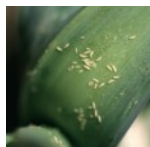


Nine cases of spinach downy mildew have been confirmed in New York and New England in

2018. Management requires ID of the race of pathogen.

PAGE 1



In both muck and upland transplanted onions, onion thrips are starting to build. Scouting

tips are provided.

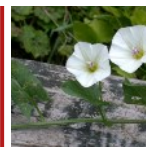
PAGE 4



Photo: UMass

With increased organic matter in your soil, you may also see an increase in wireworms. This pest can damage root crops.

PAGE 8



Can you tell the difference between wild buckwheat and field bindweed? These vining weeds are

often confused with each other. Learn about both these weeds.

PAGE 9



VEGEEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

● Volume 14 | ● Issue 9 | ● June 6, 2018

Photo: Darcy Telenko

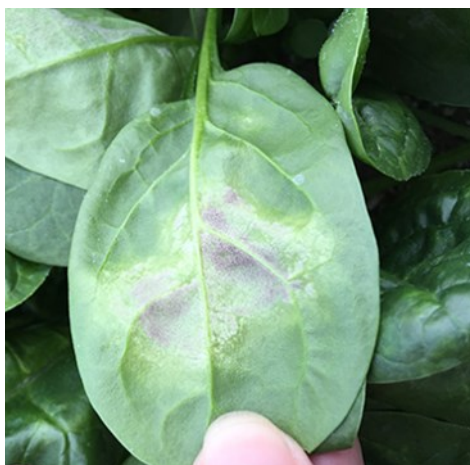
Cornell Cooperative Extension
Cornell Vegetable Program

Spinach Downy Mildew Update

Judson Reid, CCE Cornell Vegetable Program

Cornell Plant Pathologist Meg McGrath confirms 9 cases of Downy Mildew on spinach in New England and New York in 2018. With the advent of winter high tunnel spinach growing, the live crop has served to overwinter the disease as there were several infected winter and spring plantings. Prior to 2014 this disease was not common in the Northeast.

Understanding management of the disease requires identification of the race of the pathogen. The most recent race described is #17, in 2018. When buying seed, look for



Sporulation on lower leaf surface caused by Downy Mildew (left). Yellowing on upper leaf surface of spinach caused by Downy Mildew (right).

Photos: Teresa Rusinek, CCE ENY Commercial Horticulture Program

continued on page 3



VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 13 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.

We're interested in your comments. Contact us at:
CCE Cornell Vegetable Program
480 North Main Street, Canandaigua, NY 14224
Email: cce-cvp@cornell.edu

Web address: cvp.cce.cornell.edu

Contributing Writers

Robert Hadad
Christy Hoepfing
Julie Kikkert
Ali Nafchi
Judson Reid
Darcy Telenko

Publishing Specialist/Distribution/Sponsors

Angela Parr

VegEdge is published 25 times per year, parallel to the production schedule of Western New York growers. Enrollees in the Cornell Vegetable Program receive a complimentary electronic subscription to the newsletter. Print copies are available for an additional fee. You must be enrolled in the Cornell Vegetable Program to subscribe to the newsletter. For information about enrolling in our program, visit cvp.cce.cornell.edu. Cornell Cooperative Extension staff, Cornell faculty, and other states' Extension personnel may request to receive a complimentary electronic subscription to VegEdge by emailing Angela Parr at aep63@cornell.edu. Total readership varies but averages 700 readers.

Information provided is general and educational in nature. Employees and staff of the Cornell Vegetable Program, Cornell Cooperative Extension, and Cornell University do not endorse or recommend any specific product or service.

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are possible. Some materials may no longer be available and some uses may no longer be legal. All pesticides distributed, sold or applied in NYS must be registered with the NYS Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide usage in NYS should be directed to the appropriate Cornell Cooperative Extension (CCE) specialist or your regional DEC office.

CCE and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products or companies is made or implied. **READ THE LABEL BEFORE APPLYING ANY PESTICIDE.**

Help us serve you better by telling us what you think. Email us at cce-cvp@cornell.edu or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.



Contents

Contact Us

Cornell Vegetable Program 12

Crops

CROP Insights – Our Observations from the Field and Recommendations 06

Cabbage: Highlights from 2017 Pre-Emergent Herbicide Trial 03

Onion: Post-Emergent Options for Yellow Nutsedge 04

Onion: Scouting Tips for Onion Thrips 04

Potato/Tomato: Late Blight Risk – Severity Values Accumulations 05

Spinach Downy Mildew 01

WNY Sweet Corn Trap Network Report, 6/5/18 05

General

Invitation to Vegetable Specialist Candidate Presentations 02

Are Slugs and Snails Feeding on Your Vegetable Crops? 08

Wireworms 08

A Veritable Variety of Vines! 09

Upcoming Events

2018 WNY Fresh Market Vegetable Twilight Meeting 10

2018 Elba Muck Onion Twilight Meeting Featuring Weed Control 10

Ontario Produce Auction Growers Meeting 10

New York Soil Health Summit 10

Weather Charts 11

The next issue of VegEdge will be June 13, 2018.

Invitation to Vegetable Specialist Candidate Presentations

Julie Kikkert, CCE Cornell Vegetable Program

The Cornell Vegetable Program is hiring an Extension Associate (vegetable specialist) to fill the position that is being vacated by Darcy Telenko who will be leaving for Purdue University at the end of June. We have three excellent candidates who will be coming for in-person interviews. **Everyone is invited to hear the public presentations.** There will be a candidate evaluation form to fill out at the end of each presentation. The candidates will present their background and qualifications, and were asked to identify and discuss how they would address a production issue that impacts the vegetable industry; and in addition how they envision this position contributing to the growth and economic viability of the agriculture industry in the Western NY region.

