

Onion thrips pressure in cabbage is high. The feeding of these tiny insects causes unsightly

brownish blisters and scarring to the leaves of cabbage heads.





different crops. PAGE 3

Considering irrigation but wondering how much water your vegetable crops actually need?



Tarnished plant bugs are seemingly everywhere. This pest feeds on a large number of



PAGE 4



When the ride with Movento is over and onion thrips are still a concern, here are several scenarios for

control of this pest in onions.

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Cornell Cooperative Extension Cornell Vegetable Program

Hot Weather Means Onion Thrips in Cabbage

Christy Hoepting, CCE Cornell Vegetable Program

With harvest of wheat and the very hot weather, onion thrips (OT) pressure is high. Onion thrips are often considered the most important insect pest of cabbage. The feeding of these tiny insects causes unsightly brownish blisters and scarring on the leaves of cabbage heads, often several layers deep (Fig. 1). Damaged leaves need to be trimmed before cabbage can be marketed resulting in considerable economic losses in yield and grade.

When possible, the use of onion thrips-tolerant varieties can go a very long way towards minimizing losses from onion thrips. For example, summer cabbage varieties, Capture (Bejo - 2733), Celebrate (American Takii - T541) and Benelli (Bejo) exhibited excellent thrips tolerance in our 2009 Cornell trial. Here, Celebrate had virtually no OT damage, compared to Bajonet, which had more than 4 layers affected. Information on the relative tolerance/ susceptibility of storage, kraut and summer cabbage



Figure 1. Onion thrips feeding in cabbage resulting in unsightly brown blister and scarring that needs to be trimmed at the expense of yield and labor. Photo: C. Hoepting, CCE CVP



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

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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.



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The next issue of VegEdge will be July 25, 2018.



Happy harvesters at J. Hurtgam Farms bringing in nice, big field tomatoes, 7/17/18. *Photo: E. Buck, CCE CVP*

varieties evaluated in Cornell trials from 2005 to 2009 is available online at the new Cornell Vegetable Program website: http://cvp.cce.cornell.edu/, from the sliding menu on top, click on "cabbage" and scroll down to see a list of all of the content.

When onion thrips-tolerant varieties are not an option, the most effective insecticide is the active ingredient imidacloprid, which is marketed as Admire and several other generics. Several years of Cornell studies (Shelton *et. al.* 2003, 2004, 2008, 2010) have consistently found that Admire provided the best control of OT when applied to the soil as a directed spray to the base of plants at transplanting and 4 weeks after transplanting. Here, Admire Pro reduced OT damage from 6 to 2 layers. The next best insecticides for OT control in these trials were foliar applications of Provado (which has been replaced with Admire Pro) and Movento, followed by Assail and Radiant, and finally Warrior. Admire can be an especially economic OT control option for susceptible varieties of summer cabbage. Note that Admire Pro is a different formulation than Admire 2F and is used at different rates. There are several generic 2F formulations of imidacloprid and some have control of onion thrips in Brassicas on the label and some do not. For example, Alias 2F does, while Couraze 2F and Swede midge.

Considering Irrigation for Vegetable Crops

Yi Wang, University of Wisconsin-Madison

Evapotranspiration (ET) during these hot days can be between 0.2 and 0.3" per day. I would say 95°F will more likely result in 0.25-0.3" and 85°F will possibly lead to about 0.2". But air temp is not the only factor to determine ET, it's also related to humidity, wind speed, solar radiation, etc.

Most vegetables require at least 1" of water per week during the growing season, so per acre will require about 27,000 gallons. This amount will soak down to about 8 inches in the soil. Watering to a depth of 5 to 6 inches encourages the growth of deeper roots. Avoid quick, shallow watering, which encourages shallow root growth. Shallow roots are more susceptible to damage by sun and heat. Early morning is a good time to irrigate. Morning water prepares plants for the stress of midday heat and allows them to grow uninterrupted.

For specific vegetables:

Beans: during pollination, flowering, and pod development. Blossoms may drop and pods may fail to enlarge if watering is inadequate; 1 gallon per week per foot of row (to measure the number of gallons use a drip emitter and timer).

