27	10	18	10	18	18
<b>Armezon Pro<sup>x</sup></b>	topramezone, dimethenamid	15 & 27	9-18	9-18	9	18	18
<b>Callisto</b>	mesotrione	27	18	18	10	18	18
<b>Clarity</b>	dicamba	4	4	4	4	4	4
<b>Dual Magnum</b>	metolachlor	15	0	FS <sup>w</sup>	0	FS	6
<b>Eptam</b>	EPTC	8	0	10	10	10	10
<b>Impact</b>	topramezone	27	18	18	9	18	18
<b>Laudis</b>	tembotrione	27	10/18	10/18	10	18	10
<b>Lorox</b>	linuron	7	4	4	4	4	4
<b>Matrix</b>	rimsulfuron	2	10	18	0	10	0
<b>Optill</b>	saflufenacil + imazethapyr	2 & 4	4	40	26	40	40
<b>Outlook</b>	dimethenamid	15	0	10	10	10	10
<b>Permit</b>	halosulfuron	15	0	21	9	9	8
<b>Princep</b>	simazine	5	21	21	21	21	21
<b>Prowl</b>	pendimethalin	3	0	12	10	10	10
<b>Raptor</b>	imazamox	2	0	18	9	9	9
<b>Reflex</b>	fomesafen	14	0	18	18	18	18
<b>Sharpen</b>	saflufenacil	14	6	6	6	6	6
<b>Sonalan</b>	ethalfluralin	3	0	8/13	10	10	10
<b>Stinger</b>	clopyralid	4	10.5	0	18	18	18
<b>Treflan</b>	trifluralin	3	0	12	5	5	5

This table is a general guideline for crop rotational restrictions. Herbicide persistence and carry-over potential are variable and dependent upon soil and environmental conditions. Consult herbicide label for further information. Adapted from 2012 MSU Weed Guide <http://www.msuweeds.com/assets/2012WeedGuide/2012WGTable12new.pdf>

<sup>z</sup> Rotation increases with higher rates

<sup>y</sup> If applied after June 1, rotation to crops other than corn may result in injury.

<sup>x</sup> Rotation increases with higher rates

<sup>w</sup> FS= rotational crops may be planted the following spring. ●

# P & Zn in Spring Tomatoes

Judson Reid, CCE Cornell Vegetable Program

Spring fertility management for tomatoes often emphasizes phosphorus. This makes sense given the importance of phosphorus in root growth. Cold soils inhibit phosphorus uptake, so many growers increase the ratio and rate of application to get the nutrient in direct contact with the roots. However, phosphorus is banked in the soil when over applied. In our sampling of high tunnel soils across NYS we have found that phosphorus levels are excessively high on many sites, sometimes several orders of magnitude above recommended levels (Figure 1).

Is this a problem? Absolutely. In high pH and phosphorus soils an induced zinc deficiency can occur. Zinc is critical in a number of plant functions including flower production. Thus, there will often be a recommendation to apply zinc sulfate. Tomatoes only need ½ to 1 lb per acre of zinc, but it simply may not be available in these situations so application rates range from 10-20 lbs per acre. If making a banded application the rate is reduced to 1-2 lbs/ac. Zinc Sulfate is OMRI listed but the products generally carry the stipulation that it “may only be used as a plant or soil amendment with a documented zinc deficiency.”

Aside from the addition of zinc there are other management steps to prevent this issue.

- Soil test annually in the fall to get the most accurate measure of soil P levels.
- Fertilize in the spring and avoid fertilizers with a high P ratio (the 2<sup>nd</sup> number in the analysis).
- Apply sulfur if pH is beginning to climb
- Lay plastic well prior to transplanting to help warm the soil. This will make P more available and reduce the need to make excess application.
- Inject sulfuric or citric acid with irrigation water to reduce alkalinity and pH problems.
- Foliar test in season to make adjustments if necessary.