The presentations schedule is as follows:

Friday, June 8, 2018

Cornell Cooperative Extension of Erie County

21 S. Grove St., East Aurora, NY 14052

9:30 a.m. - 10:15 a.m. – Candidate 1 Presentation

11:15 a.m. - 12:00 p.m. – Candidate 2 Presentation

1:30 p.m. - 2:15 p.m. – Candidate 3 Presentation

For more information, please contact Team Leader Julie Kikkert ●

varieties with resistance to as many races as possible. Acadia, Kolibri, Mandolin and Escalade are examples of broad resistance. Since knowing the race is so important, we ask for growers to reach out if they suspect Downy Mildew, so we can submit races for lab identification. It appears 12,14 and 15 are the more common races currently in the Northeast.

Promptly till-in all spinach plantings once done harvesting and rotate ground out of spinach for 2-3 years.

Labeled fungicides are available. Orondis, Phostrol, and Cabrio EG all have a 0-day PHI and belong to different fungicide groups (for resistance management). Control of spinach downy mildew with organic materials may not be possible, but copper is labeled, and applicators should exercise caution due to potential phytotoxicity. ●

Highlights from 2017 Pre-Emergent Herbicide Trial in Cabbage: Opportunity for Improved Ragweed Control

Christy Hoepting, CCE Cornell Vegetable Program

In a project funded by the Cabbage Research and Development Program (CRDP), currently labeled pre-emergent herbicides, Treflan, Dual Magnum, Devrinol 50-DF and new formulation DF-XL, and Prowl H2O were evaluated as single actives and in combination with Goaltender. Note that Goaltender is also available in New York for post-emergent weed control as a foliar spray over the top of cabbage via a Special Local Needs label, but at rates that would not be effective for pre-emergent weed control. Prowl H2O is labeled as a directed spray, but in this trial, it was applied over the top of transplants. Devrinol 50-DF is not commonly used, because it has a short residual. However, a few years ago, a new formulation, DF-XL became available, which in Michigan studies had 4-6 weeks residual control and improved crop safety over Dual Magnum, especially during cold soil conditions.

Unfortunately, due to excessive rainfall, crop tolerance and yield data was not obtained from this trial, because cabbage was unusually stressed from water-logged soil conditions. However, we got some interesting results regarding weed control, especially for ragweed, which was clearly the dominant weed species in the trial.

Of the single actives, Treflan, Dual Magnum and Prowl H2O failed to control ragweed. Interestingly, Devrinol had some activity, with the new formulation providing ~20% better control than the old (new: 69%; old: 51%). Since Goaltender has activity on ragweed, control of ragweed was significantly improved when it was used in

combination with all of these herbicides. Best control of ragweed (84%) was achieved with new formulation of Devrinol DF-XL 2 lb PPI + Goaltender 0.5 pt POST-transplanting, which was also a top-performing treatment for control of hairy galinsoga, lamb's quarters, pigweed, smartweed and foxtail. These results are promising, and we are interested in further experimenting with Devrinol DF-XL, especially if it offers improved crop safety over Dual Magnum. If you have issues with ragweed escapes, consider using Goaltender pre-emergence. Note, that Goaltender does not control grasses, so if it is not used with a pre-emergent grass herbicide, then grass escapes will have to be cleaned up post-emergent with Select or Poast. Of the products tested, Dual Magnum is the only one that has activity on yellow nutsedge.

Table 1. Relative efficacy of pre-emergent herbicides in cabbage (c.v. Cabton), planted June 14, 2017 in Geneva, NY; Cornell University trial (Telenko and Hoepting).

Product and Rate/A	% Weed Control 50 DAT (Aug-3)					
	Ragweed	Hairy Galinsoga	Lamb's Quarters	Pigweed	Smartweed	Foxtails
Treflan 2 pt PPI ¹	18.8 fg	52.9	100	98.8	75	71.3
Treflan 2 pt PPI Goaltender 0.5 pt POST ²	55.0 bcd	83.8	100	100	100	73.3
Dual Magnum 1 pt POST	33.8 def	97.7	99.5	100	100	97.8
Dual Magnum 1 pt POST + Goaltender 0.5 pt POST	70.0 abc	100	100	100	100	100
Devrinol 50-DF 2 lb PPI	51.3 cde	96.3	98.8	99.5	97.5	96.3
Devrinol DF-XL 2 lb PPI	68.8 abc	100	100	100	100	96.3
Devrinol DF-XL 2 lb PPI Goaltender 0.5 pt POST	84.5 ab	100	100	100	100	96.0
Prowl H2O 2.1 pt POST	17.5 fg	76.3	100	97.8	100	98.3
Prowl H2O 2.1 pt POST + Goaltender 0.5 pt POST	81.3 abc	90.0	100	100	99.5	98.0

¹PPI: pre-plant incorporated (Jun-13).

²POST: post-transplanting, same day as transplanting (Jun-14).

Green highlighting: > 90% weed control. Yellow highlighting: < 50% weed control.