Cantaloupe: during flowering, fruit set, and fruit development. Keep the soil evenly moist throughout the season; 1 1/2 gallons per plant per week or 18 inches per season.



Sweet corn requires consistent irrigation especially during silking, tasseling, and ear development . *Photo: E. Buck, 7/17/18*

Corn: corn requires consistent, even watering; water is critical during silking, tasseling, and ear development. Water when tassels on small cobs begin to shrivel and 10 days before cobs are picked. Water stress can cause tassels to shed pollen before silks on ears are ready for pollination; lack of pollination may result in missing row of kernels and reduced yields.

Cucumbers: even, consistent watering during bud development, flowering, fruit development; 1 1/2 gallons per plant per week or 25 inches per season.

Eggplants: even, consistent watering from flowering through harvest; 1 1/2 gallons per plant per week or 18 inches per season.

Peppers: even, consistent watering from planting to fruit set and enlargement; 1 pint per plant a week when young, increasing to 1 1/2 gallons per plant a week or 18 in per season.

Squash: even, consistent watering during bud development, flowering, fruit development; 1 1/2 gallons per plant per week or 18 inches per season.

Tomato: consistent, even watering is critical during flowering, fruit set, and fruit enlargement; 2 1/2 gallons per plant each week or 24 inches per season. More water may be needed for non-mulched plants. Older late-maturing varieties may require less water near harvest.

Tarnished Plant Bugs

Ruth Hazzard, UMASS Vegetable Notes, July 12, 2012

This season, tarnished plant bugs are seemingly everywhere. This pest feeds on a large number of crops, weeds, and fruit. This article from retired UMass Extension educator Ruth Hazzard is thorough and worth a read. – RH



Tarnished Plant Bug adult. *Photo: UMass Extension*

Tarnished plant bug (TPB) adults and nymphs feed on several different vegetable crops, and in some fields they can cause significant damage. There are several species of tarnished plant bugs in the US, but the most common in central and eastern US is *Lygus lineolaris*. Adults are about 6 mm long (1/4 inch), brown or tan or greenish with darker markings on their wings and back. Nymphs are bright green and progress through 5 molts (instars) from first hatch to the adult stage.

The nymphs can be mistaken for aphids, but move much faster when disturbed. Overwintered adults lay eggs in spring, depositing eggs in stems and leaf ribs in host plants. These adults and nymphs attack strawberry flowers in May. A new generation of adults will produce another brood in late summer, and for most of late summer all life stages are present in the field.

Feeding: Adults and nymphs have piercing sucking mouthparts (stylets) which are used to penetrate plant tissues and suck up cellular contents. TPB select succulent, nutritious tissues such as new growth or newly forming fruits (just after blossoming). While feeding, the bugs secrete a toxic substance from their salivary glands, which kills cells surrounding the feeding site. Usually the first signs of damage are small brown spots on young leaves. As the tissue grows, healthy tissue expands while dead tissue does not, which results in holes and distorted, malformed leaves, buds or fruit. Terminal shoots and flowers may be killed.

Damage: Over half of the cultivated crops in the US are listed as hosts. In **strawberry,** the distorted growth of fruits is known as cat-facing. **Raspberry** fruit is deformed and becomes crumbly and unmarketable after TPB feeding.

In **lettuce**, leaf stems and ribs are injured, causing localized discolored scars and scabs. In beans, feeding on flowers causes them to drop, and feeding on seeds in young pods causes pitting and blemishing of pods. [See article on damage to lettuce below. ed. A. Ochterski, CVP]

In tomatoes, eggplants and peppers,

feeding may occur on flowers and stems, causing flower drop. Fruits may also be attacked leading to indentations, bumps, or yellowing of the flesh where the fruit is "stung" by the piercing mouthparts of nymphs or adults. These could be confused with stink bug damage or pepper maggot stings, but they do not have the white pithy areas beneath the skin that is typical of stink bug damage. It is not common to see this damage, but if the damage occurs