Cool soils in spring can be limited in phosphorus availability, but over application can lead to induced zinc deficiency. Photo: Judson Reid, CCE Cornell Vegetable Program

Element	lbs/acre*	Very Low	Low	Optimum	High	Very High
Phosphorus (P)	669					
Potassium (K)	2,616					
Calcium (Ca)	16,142					
Magnesium (Mg)	1,971					

Element	Value	Element	Value	Element	Value
Soil pH	7.8	Manganese (Mn), lbs/acre	56	Aluminum (Al), lbs/acre	4
Iron (Fe), lbs/acre	6	Zinc (Zn), lbs/acre	6	% OM	11.9

**Figure 1.** Phosphorus in this high tunnel soil is literally off the charts. Levels in excess of 40 lbs per acre are ranked as very high; this sample has 669 lbs/ac. Although zinc is high (6 lbs/ac), it may be deficient in the plant, restricting yield potential.

The above steps are part of a 2-year project CVP and NOFANY are conducting with support from the New York Farm Viability Institute. Thanks to Professor Steve Reiners for his input. 🍅



# Maggots, Maggots, Maggots

Christy Hoepting, CCE Cornell Vegetable Program

**There have been higher than normal reports of maggot damage in onions and brassicas this spring.** This is likely due to the cool spring slowing the growth of these newly transplanted crops. There are three species of maggot pests of vegetable crops including seedcorn maggot, cabbage maggot and onion maggot. They vary in the host crops that they attack and in the timing of peak emergence of the overwintering generation (Table 1). They all over winter in the soil as pupa, and emerge as adult flies in the spring. The adult flies mate within a few days and then the females seek out a suitable host to lay her eggs. Eggs hatch within a few days into larvae which feed on their host crop for 2-3 weeks before they pupate in the soil.

According to degree day accumulations, the overwintering generation of cabbage maggot and onion maggot have only just begun to emerge and their peak feeding activity is expected to occur within the next 2- and 3-4 weeks, respectively (Table 1). Comparatively, peak spring emergence of seedcorn maggot has already occurred. Therefore, the **maggots that are currently damaging brassica and onion crops are most likely seedcorn maggot**. Since conditions are favorable for maggots, it is likely that seedcorn maggot may also be infesting peas, beans, corn and vine crops. **If conditions remain cool and moist and early plant growth is slow, Brassicas and onions (and other Alliums like leeks) will be at risk for cabbage maggot and onion maggot, respectively within the next 2-4 weeks.**

**Table 1.** The differences among the three most common maggot pests of vegetable crops.

	Seedcorn maggot (SCM)	Cabbage maggot (CM)	Onion maggot (OM)
<b>Crops attacked:</b>	Corn, soybeans, beans, peas, vine crops, onions, brassicas	Specific only to Brassica/Crucifer/ Cole crops (cabbage, broccoli, radish, etc.)	Specific only to Alliums (onion, garlic, leeks, etc.)
<b>Maggots attracted to:</b>	freshly turned soil with decaying organic matter		Injured plants
<b>Peak emergence of over wintering adults in the spring:</b>	April-May 360 DD (base 39°F)	Mid-May <sup>1</sup> 452 DD (base 40°F) (corresponds to peak bloom of yellow rocket)	Late-May to mid-June 735 DD (base 40°F)
<b>May 17 Degree Day (DD) accumulation or % emergence of over wintering generation</b>	Peak emergence occurred 1-2 weeks ago (SCM are in the larval stage)	30-87% (too early; some flies have emerged; peak activity expected in 2 weeks)	320 to 644 DD (too early; some flies have emerged; peak activity expected in 3-4 weeks)
<b>Control Options</b>	<p><b>For SCM:</b></p> <ul style="list-style-type: none"> <li>Avoid planting susceptible crops into high-risk sites (e.g. those with decaying organic matter), at least for the next 2-3 weeks especially if conditions remain cool.</li> </ul> <p><b>For SCM, CM and OM:</b></p> <ul style="list-style-type: none"> <li>No effective rescue treatments available</li> <li>Protect new plantings preventatively during this high-risk period, especially if soils and growing conditions remain cool and moist. See control options.</li> </ul>		

<sup>1</sup> Degree-day accumulations for cabbage and onion maggot are readily available at the NEWA website (Network for Environment and Weather Applications; <http://newa.cornell.edu/>); from the top menu, click on "pest forecasts" and then "cabbage maggot" or "onion maggot", and simply select the location that you are interested in.