The CRDP is continuing to fund herbicide research in cabbage, which is now being conducted by new Cornell Weed Scientist, Dr. John Wallace. ●

Post-Emergent Options for Yellow Nutsedge in Onions

Christy Hoepting, CCE Cornell Vegetable Program

In 2015 and 2016, Chateau and Goal 2XL were studied in Cornell trials for post-emergent control of yellow nutsedge. Between the two, Chateau had better activity. But, was by no means a silver bullet and control varied from year to year. Starting with Chateau 2 oz at 1-leaf, followed by Chateau 1 oz one week later, and then Goal 2XL 4 fl oz (bi)weekly until its PHI (= 45 days) in mid-July, this treatment resulted in 40 to 65% control of YNS compared to an untreated check. Chateau and Goal are contact herbicides, so the only way that they can kill YNS plant is if it is a single shoot coming from the nutlet. Once YNS produces rhizomes, it will always regrow. Unrelenting hits of contact herbicides force YNS to put their energy into vegetative regrowth instead of reproductive growth (which typically starts in early July). By getting “half way there” with contact herbicides, nutlet production is greatly reduced, you buy yourself a lot of time to get a hand weeding crew in, and hand-weeding is less destructive because YNS is weak. The question is: how many applications of Goal 2XL can your onions take? The label allows for 32 fl oz per season (= 8 x 4 fl oz apps). I suggest starting to go down the road of battling YNS with Chateau and Goal 2XL, and see how it goes. If it reaches a point where the onions have had enough contact herbicides or YNS has clearly won, you can “get off the bus” at any time. Then, the decision will be to hand weed or sacrifice the onions in a bad patch to take care of the YNS for good (with Roundup for example). I was impressed with the efficacy of Chateau on YNS with some of last week’s apps (photos below).



Yellow nutsedge (YNS) treated with Chateau 2.0 oz compared to untreated (top left). Top right: YNS 1-2" tall significantly burned back. YNS < 1" was dead (not shown). Bottom: YNS 4-6" with growing point killed (left) as indicated by the center leaves pulling out when tugged. Although above-ground parts are hurt, YNS will continue to re-grow because the below-ground rhizomes remain intact. Continuous burning YNS back with contact herbicides can significantly reduce this weed. Photos: C. Hoepting, CCE CVP

Scouting Tips for Onion Thrips in Onions

Christy Hoepting, CCE Cornell Vegetable Program

Scouting for Onion Thrips:

To find the first thrips of the season, look deep into the leaf axils. The adults are brown, sliver-like and up to 2 mm in length (Fig. 1), while the nymphs are yellow and 0.5 to 1.2 mm in length (Fig. 2). Inspect 20 to 30 plants and count the total number of OT per plant and divide by the average number of leaves per plant to get the number of OT per leaf. Thrips feeding causes silvery streaking along the leaves. If you can already see thrips feeding damage (Fig. 3) that is also a good indication that it is time to spray. If there is a lot of feeding damage, then you likely missed a timely first spray.



Figure 1. Adult onion thrips are the first thrips of the season. They are tiny brown sliver-like insects up to 2 mm in length. Photo: C. Hoepting, CVP

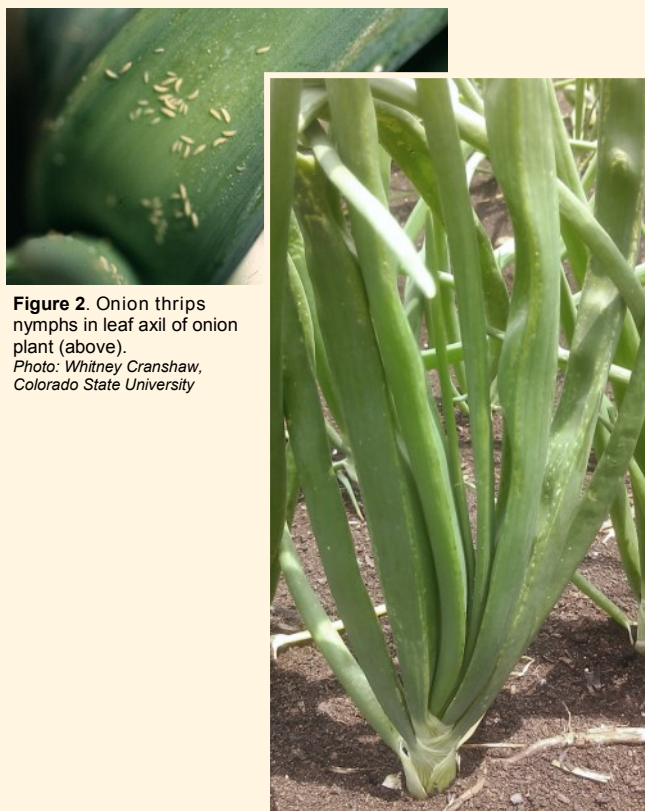


Figure 2. Onion thrips nymphs in leaf axil of onion plant (above). Photo: Whitney Cranshaw, Colorado State University

Figure 3. Subtle streaking along leaves is an early indication of early onion thrips feeding. This plant has reached the spray threshold. Photo: C. Hoepting, CVP

Late Blight Risk – Severity Values Accumulations

Darcy Telenko and John Gibbons, CCE Cornell Vegetable Program

Late blight severity values continue to rise for many locations. The threshold for risk is 18 SVs and within about a week of reaching 18 SVs growers need to apply fungicide on all potatoes 4+ inches tall, and on all field tomatoes, to protect them against late blight. Based on weather forecasts using first emergence of potatoes on May 15, twelve locations have exceeded the threshold, these include Albion, Buffalo, Gainesville, Penn Yan, Rochester, and Wellsville. The forecast projects that Versailles will reach 18 SVs by the end of the week (see table for other weather stations). Once you've applied your first fungicide, use Simcast or early blight P-Days to help schedule your fungicide applications for the remainder of the season.

There have been no new light blight reports nationally. The only positive sites remain in south in Florida.