continued on next page

Tarnished Plant Bug Damage to Lettuce Judson Reid, CCE Cornell Vegetable Program

Tarnished Plant Bug (TPB) adults can be found in high numbers in produce fields this season. The adult is brown and mottled with various shades of reddish and yellowish brown, and about ¼ inch long. Nymphs are small and greenish yellow. TPB is a sucking insect that creates puncture wounds when feeding. On lettuce, and other greens such as Swiss Chard, injury is concentrated on mid-ribs and veins. The wounds are discolored, often with a black center. On fruiting vegetables nymph feeding may cause buds to drop, fruit to be misshapen, and plants to be stunted and distorted. Damage appears to be more severe in dry years. Control begins with weed management. TBP is particularly attracted to annual broadleaf weeds such as redroot pigweed and can be readily found on the inflorescence. Keeping these weeds under control and row middles clean will reduce populations. Row covers are an option in cooler conditions to exclude the pest. Recommendations for sprays to control TPB on lettuce are difficult, as the pest does not appear on many lettuce labels. Call Judson, Robert or Elizabeth for insecticide options.





continued – Tarnished Plant Bugs

it may help to determine the cause. In pepper and in basil, feeding in emerging leaves causes distortion and browning of leaves.

Weeds and field crops are also host plants: Tarnished plant bugs thrive on a large variety of weeds, flowers, forage crops, and orchard crops. Weed hosts include wild carrots and other umbelliferous crops, redroot pigweed (and other amaranths), lambsquarters, mustards, shepardspurse, rocket, goldenrod, and mullein. Alfalfa is a favored host, and harvesting alfalfa often stimulates major lygus migrations. Other legume hosts include vetch, lupine, and fava beans. Where weedy areas or field crops surround vegetable fields, continuous re-infestation of vegetables is possible – especially when weeds mature, and vegetables have young and succulent tissues.



Tarnished Plant Bug on redroot pigweed. Photo: J. Reid, CCE CVP

Management: Vegetation management on the whole farm is very important for these highly mobile pests. Focus on removing sources of infestation outside the crop: mow, disk or rototill weeds along field borders, and keep grassy areas on the farm mowed short. However, disturbing non-crop areas by mowing can encourage movement of TPB into your crop, so avoid critical periods when the crop is vulnerable or mow after insecticides have been applied to the crop. Control weeds in the crop as well – tender growth and young flowers and seeds are attractive to TPB.

There are natural enemies of TPB, including a parasitic wasp (*Peristenus digoneutis*), which was released for control of TPB in alfalfa. The wasp was released in New Jersey and has spread throughout the Northeast. It can cause up to 50% mortality,

Onion Thrips Management After Movento

Christy Hoepting, CCE Cornell Vegetable Program

Going for a ride with the "Momentum of Movento"

Movento is strategically placed first in sequence for control of onion thrips, because: 1) it works best when it is applied prior to onion bulbing; 2) its activity on adults in poor, which occur in much greater numbers later in the season; and 3) it has phenomenal residual activity. Often, when Movento is applied to onion plants up until the early bulbing stage, it can result in keeping onion thrips pressure below the spray threshold (1.0 thrips per leaf) for one to three weeks before it breaks and another insecticide needs to be applied. Typically, double applications of Movento spaced 7 to 10 days apart are used. Cornell research has shown that the momentum of Movento lasts longer with two applications of Movento compared with a single application.

New Insecticide Minecto Pro is a premix of Agri-Mek and Exirel posing a challenge for resistance management

As you know, the rules for onion thrips resistance management include:

- Do not use the same chemical class of insecticide more than once per growing season
- Do not use the same chemical class for more than two sequential applications

but currently does not reduce the numbers sufficiently to prevent damage in key crops. Common predators, such as ladybeetles, spined soldier bugs and insidious flower bugs also prey on nymphs.

White sticky traps placed above the canopy are used in strawberry and can be used in vegetables to indicate when adults are present. These traps are used as an indication of when plant bugs begin their activity in the spring and a relative indication of their abundance, not as an indication of when to control this insect. Economic thresholds have been determined for crops where TPB is a key pest, but not in most vegetable crops. It is difficult to sample tarnished plant bugs directly on plants, because they are very mobile and like to hide. In strawberry, nymphs are shaken off the flower clusters onto a flat surface and sprays applied if 4 out of 30 clusters have nymphs.