## Maggot damage:

In brassicas and onions, maggots tunnel into the stem, which disrupts the vascular system and causes the young seedling to wilt (Fig. 1). In beans, the effects of the underground feeding of SCM are visible once plants emerge and include holes in the first true leaves and dark areas in on the cotyledons. In peas, corn and vine crops, SCM damage is noticed as stand reduction. If damaged plants aren't killed outright, the injury provides wounds for plant pathogens to attack, causing various rots to develop. Finding the maggots in association with the damaged tissue is the best evidence. Full grown maggot larvae are yellow-white, legless, about ¼ inch long and have black mouthparts (Fig. 2).



**Figure 1.** Above-ground wilt symptoms of maggot feeding in onion. Photo: Christy Hoepting, CVP



**Figure 2.** Maggots found in association with damaged (onion) tissue is the best evidence that it is the culprit. Seedcorn maggot, cabbage maggot and onion maggot cannot be readily distinguished; they all are white, up to ¼ inch with black mouth parts. Photo: Christy Hoepting, CVP

### Preventative control options:

For seedcorn maggot, avoid planting susceptible crops into high-risk sites (e.g. those with decaying organic matter), at least for the next 2-3 weeks especially if conditions remain cool.

### Insecticides (see labels for details):

**Seed treatments, Farmore FI400 Brassica, FI500 Onion, and FI400 Cucurbits** all contain the active ingredient that is in Cruiser, which has activity against maggots. For beans, peas and sweet corn, **Crusier** by itself is labeled. **Poncho 600** is labeled on sweet corn.

If these seed treatments were not used, **Lorsban** products and its generics (a.i. chlorpyrifos) can be used at transplanting as an in-furrow application or immediately after seeding or transplanting as a directed banded spray (rates based on 4-inch band) **on most Brassicas, onions, peas, beans and sweet corn, but not vine crops.**

**Diazinon** products can be used in the same manner as described for Lorsban except for the band treatment with direct seeding. It can also be used on seedbeds, broadcast and incorporated just before planting for **Brassicas (some), onions, beans, peas and melons.**

**Coragen** has a 2(ee) label to be used as a transplant water treatment in cabbage only. It is critical that transplants be watered before transplanting and that the root zone is adequately treated or poor performance will result.

**Verimark** can be used similarly to Coragen as an in-furrow application or in the transplant water, but also as a transplant drench *“by growers or commercial transplant producers no earlier than 72 hours prior to planting in the field. Use only on transplants grown in soil/potting media.”* It is labeled in **Brassicas and vine crops.**

**Capture LFR, Force and Counter** are labeled as in-furrow applications in **sweet corn.**

### Organic control options:

**FOI100 Onion seed treatment** contains spinosad, which has activity against maggots.

**Row covers** can be used to protect recently seeded crops and emerging seedlings from maggots. The crop would need to be covered until feeding of the first generation is past. The row cover would have to be sealed to the ground and not have any tears or holes so as not to let in any flies. If pupae emerge from the soil underneath the row cover, it will not be effective. Do not use row covers on ground where onions or brassicas were planted the previous fall, or where decaying organic matter occurs. ●

## Cornell Vegetable Program Welcomes New Summer Assistants

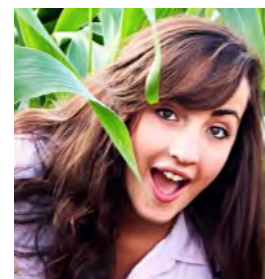
Please join us in welcoming Amy Celentano and Gretchen Seigworth to the Cornell Vegetable Program! Amy is a Program Technician that will be assisting with research projects in the western part of our territory. She will be based out of the CCE Orleans County office with Christy Hoepting. Gretchen is an Intern with iPIPE CAP (Integrated Pest Information Platform for Extension and Education, Cooperative Agricultural Project) and she will be housed in the CCE Erie County office with Darcy Telenko. We have asked Amy and Gretchen to introduce themselves:

“I am so happy to join the Cornell Cooperative Extension Vegetable Program as a Program Technician! My background is in Geology, earning a degree from SUNY Potsdam in 2010. I am from Batavia and have been interested in farming since childhood, so I am very excited to make a difference in Western New York agriculture.”