Late Blight Severity Values* 6/5/2018

Location	Total	Forecast 6/06-6/09	Location	Total	Forecast 6/06-6/09
Albion	35	0	Knowlesville	0	0
Baldwinsville	9	0	Lodi	0	0
Bergen	1	0	Lyndonville	1	0
Buffalo	19	1	Medina	6	0
Burt	7	0	Niagara Falls	7	0
Butler	7	0	Penn Yan	28	0
Ceres	13	0	Rochester	18	0
Fairville	1	0	Sodus	4	1
Farmington	10	0	Versailles	17	1
Gainesville	59	3	Volney	4	0
Geneva	4	0	Wellsville	48	0
Kendall	4	0	Williamson	7	0

* Severity value accumulations start 5/15/2018

WNY Sweet Corn Trap Network Report, 6/5/18

Marion Zuefle, NYS IPM Program; <http://sweetcorn.nysipm.cornell.edu>

Fourteen of 37 sites reported this week. European corn borer (ECB)-E and Z were caught at four sites each. Corn earworm was also caught at four sites, Eden, Geneva, Hurley and Ransomville. All with counts high enough to be on a 4, 5, or 6 day spray interval (see table below right). With cooler weather, <80 degrees, one day can be added to the recommended spray intervals. This is early for CEW in all locations except Eden and these moths most likely came up with the last storm front. No fall armyworm (FAW) or Western bean cutworm (WBC) were caught this week.

Thrips damage was seen in a few fields the last two weeks. They are usually not a problem in sweet corn unless hot, dry, windy weather persists causing the plants to become water stressed. The cooler weather this week knocked back the population in the field I scouted today. Damage appears as white longitudinal spots giving the leaf a gray appearance.



Thrip damage on sweet corn (left) and adult thrip on sweet corn (right).

Photos: M. Zuefle, NYS IPM

Average corn earworm catch and recommended spray interval

Per Day	Per Five Days	Per Week	Days Between Sprays
<0.2	<1.0	<1.4	No Spray (for CEW)
0.2-0.5	1.0-2.5	1.4-3.5	6 days
0.5-1.0	2.5-5.0	3.5-7.0	5 days
1-13	5-65	7-91	4 days
over 13	over 65	over 91	3 days

Add one day to the recommended spray interval if daily maximum temperatures are less than 80°F for the previous 2-3 days.

European corn borer (bivoltine) development estimated using a modified base 50F degree day calculation.

Development Stage	Accumulated Degree Days
First Generation	
First spring moths	374
First eggs	450
Peak spring moths	631
First generation treatment period	800-1000
Second Generation	
First summer moths	1400
First eggs	1450
First egg hatch	1550
Peak summer moths	1733
Second generation treatment period	1550-2100

from J.W. Apple, Department of Entomology, Univ. of Wisconsin-Madison

WNY Pheromone Trap Catches: June 5, 2018

Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD to Date
Baldwinsville (Onondaga)	NA	NA	NA	NA	NA	629
Batavia (Genesee)	NA	NA	NA	NA	NA	619
Bellona (Yates)	NA	NA	NA	NA	NA	630
Eden (Erie)	0	1	18	0	0	639
Farmington (Ontario)	1	0	0	0	0	609
Geneva (Ontario)	1	6	5	0	NA	612
Hamlin (Monroe)	NA	NA	NA	NA	NA	553
Kennedy (Chautauqua)	NA	NA	NA	NA	NA	572
Pavilion (Genesee)	NA	NA	NA	NA	NA	508
Penn Yan (Yates)	0	0	0	0	0	641
Ransomville (Niagara)	0	1	2	0	0	608
Seneca Castle (Ontario)	5	0	0	0	0	598
Williamson (Wayne)	0	0	0	0	0	518

ECB - European Corn Borer

CEW - Corn Earworm

FAW - Fall Armyworm

WBC - Western Bean Cutworm

NA - not available

DD - Degree Day (mod. base 50F) accumulation

Keep an eye on insect pest populations. We continue to find flea beetles, cabbage worms, and cucumber beetles. Check out our Better Know a Pest – Flea Beetle video <https://www.youtube.com/watch?v=11LNyfQnCB4> – DT

CUCURBITS

In the earliest squash, there are flowers and 1-3-inch fruit developing. We have seen a few cucumber beetles, in-furrow insecticides seem to be providing good management of these infestations. The national cucumber downy mildew forecast is active and three counties in North Carolina and one in Georgia have reported finding it on cucumbers. The current risk remains in the south; we will continue to monitor and update this weekly. – DT

ONIONS

Majority of direct seeded onions are in 2-leaf stage. At this size, onion seedlings are more tolerant to post-emergent herbicides. Earliest transplants have 8-10 leaves and transplanting should finish up next week. Unfortunately, stretch of sun/heat/wind resulted in stand loss in several fields across the region. Fortunately, generous rainfall accompanied by cooler weather over the weekend and beginning of this week put an end to seedling burn off and thankfully, many struggling plants were able to recover. Similarly, some fields suffering from Outlook injury (Fig. 1) are also recovering nicely. As always, weather that is good for the onions is also good for the weeds. There is wide variability in weed control among fields ranging from perfect to “scary”. After laying low, yellow nutsedge emerged this past week as an aggressive contender. There have been no reports of leaf diseases, but it is time to start scouting for onion thrips.