If damage is unacceptably high, use insecticide applications. Labeled products for TPB on lettuce are listed in the 2012-2013 New England Vegetable Management Guide and include several synthetic pyrethroids and carbamates. Pyganic may be used by organic growers. Avoid applications during bloom periods to avoid injury to pollinators; use them pre-bloom and postbloom. Insecticide labels often list "lygus bug" instead of specifically "tarnished plant bug".

These restrictions are in place to ensure that consecutive generations of onion thrips (2 to 4 weeks per generation) are not exposed to the same insecticide chemical class (Table 1). Because Minecto Pro is a premix of the active ingredients in Agri-Mek and Exirel, double applications of two or more of these insecticides cannot be made in the same field within the same season without violating the resistance management rules. For example, two sequential applications of Agri-Mek cannot be followed by any applications of Minecto Pro. Another challenge is that the pre-harvest interval (PHI) for Minecto Pro and all Agri-Mek products is 30 days, which limits its use to no later than the middle of the spray season. Radiant, Warrior (including generics and other pyrethroids) and Lannate all belong to different chemical classes (Table 1) and have PHIs closer to harvest.

Table 1. Chemical Class/Mode of Action (MOA) of insecticides used to control onion thrips in New York:

Insecticide Trade Name	IRAC ¹ Group
Movento	23
Agri-Mek SC Agri-Mek EC and generics	6
Exirel	28
Minecto Pro	6, 28
Radiant	5
Warrior and generics	3A
Lannate	1A

¹IRAC: Insecticide resistance action committee

A note on price.

In very general terms, Warrior and Agri -Mek (and generics) are by far the cheapest options costing about 1/6th to 1/10th the cost of Exirel, Radiant, Lannate or Minecto Pro. The low rates of Exirel and Minecto Pro and the high rate of Radiant are about \$50 per acre.

A note on efficacy.

Radiant has always been our "big gun", and growers are implementing a concerted effort to prolong its useful longevity by not overusing and abusing this insecticide. Radiant at rates of 8 to 10 fl oz per acre have demonstrated the ability to knockdown thrips populations of 4.0 per leaf and greater. In Brian Nault's studies, the low rate of Exirel at 13.5 fl oz per acre was similar to Radiant at both 6 and 10 fl oz per acre for controlling a thrips population at 4.0 per leaf, but at higher thrips populations, only the high rate of Radiant at 10 fl oz per acre could manage the infestation. Agri-Mek alone is capable of holding a thrips population of 1-2 thrips per leaf, but will fall apart with pressure much higher than that. Adding Warrior to Agri-Mek has demonstrated knocking down a thrips population of about 2-3 thrips per leaf. Also in Brian's trials, Minecto Pro at both the 7 and 10 fl oz per acre rates performed as well as Radiant at a rate of 8 fl oz per acre. Lannate has medicore activity (~40-50% control) and Warrior is weak (~25% control if any).

Radiant = Minecto Pro > Exirel = Agri-Mek + Warrior > Agri-Mek > Lannate > Warrior

When the ride with Movento is over and...

The June 13 issue of *VegEdge* illustrates the 2018 guidelines for onion thrips management plan. In a nutshell, after Movento, Option A includes Agri-Mek (2 apps) followed by either up to 2 applications of Exirel (followed by Radiant) or Radiant. Option B includes Minecto Pro (2 apps) followed by Radiant (2 apps) followed by Lannate + Warrior (up to 2 apps if need be). Obviously, there are several possibilities and following are a few examples to consider.

<u>Scenario #1:</u> thrips pressure is low (e.g. 0.6 to 1.5 per leaf) and there are 4-6 weeks before harvest.

Try to save some money and start with Agri-Mek (IRAC 6). For an additional \$2, Warrior (IRAC 3A) may be added, especially if thrips are 1.3 to 1.5 per leaf. If 7 days after this spray, thrips pressure is within the range of Agri-Mek +/- Warrior, make a second application. After these treatments, you may not use Agri-Mek (IRAC 6) or Minecto Pro (IRAC 6, 28) again this season. After this, treatments will get expensive with Exirel (IRAC 28) and Radiant (IRAC 5) being your choices.