Amy Celentano

“I am excited to have the opportunity to work with the Cornell Vegetable Program! I am currently a junior pursuing a B.S. in Agribusiness Management at Penn State. In addition to the internship with the CVP, I will be working with Burley Berries in Warsaw, NY. I grew up on a 300 acre vegetable farm in small-town Brookville, PA, where I cultivated a passion for all things ag at an early age. I also serve as a Soil Nutrient Manager with PSU’s Sustainable Student Farm Club, and a research assistant on a variety of other Penn State projects with Dr. Ted Alter, PSU Professor of Agricultural, Environmental, and Regional Economics. I look forward to all the learning opportunities I will have during my time here!” ●



Gretchen Seigworth



## GENERAL OBSERVATIONS

The weather has continued to be a real problem for transplants. The cold snap has caused some die back, damaged growing points, and burnt leaves. During this past week, have also seen wind-whip damage of transplants.

Slugs are really active causing damage on just about every type of transplant that is out there. Be prepared for this pest ahead of time. We have also seen a significant amount of damage by geese, crows, and rodents on a wide assortment of transplants. Wildlife scare tactics like the rubber coyotes, bird eye balloons and granular mammal repellents can have affects at deterring some animals/birds. The key is changing locations or positions of the decoys. Wildlife can become used to seeing the same thing in the same place. Deterrence counts on surprise and altering habits.

## BRASSICAS

Flea beetles are rampant in many areas. Secure row cover or a tight spray schedule aiming not just on the plants but the areas around the plants. Flea beetles quickly jump off and hide on the ground.

## POTATO

Potato planting is progressing rapidly. The first potato foliage was seen emerging on May 12. It was planted in a small, protected muck field about 8 miles from Lake Ontario. (This marks the beginning of the late blight (LB) Severity Value (SV) count for all potato fields within 30 miles regardless of when they're planted. *See the Late Blight Risk section.*) Herbicides are going on at the first sign of emergence. A fresh market potato variety/breeding line trial in Wayne County is planned by Cornell plant breeder Walter DeJong. In addition to his breeding lines there will be standard varieties, and new U.S., Canadian and European varieties.

## PROCESSING CROPS

The relatively dry spring has meant good progress in the planting of peas, beets, carrots, sweet corn and spinach over the last few weeks and the earliest plantings are emerging. This week also traditionally marks the start of snap bean planting and the temperatures are looking more favorable for crop emergence and growth.

For crops that have emerged, parts of WNY were under freeze warnings this past weekend. From Gordon Johnson at the University of Delaware 4/7/16: "Peas are very cold hardy and can tolerate freezing temperatures down to the low 20s. Lower temperatures (below 20° F) or a combination of high winds (gusts over 30 mph) and freezing temperatures (below 25°F) can cause damage to pea plants, sometimes killing them to soil level. Peas that are germinating or just cracking the ground will have little damage. If pea tops are frozen to the ground level, they will develop new stems from dormant buds below ground. There will be 1-3 new stems that develop. This will be seen within a week after the frost. These stems will develop and flower later than undamaged plants. Generally, freeze damaged peas will yield 5-20% less due to the differences in maturities in the field and having weaker plants."

Keeping wheat and small grains out of processing fields is important because of the gluten-free issue. The pre-plant incorporated herbicides, Treflan and Eptam will suppress small grains. Similarly, Dual Magnum applied pre-emergence, will provide suppression. Post emergence applications of Select Max (12 fl. oz) and Assure II (8 fl. oz) will control wheat that is 2 – 6 inches tall, while Poast (1.5 pt) will control wheat up to 4 inches tall.