Figure 1. Outlook injury. First leaf (red arrow) does not unfurl properly and gets caught (yellow circle) in the flag leaf (yellow arrow), which causes the first leaf to “loop” instead of stand upright. Once the flag leaf dies, the first leaf is released and will eventually straighten out. Photos: C. Hoepting, CCE CVP

Last week was “Chateau week” in direct seeded onions across the region in part because it tends to be the safest of the post-emergent herbicides on very young onions. Chateau is used early to catch the first flush of broadleaf weed escapes while laying down some residual control. Typically, 2 oz is followed by 1 oz one week later. This use has been especially successful for control of pigweed, smartweed, nightshade, and marsh yellowcress and other annual mustards (efficacy varies by species). However, Chateau does not control all weeds so well. It is not as strong on ragweed and lamb’s quarters, for example. So, depending on your weed escape situation, after the first application of Chateau instead of following it up with the second, switching to Goal 2XL or Butril or Goal + Butril may be more effective, all of which are tolerated by 2-leaf onions. Generally, Butril + Goal provides the widest spectrum of broadleaf weed control, with this tank mix controlling pigweed, ragweed, lamb’s quarters, smartweed and several annual mustards. Different rates of Butril 2E + Goal 2XL are used, such as 4 + 4; 6 + 2, 8 + 2, 8 + 4, etc. **For many other ideas on onion weed control, plan on attending the Elba Muck Onion Twilight Meeting in a couple of weeks on Thursday, June 21st.**

In both muck and upland transplanted onions, onion thrips (OT) are starting to build in earlier/larger transplants with 7-10 leaves. OT larvae were found this week. Obviously, once larvae appear, populations build more quickly. Movento 5 fl oz is recommended for the first insecticide spray when OT (adult + larvae) counts reach 0.6 to 1.0 OT per leaf. **Now is the time to start scouting for OT** to ensure that you do not miss a timely first spray – see article on scouting tips, page 4. – CH

PEPPERS

Keep an eye out for aphids. Examine ten sites throughout field. Treatment should begin before population exceeds five nymphs per leaf. Natural enemies help suppress aphid infestations such as ladybug larvae and minute pirate bug (*Orius*). – DT

POTATO and TOMATO

Colorado potato beetles eggs have been noted in several locations. Scouting programs and thresholds for initiating sprays have been developed for potato and tomato (see Vegetable Guidelines for more de-



Colorado potato beetle egg mass on tomato leaf. Photo: David Ludwig

continued on next page

tails). In general, the threshold for potato after sample 50 plants in a field is ≥ 200 small larvae, ≥ 75 large larvae, and ≥ 25 adults. For tomato, thresholds are still in the development stage, but current data recommend a threshold of $\frac{3}{4}$ adult of $\geq 10\%$ defoliation in plants up to 10 inches tall; 1 adult or larvae per plant of $\geq 20\%$ defoliation for plants 10 inches to early fruit set; and $\geq 10\%$ defoliation or $\geq 2\%$ plants with one freshly injured fruit.

Attention: Anyone that Uses BlightPro for Late Blight Management – The co-founders of the new program at UKKO Agro will be at the twilight meeting in Eden on June 19 to talk about the new program. Please join us! Chicken BBQ Dinner will be provided. RSVP requested to Darcy Telenko 716-697-4965. (See events section for more details!) – DT

PROCESSING CROPS

Planting and weed management are the priority activities for processing vegetable crops at this time. The rainy weather this past week is favorable to slug and snail activity. Newly hatched slugs will be very tiny. Slug monitoring is going on in some processing pea fields this year to help determine when the slugs arrive and

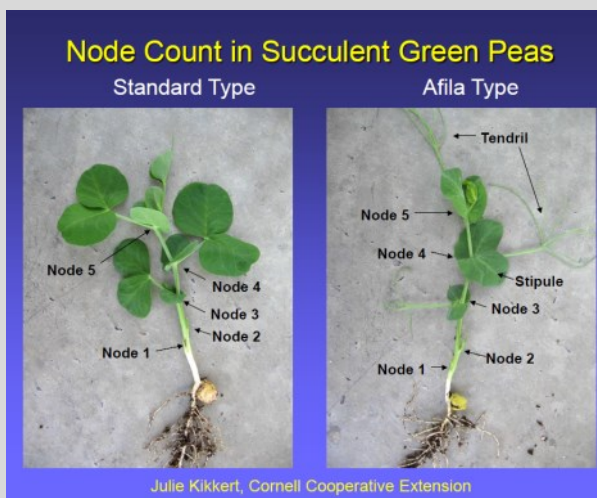


Table 1. The average node to first flower for commonly grown processing pea varieties in NY.

Variety	Vine type	1st node to flower
Early Season		
Spring	Normal	9 to 10
PLS M-14	Normal	9
Mid-Season		
BSC5051	Normal	10
Portage	Afila	10
DA1470	Determinant Afila	12 to 13
SV7401QH	Normal	13-14
Late-Season		
Bolero	Normal	14 to 15
Concept	Afila	16 to 18
Spartan	Afila	12 to 14
SV7688QF	Determinant Afila	15
513	Normal	15
PLS196	Afila	?

where they are coming from. You may want to do some monitoring on your own farm. Scouting (especially at night/dawn) and/or setting out traps will help you monitor the slug and snail population (see the general article on page 8). We don't really know the best way to control slugs in processing peas, but there are 3 types of baits available for use for peas in NY. 1) Deadline bullets (metaldehyde, SLN label in 2018), 2) Sluggo (iron phosphate), and 3) IronFist (sodium ferric EDTA). Deadline is water soluble and 0.5 inch of rain can wash it away, whereas the others are more rainfast. Additionally, Deadline must be applied before the peas blossom.