If, **after the first application of Agri-Mek**, **thrips pressure exceeds 2.0 per leaf**, **you may jump track and apply Minecto Pro**. Note that after Agri-Mek (IRAC 6) followed by Minecto Pro (IRAC 6, 28), you may not apply either of these insecticides again. Your choices would include Radiant, Exirel and Lannate. Technically, of you used Warrior with Agri-Mek, you should not use it again for the rest of the season either. Although, we do not consider Warrior a strong insecticide, preserving its effectiveness in order to top off Agri-Mek or Lannate would be helpful.

<u>Scenario #2:</u> thrips pressure is high (> 2.0 thrips per leaf) and there are 4-6 weeks before harvest.

In this case, it would be best to use Minecto Pro (IRAC 6, 28). After two applications of Minecto Pro, you may no longer use Agri-Mek (IRAC 6) or Exirel (IRAC 28) for the rest of the season. Choices after Minecto Pro are Radiant or Lannate + Warrior.

If after the first application of Minecto Pro, thrips pressure is reduced to 1.5 or less, you may jump track and save some money by applying Agri-Mek +/- Warrior. After this combination, you may not apply Agri-Mek or Minecto Pro again for the rest of the season. Your most obvious choice remaining would be Radiant.

<u>Scenario #3:</u> thrips pressure is high (>2.0 thrips per leaf) and there are less than 4 weeks before harvest. There is not enough of a pre-harvest interval to use Agri-Mek or Minecto Pro (30 day PHI), so you would have to use Radiant and hopefully this will be all you need.

WNY Sweet Corn Trap Network Report, 7/17/18

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

Thirty-five of 38 sites reported this week. European corn borer (ECB)-E was caught at 8 sites and ECB-Z was caught at 6 sites. Corn earworm was caught at 9 sites with 5 sites high enough to be on a 4, 5, or 6 day spray schedule (see table below). Fall armyworm (FAW) was caught at 4 sites and Western bean cutworm (WBC) continues to increase, with 17 sites reporting catches.

It is recommended that all fields that are in the whorl or early tassel stage be scouted for WBC egg masses with a 4% threshold for processing sweet corn and a 1% threshold for fresh market sweet corn. WBC usually lay eggs on the upper side of the top 1-3 leaves of pre-tassel corn. After tasseling has finished WBC seek out younger corn or dry beans.





WBC egg mass shadow. Photo: T. Baute, OMAFRA

WBC egg mass. WBC

WBC eggs become purple prior to hatch. *Photo: Marlin Rice*

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 $80^\circ F$ for the previous 2-3 days.

Late Blight Risk Update

John Gibbons, CCE Cornell Vegetable Program

There have been no new late blight confirmations this past week. We will continue to watch the national occurrence map to track late blight movement.

Scout fields twice a week. See the table for the Blight Units (BU) accumulation from around the region. The trigger in the Decision Support System (DSS) forecast for applying a fungicide is 30 BU's if the variety is susceptible. All tomato and potato growers, conventional and organic, should be applying a protectant fungicides and monitoring the DSS to determine spray intervals. The only places to surpass the 30 BU threshold this week through the forecast period are Ceres, Wellsville and Penn Yan, where significant rain has occurred in the last week on several days. Albion also reached 30 BU's with the help of some higher relative humidity. As we move through the end of July and August, a weather pattern change is forecasted to occur which will allow cooler and moister conditions to occur. Remain diligent in monitoring your fields as this type of weather could become conducive for late blight development.

It takes between 5-7 days for eggs to hatch. It is critical that sprays are timed before the larvae have a chance to enter the ear. The egg mass will become purple in color approximately 24 hours before egg hatch (see photo).

Degree-day accumulation moth emergence (begin	Percent WBC moth emergence based on degree day			
Accumulated Degree-days	% Moth Emergence	accumulation, data		
1319	25%	Nebraska		
1422	50%			
1536	75%			