Besides planting, the focus this time of year should be on weed management. I've been asked about the white flowering weeds in fields that have not yet been plowed. These are shepherd's purse and pennycress – two cruciferous weed species. They generally don't cause issues in fields unless you are growing cole crops. Plowing or burn down will get rid of these weeds for the season. They have likely already set seeds, however. There is not much new with herbicides this year, other than sweet corn (see the last issue of Veg Edge for a listing). Take note of the article in the general section this week about rotational restrictions when planning your herbicide options. Beet growers also take note that the SLN label for Nortron was extended until 2018. Make sure you have the label in your possession. This would be a good year to continue to experiment with beet herbicides because we continue to lose products. A beet herbicide trial was established at Cornell in Freeville this past week. We are looking at different rates of Nortron PRE as well as different combinations of POST herbicides. We will keep you updated throughout the season, as well as at the winter advisory meetings.

## SWEET CORN

Sweet corn plantings are variable at best. We're seeing irregular germ rates and fields with a lot of skips. A couple of plots had significant corn flea beetle pressure on the seedlings.

## TOMATO

*See the Late Blight Risk section.* The first potato foliage emerged May 12 in Wayne Co. This marks the beginning of the late blight (LB) Severity Value (SV) count for all potato and tomato fields within 30 miles regardless of when they're planted.



# Chateau for POST-Emergent Control of Yellow Nutsedge in Onion

Christy Hoepting, CCE Cornell Vegetable Program

In 2015, we conducted an on-farm trial to identify effective post-emergent treatments for controlling yellow nutsedge (YNS) in direct seeded onions. In general, Chateau had very good POST activity against YNS with best control achieved when it was applied early prior to plant producing rhizomes and side shoots and when multiple applications were applied. It worked better than Goal.

One treatment that stood out was **Chateau 1.0 oz applied when the yellow nutsedge was poking out of the ground** and was no greater than 2 inches tall (Fig. 1) and the onions were in the flag leaf stage. One week later, this single application resulted in **70% mortality** of YNS. Another 2.0 oz was applied one week later when the onions were in the 1-leaf stage, which increased YNS mortality to 78%. Of the remaining YNS, 21% was actively growing while the rest (7.5%) were injured. With no further herbicide applications, this treatment resulted in 80% reduction in weed biomass and 47% reduction in ground cover (Fig. 2). **Timing this burndown application to before YNS begins to produce rhizomes and side shoots appeared to be key**, because once YNS produces side-shoots and rhizomes, it more readily grows back (Fig. 3).

In this study, this treatment resulted in 44% stand reduction. In other trials, Chateau 1.0 oz at flag leaf stage resulted in 10% or less injury. We suspect that the higher level of injury in 2015 was a result of the flag leaf application having been made following a frost and closely preceded by an application of Prowl EC. Chateau is not labeled until direct seeded onions are in the 2-leaf stage, However, **Chateau 2.0 oz could be used now in transplanted onions**. If you have YNS starting to emerge in transplanted onions, Chateau 2.0 oz followed by 1.0 oz one week later would be a good start.

In the 2015 trial, Chateau generally performed better than Goal 2XL for post-emergent control of YNS. However, four repeated applications of Goal 2XL 4 fl oz at 2-, 3-, 4- and 6-leaf stages resulted in 85% control of weed biomass and 39% control of ground cover. **For post-emergent control of YNS in direct seeded onions, I would suggest to start with Chateau 2.0 oz at 2-leaf stage, followed by 1.0 oz 1 week later, and then to continue to burn it back with Goal 2XL 4 fl oz.** This will not result in 100% control, but will drastically cut down on hand weeding it later.



Figure 1. New emergence of yellow nutsedge on onions at the early flag leaf stage. Photo: Christy Hoepting, CVP



Figure 2. Chateau 1.0 oz was applied to newly emerging yellow nutsedge (less than 2 inch tall) when onions were in the flag leaf stage, followed by Chateau 2.0 oz 1 week later when onions were in the 1-leaf stage. With no additional applications, this treatment resulted in 85% reduction in biomass and 47% reduction in ground cover at harvest (shown). This treatment resulted in 44% stand reduction, but certainly could be used in transplanted onions and with even better results when followed with Goal 2XL. Photo: C. Hoepting, CVP