Post-emergence herbicides need to be applied at the correct stage of crop growth to avoid crop injury. This is especially important for peas. Most products refer to the number of nodes in a pea plant. A node is a point on a stem where a leaf is or has been attached. When a pea seed germinates, the cotyledons remain below the soil surface. The shoot grows upward. The first two nodes have incomplete or stipular leaves. Beginning with the third node, the pea plant has a compound leaf comprised of two fleshy stipules at the base, a petiole (leaf stalk) with two or three pairs of leaflets, and usually several tendrils at the end. When counting nodes, it is very important to remember that one or several nodes may be below the soil surface depending on how deep the seed was planted. Thistrol and Raptor herbicides cannot be applied within a certain number of nodes to flowering. Early varieties can flower as soon as 9 nodes. The first node to flower for many of the processing varieties is listed in Table 1. – JK

SWEET CORN

The earliest sweet corn plantings are beginning to tassel. We caught corn ear worm and European corn borer moths in both Erie and Niagara county traps, keep a close eye out for eggs or feeding damage. See the Sweet Corn Pheromone Trap report for more details. Now is also the time to evaluate pre-emergence weed management programs. I have had a few reports of annual grasses breaking through where there wasn't enough moisture to activate the metolachlor. There are very few options to clean these up – with cultivation being the best. Reminder to read label – many of the herbicides labelled for field corn do not have a sweet corn label. – DT



The earliest sweet corn plantings are beginning to tassel.
Photo: D. Telenko, CCE CVP

Are Slugs and Snails Feeding on Your Vegetable Crops?

Julie Kikkert, CCE Cornell Vegetable Program

It's no secret that slugs and snails love wet weather, and reports locally and regionally indicate that active feeding is happening at this time. Large slugs and snails that you may have seen in May or early June likely overwintered in the adult stage. More commonly in the Great Lakes region, eggs of slugs/snails that were laid last fall begin to hatch in mid to late May. Feeding occurs one to two weeks after egg hatch. Hence, significant feeding will begin in early to mid-June, with the heaviest feeding in late June and early July. Prolonged wet weather increases slug and snail activity in crops.

To determine if you have slugs and/or snails in your crops, look for signs of damage which may include complete loss of small seedlings; and in older plants, large holes where the veins of the leaf remain intact (skeletonized). There are often trails of slime that glisten in the sunlight. Finding the actual slugs and snails is easiest at dusk or

dawn. If you really want to know what is happening, go out with a flashlight in the middle of the night and you may be amazed at how many slugs and snails are out feeding. Slug traps can also be built by placing boards or other materials in the field and looking underneath (you can find options for these on the internet).

Populations of slugs and snails, are often highest in fields with more crop residue, in weedy fields and along hedge rows. While they often spend most of the time underground, pulling back heavy foliage will often find them feeding there. It is estimated that only 5% of the population will be above ground during the summer months. Tillage helps to reduce slug populations, but of course this practice needs to be weighed based on your soil health goals.

In regards to management, overall long-term ecological practices may be best.

Avoid planting highly problematic crops (such as processing peas) in areas with known heavy slug populations.

- Avoid planting near fields with wet and lush borders, and near ponds and ditches.
- Consider a tilled strip between borders with slugs and your crop.
- Maintain good weed control.
- If slugs and snails are a contaminant in your crop, harvest during the day-time when fewer slugs/snails will be on the foliage.
- Baits are available for use around some crops, but generally must be kept off of the harvestable plant parts (read labels carefully).
- Lannate LV is labeled for control of slugs in cabbage only. The key to best control with Lannate is that it comes into contact with the slugs. Spray at night or in the early morning when temperatures are cool and foliage is wet with dew or rain. ●

WIREWORMS by Robert Hadad

With the emphasis on building soils and increasing organic matter, one downside is with attracting click beetles. The click beetles are a brownish dark color that easily blends in with the soil it generally hides in. the larvae of the click beetle is the wireworm. This pest is thin and segmented about an inch or so long and orangey colored. It feeds on roots of mostly grasses and grains and is more numerous when there is more crop debris and organic matter in the upper level and surface of the soil. This season, there are plenty of wireworms out there with many farmer complaints about damaged radish and baby turnips. Some have been found feeding on garlic as well.



Wireworm found near surface of vegetable plot. Photo: R. Hadad, CCE CVP

Wireworms generally don't seem to do much damage but in higher populations they can feed heavily on roots. In the spring and fall they can do a lot of damage to root crops like radish, turnips, beets, and carrots. Wireworms can stay in the larval form for up to

several years. So as click beetles lay eggs, the population of wireworms can increase and stay high for a longer period of time.

One method of scouting for wireworms before using a plot of ground for root crops is to set out a bait station. In the Ontario, Canada's OMAFRA fact sheet titled "Managing Wireworms in Vegetable Crops" (<http://www.omafra.gov.on.ca/english/crops/facts/00-047.htm>) bait station scouting can be done like this: "Whole carrots buried 3 in. (8 cm) deep at 10-20 marked sites throughout the field and retrieved in 2-3 days can give a relative measure of the threat from wireworms. Another bait system uses several ounces of coarse whole-wheat flour or rolled oats or a mixture of untreated corn and wheat seed placed into a fine, mesh pouch and buried 6-12 in. (15-30 cm) deep. Bury the pouches with soil but do not pack down. Cover the bait station with black plastic and secure the edges of the plastic with soil. These stations should be placed 2-3 weeks prior to planting. Dig up the bait stations after 2-3 weeks and count the number of wireworms. Thresholds may vary, however a general guideline is 0.5-1.0 live wireworm per bait station."

There are few useful chemical products available to rid a field of wireworms. Long rotations out of root crops and burying crop debris can certainly help. Scouting areas within a field to determine where appropriate "wireworm-free zones" are will increase your chances of an undamaged crop. ●

A Veritable Variety of Vines!