WNY Pheromone Trap Catches: July 17, 2018

	ECB-					DD to
Location	E	ECB-Z	CEW	FAW	WBC	Date
Baldwinsville (Onondaga)	0	0	0	0	7	1318
Batavia (Genesee)	0	9	0	0	0	1319
Bellona (Yates)	0	0	0	0	0	1363
Eden (Erie)	0	0	0	0	11	1286
Farmington (Ontario)	1	0	0	0	1	1251
Geneva (Ontario)	20	2	0	0	0	1311
Hamlin (Monroe)	NA	NA	NA	NA	NA	1207
Kennedy (Chautauqua)	0	0	1	0	1	1169
Pavilion	0	NA	2	0	20	1060
Penn Yan (Yates)	0	0	0	0	1	1354
Ransomville (Niagara)	0	1	0	0	2	1352
Seneca Castle (Ontario)	3	1	1	1	0	1249
Williamson (Wayne)	NA	NA	NA	NA	NA	1171
ECB - European Corn Borer	WBC -	Western B	ean Cuty	vorm		

CEW - Corn Earworm

FAW - Fall Armyworm

NA - not available

DD -

Degree Day (mod. base 50F) accumulation 📀

Late Blight Risk Chart, 7/17/18

Location ¹	Blight Units ¹ 7/11-7/17	Blight Units ² 7/18-7/20	Location ¹	Blight Units ¹ 7/11-7/17	Blight Units ² 7/18-7/20
Albion	25	5	Lodi	0	7
Baldwinsville	11	10	Lyndonville	10	10
Bergen	5	0	Medina	16	0
Buffalo	14	0	Niagara Falls	8	0
Burt	5	0	Penn Yan	21	10
Ceres	34	13	Rochester	18	1
Fairville	18	0	Sodus	20	0
Farmington	23	0	Versailles	23	0
Gainesville	NA	NA	Volney	17	5
Geneva	10	2	Wellsville	26	7
Kendall	6	0	Williamson	28	0
Knowlesville	0	0			

¹ Past week Simcast Blight Units (BU)

² Three day predicted Simcast Blight Units (BUs) **O**



Seeing ozone and other heat related damage on several crops. This will often appear as a discoloration and tissue collapse and only affect one age group of leaves. – *EB* [See cover article of July 5 issue of VegEdge for more information on ozone injury. ed. A. Ochterski, CVP]

CUCURBITS (CUCUMBERS, MELONS, and OTHER VINES)

Spider mites in watermelon (see photo). Root diseases like verticillium are taking a toll in the dry weather. Coppery patches of squash bug eggs are present, you want to catch these things early in your crops! Downy mildew is forecast to move into the lower Hudson Valley this week. – *EB*

ONIONS

Onion thrips continue to be the hot topic in onions this week, as these pests are favored by the continuing hot and dry weather. Combination of harvest of wheat and hay and early transplants lodging and drying down has resulted in a lot of movement or influx of thrips. Several fields have strong "edge" effects where thrips populations can be 4-10 times higher than numbers within the field. In some cases, it may make sense to just spray field edges to knock down these hot spots and prevent them from encroaching farther into the fields. Ideally, the

threshold to spray should be triggered by the thrips population within the field, and not by the numbers that include the edge effect. However, this practice does vary among farms. Although Movento has definitely been holding back thrips populations from exploding, often one week after the second spray, numbers have not been as low as we normally see; the ride with the momentum of Movento has been only a week, if that. After Movento, when pressure is 2.0 per leaf or less, many growers have been opting to go to Agri-Mek next in sequence. Other options include Minecto Pro or Exirel. To preserve useful longevity of "big gun" Radiant, it is strongly encouraged to delay use of Radiant until month of August, so that only the last generation of the season is exposed to this mode of action. See article, page 5, for more information on managing onion thrips after Movento. The Cornell Onion Thrips Management Plan is available on the CVP website (<u>https://</u>

cvp.cce.cornell.edu/submission.php?id=587&crumb=crops | crops | onions | crop*20) and an article explaining the plan is in June 13 issue of VegEdge. Botrytis leaf blight is generally lower than last week after that unexpected explosion. Tip burn is starting to show up in many fields, as onions are bulbing, and along with it, early lesions of Stemphylium leaf blight (SLB) can be found in the necrotic tissue of outer leaves and tips as they die back. Although close to 100% of plants may have SLB lesions, the goal is to control the disease to the extent that excessive leaf dieback does not occur. At this time, all fields that have bulbs 1-inch or greater should start/continue SLB fungicide program. There are lot's of choices – see article in July 5 issue of VegEdge for a lot more information. – *CH*

PROCESSING CROPS

Heat stress and drought continue to be the major issue in WNY. Some areas received beneficial rainfall this week, while others did not. Irrigated fields are looking generally good and not many other problems being reported at this time. For snap beans, the critical period is flowering and pod development. However, in really dry areas, growers are needing to irrigate to get the crop established. Often times leaves in a certain stage of growth may show symptoms of burn or death (see photo).