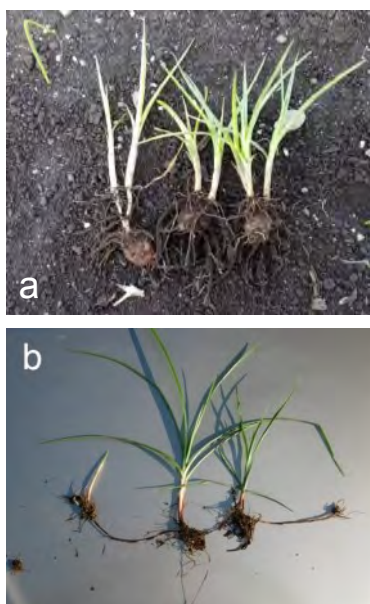
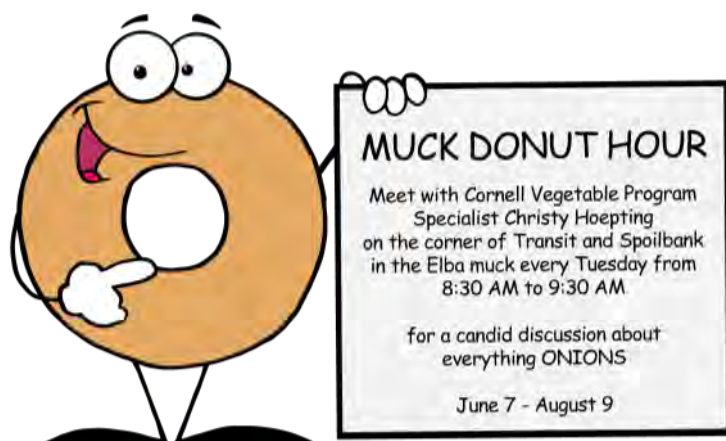


Figure 3. Yellow nutsedge can more readily be controlled with post-emergent herbicides when it is applied before the plants produce rhizomes and side-shoots (a). Photo: C. Hoepting

YNS producing rhizomes and side shoots (b). Photo: Mark Schonbeck



## UPCOMING EVENTS *view all Cornell Vegetable Program upcoming events at [cvp.cce.cornell.edu](http://cvp.cce.cornell.edu)*

### Muck Donut Hour

Every Tuesday, June 7 - August 9 | 8:30 AM - 9:30 AM  
Elba Muck, corner of Transit and Spoilbank, Elba, NY



Meet with Cornell Vegetable Program Specialist Christy Hoepting every Tuesday morning to ask questions and share your observations. Grower experience is combined with research and scouting information for a whole lot of talk about growing ONIONS!

### Hands-on Field and Vegetable Pest Management

June 8, 2016 | 1:00 PM - 4:00 PM

Miller Farm, 5483 Glover Hill Rd, Cattaraugus, NY 14719



Cornell Vegetable Program Fresh Market Specialists will educate growers on weed and insect identification and management in mixed field crop and vegetable systems; with additional focus on integrated weed management. Topics such as resistant varieties, pest/disease, cultural management and appropriate spray options will be included. 3.0 DEC recertification credits will be offered. Event is FREE! Questions? Contact Judson Reid, 585-313-8912.

### Soil Health & Cover Crop Workshop

June 30, 2016 | 9:00 AM - Noon

Elba Firemen's Recreation Hall, 7143 Oak Orchard Rd, Elba, NY 14058



Topics include **Soil health basics and why to start cover cropping**, *Jeff Rasaweher, crop farmer and owner of Centerseeds, Celina, Ohio*, **A Local Farmer Panel** with cover crop advice for the beginner, **The Cornell Climate Smart Farming Program**, *Darcy Telenko, Cornell Vegetable Program*, and an introduction to the **Western New York Soil Health Alliance**. *Sponsored by: Western New York Soil Health Alliance, a Farmer-to-Farmer Network.*

To pre-register for this FREE event, contact Orleans County SWCD at [Dennis.Kirby@ny.nacdnet.net](mailto:Dennis.Kirby@ny.nacdnet.net) or 585-589-5959, or Genesee County SWCD at [Molly.Stetz@ny.nacdnet.net](mailto:Molly.Stetz@ny.nacdnet.net) or 585-343-2362