Amy Celentano, CCE Cornell Vegetable Program; edited by Darcy Telenko, CVP

Wild buckwheat (*Fallopia convolvulus*) and Field bindweed (*Convolvulus arvensis*) are two vining weeds that are often confused with each other, and this is no wonder because they do appear to be very similar. However, there are a few key differences, and with a little practice, it will become easy to tell them apart at almost any growth stage. These vines are a serious weed pest because they wind around the crop, pulling it to the ground causing yield loss and then becoming tangled in harvesting equipment. Both of these species emerge in early spring, and were already observed in onions this season.



The ocrea of the *Polygonaceae* family, characteristic of wild buckwheat, and absent from field bindweed.

Photo: Oregon State University; author has added embellishment

Wild buckwheat is an annual weed belonging to the *Polygonaceae* family, from the Latin meaning, “many knees”, which refers to the large number of nodes appearing on the vine. Vines can grow up to 6.5 feet long. A characteristic of this family and of wild buckwheat is the presence of *ocrea*, the sheath around each node where the leaf stalk joins the stem (see photo above). On wild buckwheat, this is smooth and translucent, lacking hairs or fringe. Wild buckwheat reproduces by seed, producing about 12,000 seeds per plant, and these seeds can remain viable in the soil for up to five years. Purchasing clean crop seed is a great way to prevent this weed because only a 1% contamination can yield 27 wild buckwheat plants per one square meter (10.75 ft²). Because of the persistence in the soil, cultivation can actually increase the amount of wild buck-

wheat seedlings that will emerge initially and will require multiple cultivations for management. Post-emergent chemical controls can be effective.



Wild buckwheat seedlings (left), young plant (center), and plant in flower (right).

Photos: Dr. Antonio DiTomasso, Cornell University

Field bindweed is a perennial weed and a member of the *Convolvulaceae* family, from the Latin meaning, “to turn around”, referring to the winding habit of the vine. Plants can spread ten feet in a single growing season, to a maximum of 18 feet across. Ocrea are absent in members of this family. Field bindweed produces a profusion of seeds which can remain viable in the soil for up to 20 years, but the root system is the real problem with this weed. There is an original taproot and up to six lateral roots, which spread out 1-3 feet and then turn down, essentially becoming more taproots. These roots can reach a depth of 20 feet! Buds near the top of vertical roots send out rhizomes which make it to the surface, each starting a new shoot. Well-timed cultivation is key with field bindweed, the best time being 16 days after shoots emerge, and then again every 3-4 weeks. Crop rotation can also help, as field bindweed is sensitive to shade, making a crop which produces a dense canopy another tool for management.

When plants are still small, the presence or absence of ocrea is the best way to tell them apart, as the vines and arrow-shaped leaves appear to be very similar. Other than ocrea, the flowers of each plant are very different. Wild buckwheat’s flowers form in clusters in the leaf axils and tip end of stems. They are greenish-white and no larger than one quarter inch across, and are self-fertile. Field bindweed also forms flowers at the leaf axils, but they appear singly or in twos or threes, and are funnel shaped. Each flower is about an inch across and has five white or pink petals which are fused along the edge, often with dark pink streaks along the midveins.

If you find either of these weeds in your field, please contact the Cornell Vegetable Program specialists for specific management recommendations.



Field bindweed flower (left) and plant in field (right). Photos: Dr. Antonio DiTomasso, Cornell

Sources for this article:

<https://nysipm.cornell.edu/argiculture/vegetable/weed-identification>

www.oregonstate.edu

Upcoming Events

view all Cornell Vegetable Program upcoming events at CVP.CCE.CORNELL.EDU

2018 Elba Muck Onion Twilight Meeting: Weed Control

June 21, 2018 | 5:30 PM - 8:00 PM

Mortellaro's Red Shop in the Elba muck land, Elba, NY 14058

All onion growers are invited to this event which will feature trial tours and demonstrations of pre- and post-emergent weed control in direct seeded onions. 2.0 DEC recertification credits will be offered for those that attend the entire meeting. FREE! Contact Christy Hoepting at 585-721-6953 for more info.



Ontario Produce Auction Growers Meeting

July 17, 2018 | 6:00 PM - 8:00 PM

Jonathan Sensenig, 5299 Crowe Rd, Stanley, NY 14561

This course will demonstrate pest management in fresh market vegetables in both field and greenhouse (high tunnel) vegetables, primarily for those growing for wholesale auction. A hands-on demonstration of weed, insect and disease identification in vegetables including management options. FREE! Contact Judson Reid at 585-313-8912 for more info.



New York Soil Health Summit ~ SAVE THE DATE

July 18, 2018 | Time TBD

Empire State Plaza, downtown Albany, NY

Save the date for the first New York Soil Health Summit. This event, organized by the New York Soil Health project, is for farmers, researchers, agriculture service providers, government agencies, non-profits and policy-makers interested in advancing soil health efforts across the state. Topics include local experts/grower panel, research and policies relevant to soil health, and Soil Health Roadmap breakout sessions.

Registration, summit agenda, and other details will be coming soon. Summit details will be updated at: summit.newyorksoilhealth.org For more information at this time, contact David Wolfe (dww5@cornell.edu) or Aaron Ristow (ajr229@cornell.edu). *New York Soil Health is funded through New York State Department of Agriculture & Markets.*



Fresh Market Vegetable TWILIGHT MEETING

Tuesday, June 19, 2018
5:00-8:00 PM; free dinner following
W. D. Henry & Sons, Inc.
7189 Gowanda State Rd, Eden, NY 14057

An early season fresh market vegetable discussion of production issues and pest management presentations.