<u>White mold in snap beans</u>: So far, this has been a low risk year because of heat and drought, but don't let your guard down if you are irrigating beans and have a dense canopy. We also tend to see more white mold in later plantings when environmental conditions favor infection and growth of the fungus. Remember that spores of the fungus *Sclerotinia sclerotiorum*, that causes white mold only infect senescing flowers. If you are in a field with a



Death of a susceptible stage snap bean leaf due to heat and drought stress. *Photo: J. Kikkert, CVP*

history of white mold, and environmental conditions exist for infection (periods of soil and leaf wetness, morning dews, fog) then a fungicide application is warranted. Most fungicides are only effective if applied at early flowering (when 10% of the plants have flowers). Cornell research has shown that if you miss the timing of the first spray, then Omega fungicide would be the choice product to use. Flowering can progress very quickly in hot weather. No currently registered fungicides are considered curative, so if you are beyond flowering and/or see white mold, then it is too late.



Spider mite damage on watermelon. Note the stippling and yellow discoloration. *Photo: E. Buck, CVP*

continued - CROP Insights

<u>Common armyworms</u> were seen in pre-tassel processing sweet corn this week (photo). There was heavy chewing of the leaves and frass in the whorls. Worms of various sizes were seen upon peeling back the whorl. Many of the worms we saw this week were soon to be pupating and not of further concern so a spray was not warranted. Just something to be aware of when out scouting. -JK



Common armyworm in sweet corn: chewing damage and frass in whorl (left), worm found by peeling back the whorl (center), and armyworm and frass on leaf (right). *Photos: J. Kikkert, CVP*

TOMATO, PEPPER, EGGPLANT

Bacterial spot and speck are spreading rapidly in infected tomato and pepper fields in this weather. In many cases, stakes were carried over from one year to the next and seem the most probably source. Various methods of sanitizing stakes appear to have been insufficient to remove these diseases from stakes exposed to spot/speck last year. Eggplants are prone to spider mites. Seeing aphid populations building in peppers. Sun scald is happening in many peppers, too. – *EB*



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

Genesee Valley Produce Auction Growers Meeting

July 20, 2018 | 1:00 PM - 3:00 PM Mahlon Girod farm, 7918 Tucker Hill Rd, Houghton, NY 14744



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 such as inter-row cover crops, grafting and where appropriate, spray options will be used to educate growers. Judson Reid, Senior Extension Associate with the Cornell Vegetable Program along with CCE staff will instruct participants and facilitate peer-based learning.

Orleans County Produce Auction Growers Meeting

July 23, 2018 | 6:30 PM - 8:30 PM

Johnson Creek Farm, 12625 Roosevelt Hwy, Lyndonville, NY 14098



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 such as inter-row cover crops, grafting and where appropriate, spray options will be used to educate growers. Judson Reid, Senior Extension Associate with the Cornell Vegetable Program along with CCE staff will instruct participants and facilitate peer-based learning.

Seneca County Produce Auction Growers Meeting

July 25, 2018 | 7:00 PM - 9:00 PM Amos Stoltzfus farm, 1795 Gilbert Rd, Ovid, NY 14521

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 such as inter-row cover crops, grafting and where appropriate, spray options will be used to educate growers. Judson Reid, Senior Extension Associate with the Cornell Vegetable Program along with CCE staff will instruct participants and facilitate peer-based learning.

Finger Lakes Produce Auction Grower Twilight Meeting

July 27, 2018 | 6:00 PM - 8:00 PM 5351 Jessop Rd, Dundee, NY 14837

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.

Chautauqua Produce Auction Growers Meeting August 14, 2018 | 6:30 PM

Andy E. Yoder farm, 2051 Rt 62, Frewsburg, NY 14738

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 crop walk will provide 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.

Oswego Onion Growers Twilight Meeting

August 22, 2018 | Time TBD Location TBD

Mark your calendars! This meeting will feature a fungicide trial tour. More details to follow.

3rd Annual Organic Vegetable Pest Management Field Day

August 23, 2018 | 4:00 PM - 7:00 PM Cornell Lake Erie Research and Extension Lab, 6592 W Main Rd, Portland, NY 14769

This program will focus on results from research trials, showcasing cultural techniques, effective varieties and treatments for organic production. We will highlight the current disease issues in the 2018 growing season, their detection and spread based on this season's climate conditions, and management tools available to reduce impacts on yield. In addition to viewing the results of the research plots, sessions will be offered on pest identification and control options by CVP team members. Regional equipment dealers and industry representatives will be invited to display equipment and new technology. To see the full agenda, visit <u>https://cvp.cce.cornell.edu/event.php?id=979</u> FREE to attend! For more information, contact Judson Reid at 585-313-8912.

Genesee Valley Produce Auction Growers Meeting

August 24, 2018 | 1:00 PM - 3:00 PM David Hostetler farm, 10228 Briar Hill Rd, Dalton, NY 14836

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 crop walk will provide 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.

No-Till and Never-Till Soil Health Workshop

August 28, 2018 | 12:00 noon - 5:30 PM Branton Farm, 8538 Route 237, Stafford, NY 14143

The Western New York Soil Health Alliance will be holding a Soil Health Workshop on August 28, 2018 focusing on No-Till practices and benefits. Frank Gibbs, a certified Soil Scientist who formed a Wetland and Soil Consulting Service in 2012 after working for 36 years for USDA in Ohio will be digging underground to look at a section of field that has NEVER had any tillage and will compare it to an adjacent area with a history of tillage practices. James J Hoorman, a NRCS Soil Health Specialist for Ohio & Michigan, will be sharing information on the problem of slugs and voles in the higher residue farming practices. DEC and CCA credits will be offered. Pre-registration fee is \$15; \$25 at the door. Red Osier food truck will be onsite for purchase of roast beef sandwiches from 12:00-4:00 PM. For more information, visit http://www.wnysoilhealth.com and click on the Events tab.











Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 7/10 - 7/16/18

	Rainf	all (inch)	Temp (°F)	
Location**	Week	Month July	Мах	Min
Albion	0.02	0.02	93	54
Baldwinsville	0.00	0.93	98	53
Bergen	0.02	0.04	94	50
Buffalo*	0.18	0.32	89	57
Burt	0.03	0.14	91	53
Ceres	0.72	2.84	90	46
Fairville	0.09	0.51	93	50
Farmington	0.00	0.05	95	50
Gainesville	0.61	0.87	86	47
Geneva	0.00	1.15	92	52
Lodi	0.07	0.80	95	50
Niagara Falls*	0.01	0.16	91	NA
Ovid	0.36	0.84	94	52
Penn Yan*	0.05	0.31	91	55
Phelps	0.08	0.13	94	50
Portland	1.22	1.53	85	57
Rochester*	0.10	0.58	92	55
Silver Creek	0.51	0.85	86	54
Sodus	NA	NA	94	49
Versailles	NA	NA	87	51
Volney	0.10	0.68	94	51
Williamson	0.46	1.20	90	53

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - July 16, 2018

Location	2018	2017	2016
Albion	1345	1155	1210
Baldwinsville	1407	1242	1234
Bergen	1267	1127	1094
Buffalo	1411	1194	1236
Burt	1203	1091	NA
Ceres	1180	1048	934
Fairville	1219	1107	1064
Farmington	1263	1105	1106
Gainesville	1064	1085	883
Geneva	1305	1168	1154
Lodi	1422	1309	1275
Niagara Falls	1466	1309	1320
Ovid	1349	1242	1212
Penn Yan	1367	1253	1233
Phelps	1181	1172	1133
Portland	1346	1236	1151
Rochester	1443	1246	1250
Silver Creek	1233	1199	1105
Sodus	1212	1155	1034
Versailles	1299	1202	1087
Volney	1217	1092	NA
Williamson	1182	1143	1051

Airport stations Data from other station/airport sites is at: <u>http://newa.cornell.edu/</u> Weather Data, Daily Summary and Degree Days.





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Cornell Cooperative Extension Cornell Vegetable Program

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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.

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