### Fresh Market Vegetable Field Day: Early Disease Detection & Weed Management Options

July 6, 2016 | 9:00 AM - 3:30 PM

CVP Fresh Market Demo Site at Partridge's on the Farm Market, 4924 Ellicott St Rd (Rt 63), Batavia, NY 14020



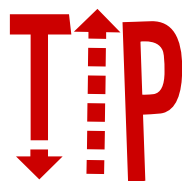
View demonstration plots to exemplify early disease detection and weed management options for fresh market vegetable production. In addition to the demonstration plots, sessions will be offered throughout the day on weed and disease identification and biology, soil health and resistance management by CVP team members and county agriculture Educators. Regional equipment dealers and industry representatives will be invited to display equipment and new technology. CCA and DEC credits will be available.



- Tomato varieties and organic spray programs for disease management
- Cucumber varieties and organic spray programs for downy mildew
- Specialty crop vegetable varieties for viewing
- Pesticide tank mixing 101
- Weed identification and biology
- Stale seedbed techniques for weed management in pumpkin, winter squash, and root crops
- Improving soil health through the use of cover crops
- Herbicide options in sweet corn

\$20 per person before June 30th includes lunch and information packet / \$30 per person at the door (lunch cannot be guaranteed unless you have pre-registered). Please contact us for special food accommodations. Pay online at [https://cvp.cce.cornell.edu/event\\_preregistration.php?event=564](https://cvp.cce.cornell.edu/event_preregistration.php?event=564) or contact Eva McKendry at 716-652-5400.

## TILLAGE



### Zone Tillage in Dry Weather

Reducing the number of tillage passes, or using zone/strip tillage or no-till, are very effective at conserving soil moisture in a dry spring. However, if you rip when you do zone tillage, either to break through a compaction layer or to place nitrogen deep below where the crop row will be, you risk drying the soil excessively. In past dry springs growers learned that they can conserve soil moisture if they replace the rolling basket at the back of the zone tiller with a narrow cultipacker unit. The cultipacker is better at sealing the open rip from drying winds. ●

## Weather Charts

John Gibbons, CCE Cornell Vegetable Program

### Weekly Weather Summary: 5/10 – 5/16/16

Location	Rainfall (inch)		Temp (°F)	
	Week	Month	Max	Min
Albion	0.40	1.07	84	31
Appleton, North	0.17	0.70	67	31
Baldwinsville	0.18	1.09	83	32
Buffalo*	0.45	1.15	80	38
Butler	0.31	1.29	83	33
Ceres	0.63	2.00	79	29
Elba	0.50	1.30	77	28
Farmington	0.36	1.19	80	30
Gainesville	0.39	1.55	82	27
Geneva	0.33	1.24	80	34
Lodi	0.25	1.46	81	32
Niagara Falls*	0.40	0.90	80	37
Penn Yan*	0.32	1.54	82	35
Rochester*	0.39	1.29	82	35
Romulus	0.30	1.46	82	34
Silver Creek	0.46	1.75	72	37
Sodus	0.40	1.26	82	28
Versailles	0.38	1.40	78	35
Williamson	0.42	1.27	82	29

### Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 – May 16, 2016

Location	2016	2015	2014
Albion	76	236	146
Appleton, North	33	170	100
Baldwinsville	102	244	212
Buffalo	109	248	172
Butler	96	270	208
Ceres	69	196	172
Elba	37	170	123
Farmington	73	253	192
Gainesville	50	184	140
Geneva	82	249	197
Lodi	107	289	232
Niagara Falls	107	205	137
Penn Yan	95	269	203
Rochester	96	278	204
Romulus	91	243	202
Silver Creek	75	197	144
Sodus	63	197	181
Versailles	96	214	179
Williamson	58	198	161

\* Airport stations

\*\* Data from other station/airport sites is at: <http://nwa.cornell.edu/> Weather Data, Daily Summary and Degree Days.

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# VEGEdge

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VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program in Western New York. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and research results from Cornell and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.

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