Fresh Market Vegetable Twilight Meeting

June 19, 2018 | 5:00-8:00 PM

W. D. Henry & Sons, Inc.

7189 Gowanda State Rd, Eden, NY

- FSMA Update for the 2018 Season – Robert Hadad, Cornell Vegetable Program
- Scouting for Sweet Corn Pests – Marion Zuefle, NYS IPM Program
- Weed Management in Vegetable Crops – John Wallace, Cornell, and Bryan Brown, NYS IPM Program
- Early Season Veg Pest Management Discussion and Crop Walk – Darcy Telenko, Cornell Vegetable Program

2.25 DEC credits offered

FREE to attend thanks to sponsor support.
Registration requested by June 8; late registrations accepted. Dinner at 8:00 PM.

Accommodations for persons with special needs may be requested. Call 716-652-5400 at least 3 days prior to event.

Cornell Cooperative Extension | Cornell Vegetable Program



Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 5/29 - 6/04/18

Location**	Rainfall (inch)		Temp (°F)	
	Week	Month June	Max	Min
Albion	0.67	0.67	93	54
Baldwinsville	1.49	1.49	92	52
Bergen	0.84	0.84	90	54
Buffalo*	0.11	0.02	90	57
Burt	0.00	0.00	88	53
Ceres	0.68	0.66	88	47
Fairville	1.30	1.30	89	52
Farmington	NA	NA	89	51
Gainesville	0.54	0.52	84	51
Geneva	0.74	0.73	86	53
Lodi	0.84	0.84	87	53
Niagara Falls*	0.60	0.60	92	57
Ovid	1.26	1.26	87	53
Penn Yan*	2.07	2.07	88	55
Phelps	0.82	0.79	90	52
Portland	0.47	0.19	86	58
Rochester*	0.88	0.88	92	57
Silver Creek	0.17	0.02	88	58
Sodus	NA	NA	89	52
Versailles	0.07	0.04	88	56
Volney	0.57	0.51	91	52
Williamson	0.80	0.79	90	55

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - June 4, 2018

Location	2018	2017	2016
Albion	508	362	378
Baldwinsville	534	398	410
Bergen	479	347	336
Buffalo	547	380	417
Burt	423	319	NA
Ceres	466	348	294
Fairville	469	338	332
Farmington	481	347	354
Gainesville	392	274	271
Geneva	492	371	375
Lodi	558	456	420
Niagara Falls	556	432	430
Ovid	510	416	389
Penn Yan	526	408	388
Phelps	498	369	363
Portland	507	433	367
Rochester	554	409	399
Silver Creek	447	401	335
Sodus	460	363	314
Versailles	507	422	354
Volney	459	340	NA
Williamson	447	395	316

* Airport stations

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

VEGEdge SPONSORS



American Takii, Inc.
831-443-4901 | www.takii.com
Creating Tomorrow Today



Vegetable Seeds for Professionals
315-789-4155
www.bejoseeds.com



Crop Production Services
585-589-6330 | www.cpsagu.com
"Profit from our Experience"



Growmark FS - Filling Your Crop Needs
Elba Muck 716-474-0500 | Caledonia 585-538-6836
Knowlesville 585-798-3350 | Batavia 585-343-4622



Pest control products for fruit,
vegetable and field crops.
Dave Pieczarka, 315-447-0560



Call 800-544-7938 for sales or
visit www.harrisseed.com
A Grower Friendly Company



People...Products...Knowledge...

Medina, NY...(585) 798-6215
Geneva, NY...(315) 789-4450
Genoa, NY...(315) 497-2713



SEEDWAY Vegetable Seeds
800-952-7333 | www.seedway.com
We are focused on quality seed and service!



Blake Myers, 585-303-3252
vegetableseeds@aol.com
www.siegers.com



Our Vision... "To be the first choice for
growers in all of our marketplaces."
www.StokeSeeds.com

Cornell Cooperative Extension Cornell Vegetable Program

480 North Main Street
Canandaigua, NY 14424



VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program. 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.



VEGETABLE SPECIALISTS

Robert Hadad | 585-739-4065 cell | rgh26@cornell.edu
food safety & quality, organic, business & marketing, and fresh market vegetables

Christy Hoepting | 585-721-6953 cell | 585-798-4265 x38 office | cah59@cornell.edu
onions, cabbage, potatoes and pesticide management

Julie Kikkert | 585-313-8160 cell | 585-394-3977 x404 office | jrk2@cornell.edu
processing crops (sweet corn, snap beans, lima beans, peas, beets, carrots) and dry beans

Judson Reid | 585-313-8912 cell | 315-536-5123 office | jer11@cornell.edu
greenhouse production, small farming operations, and fresh market vegetables

Darcy Telenko | 716-697-4965 cell | 716-652-5400 x178 office | dep10@cornell.edu
soil health, weed management, fresh market vegetables, and plant pathology

PRECISION AG SPECIALIST

Ali Nafchi | 585-313-6197 cell | nafchi@cornell.edu

PROGRAM ASSISTANTS

Amy Celentano | ac2642@cornell.edu

John Gibbons | 716-474-5238 cell | jpg10@cornell.edu

Angela Parr | 585-394-3977 x426 office | aep63@cornell.edu

ADMINISTRATION

Peter Landre | ptl2@cornell.edu

Steve Reiners | sr43@cornell.edu

Cornell Cooperative Extension
Cornell Vegetable Program

For more information about our program, email cce-cvp@cornell.edu or visit us at CVP.CCE.CORNELL.EDU



Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities.