Alternaria Leaf Blight has been found on cantaloupe in the eastern portion of our region. It can result in poor fruit quality if the disease causes defoliation.

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VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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Photo: R. J. Anderson, Cornell Cooperative Extension

Cornell Cooperative Extension
Cornell Vegetable Program

Alternaria, the Other Leaf Blight of Cantaloupes

Judson Reid, CCE Cornell Vegetable Program

The Cornell Vegetable Program confirms this week the presence of Alternaria Leaf Blight (also known as Leaf Spot) on cantaloupes in the eastern portion of our region. This disease may look and sound familiar to Early Blight of tomatoes and potatoes, as it is caused by a similar fungus. In this case, Leaf Blight is caused by *Alternaria cucumerina* which can infect cantaloupe, watermelon, squash, pumpkin and cucumber. Leaf blight usually appears midseason and can result in poor fruit quality if the disease causes defoliation. Symptoms first appear on the upper surface of crown leaves as small black spots growing to nearly one-half inch in diameter with a yellow halo. Larger spots show concentric rings typical of Alternaria diseases.

Leaf blight overwinters on diseased plant debris and likely survives in New York for multiple years. Infection and disease development are favored by extended high relative humidity and higher temperatures (68 to 90°F).

Alternaria Leaf Blight of cantaloupe. Note the yellow halo around the spots. *Photo: J. Reid, CCE CVP*

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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.

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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 August 8, 2018.

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A 2-year soil rotation out of cucurbits is essential to break the disease cycle. Protectant fungicides should be applied in mid-July when vines run and fruit have been set. A spray program that addresses Powdery and Downy Mildews will also achieve recommended control for Alternaria. Quadris, Cabrio or Pristine (all group 11), have 0 or 1 day PHI. Endura (group 7) is also 0 D PHI. Inspire Super (groups 3+9) is a 7 D PHI.

Alternaria leaf blight on cantaloupe. *Photo: J. Reid, CCE CVP*

Given Downy Mildew management includes the addition of protectants such as copper, chlorothalonil or mancozeb; these PHIs will also need to be considered. Organic growers can use copper materials.

Alternaria species will also cause leaf and fruit spots on eggplant, and currently active throughout the region. These Alternaria species are *A. solani* and *A. alternate*. Spots are similar to other Alternaria diseases, with dark, concentric rings. If a disease outbreak is detected through scouting, begin sprays as first fruit ripens and continue on a seven to ten day interval. Quadris and Cabrio (both group 11) have a 0 D PHI, Rhyme (group 3) also has 0 D PHI and Bravo (M5) has a 3 D PHI. Rotation away from tomato and potato are critical to reducing this disease on eggplant.

Alternaria on eggplant. Note the dark, concentric rings. *Photo: J. Reid, CCE CVP*

New Organic Management Strategies for Swede Midge

Christy Hoepting, CCE Cornell Vegetable Program

Swede midge (SM) is a tiny fly that seeks out the growing points of brassicas in which to lay its microscopic-sized eggs, which hatch into tiny larvae whose toxic saliva causes a series of abnormal growth (Fig. 1; See our diagnostic video: Better Know a Pest: Swede Midge at https://youtu.be/b3_o3SSPY90). **Only plants belonging to the brassica families are hosts to swede midge: cultivated brassicas, broccoli, cauliflower, Brussels sprouts, turnips, kale, kohlrabi, etc. as well as canola and brassica weeds (e.g. Shepherd;s purse and wild mustard)**. With multiple generations per year that are active from May until October, a SM population can build tremendously within a single growing season, provided they have a suitable host to flourish. High losses from swede midge typically occur in broccoli. **Organic growers with SM infestations may want to implement some new management strategies for their fall brassica plantings.** The following new recommendations were derived from an extensive project from 2015-2017 (Hoepting *et. al*.) that monitored SM populations in relation to management practices and trialed new management strategies on seven small-scale organic brassica farms in the CVP region.

Figure 1. Swede midge larvae and its feeding damage in brassica crops.

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NEW RECOMMENDATION FOR CROP ROTATION

Without any scientific research, entomologists conservatively recommended far and wide rotation of brassica crops to be: **> 1 km (3168 ft) and > 3 years.** Unfortunately, this is simply not feasible on most small organic farms. Three years of monitoring SM population activity on seven small-scale organic farms in New York indicated that **spring emergence of the overwintering generation begins in mid-May and lasts until mid-July/early-August**, with peak activity in late-May and June (data not shown). **Waiting to plant brassicas until after spring emergence had subsided decreased SM damage dramatically, and increased marketability by 70% (Fig. 2).**

The new recommendation for crop rotation is: ~500 ft and 2.5 months. This **works extremely well on farms that have multiple secluded fields**, especially when the fields are separated by wooded areas. See Figure 3 for an example crop rotation plan for such a farm.

- Expect SM spring emergence to occur where SM-infested brassicas were grown previous fall/summer.
- Do not plant brassicas in such fields until late-July when spring emergence has subsided.
- Do not plant brassicas season-long within the same field.

Unfortunately, this strategy does not work on small organic farms with only a single contiguous land base. Our monitoring studies showed that rotation of broccoli from one side to the other of a 12 acre field did not prevent SM damage from occurring, at least in broccoli. Therefore, use of **insect exclusion netting should be considered for high value most preferred brassica crops, such as broccoli and kohlrabi.** The relative susceptibility/preference to SM of different brassica crops are listed in Table 1. Least preferred brassica crops such as Chinese cabbage and turnips could be planted in locations where SM population is expected to be higher.

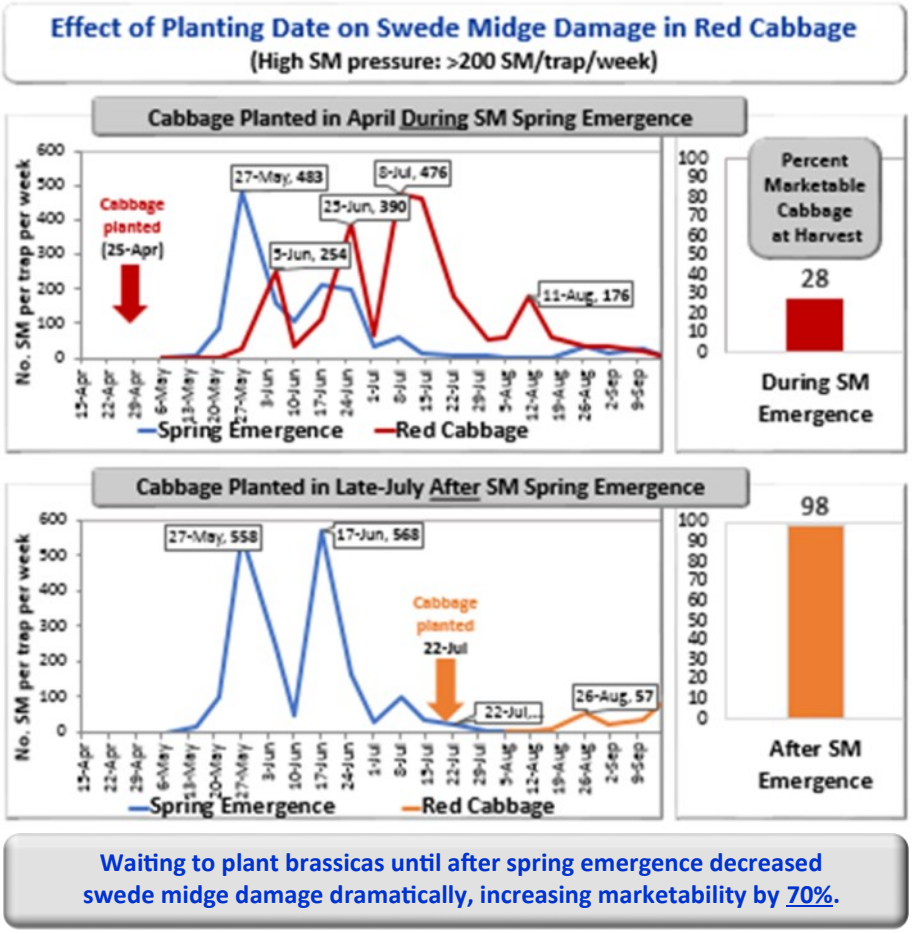

Figure 2. Swede midge (SM) trap catch data demonstrated that when brassicas were planted during spring emergence of the overwintering generation (e.g. in April), high levels of unmarketable heads resulted (top). When planting of brassicas was delayed until spring emergence had decreased (e.g. in late July), brassica crop was marketable (bottom). Results from Hoepting 2015.

INSECT EXCLUSION NETTING FOR SWEDE MIDGE CONTROL

Results from five on-farm trials and demonstrations from 2015-2017 showed that **use of insect exclusion netting provided 100% control of SM.** In the trials, ProtekNet 14-ft width, 25 gram (Dubois Agrinovation) was used, which was secured by plastic clamps to electrical conduit hoops 4 ft wide x 4 ft high placed every 4-6 ft (Fig. 4).

Key findings for effective use of insect exclusion netting for swede midge control:

- Very effective, even in fields with recent heavy SM infestations. Key is **to set up netting on ground that has not been cropped to SM-infested brassicas in at least 3 years.** SM infestations may have otherwise occurred in field. SM larva drop from an infested brassica plant to the soil to pupate. Adults emerge from pupae, which can fly to seek out a mate and suitable host to lay eggs. You do not want SM to emerge from the ground into the netting. Netting should also be secured to the ground (rocks, sod, soil, etc.) to ensure SM does not enter into the netting from the outside.
- Weeds were managed more effectively when netting was used **in combination with mulch** (e.g. plastic, landscape fabric, hay/straw). Netting does not need to be disrupted for weeding when mulch is used.
- **Differences in plant development and quality** occurred between netting and open air and among mulch types under the netting that resulted in both increased and decreased yield/quality (Fig. 5)

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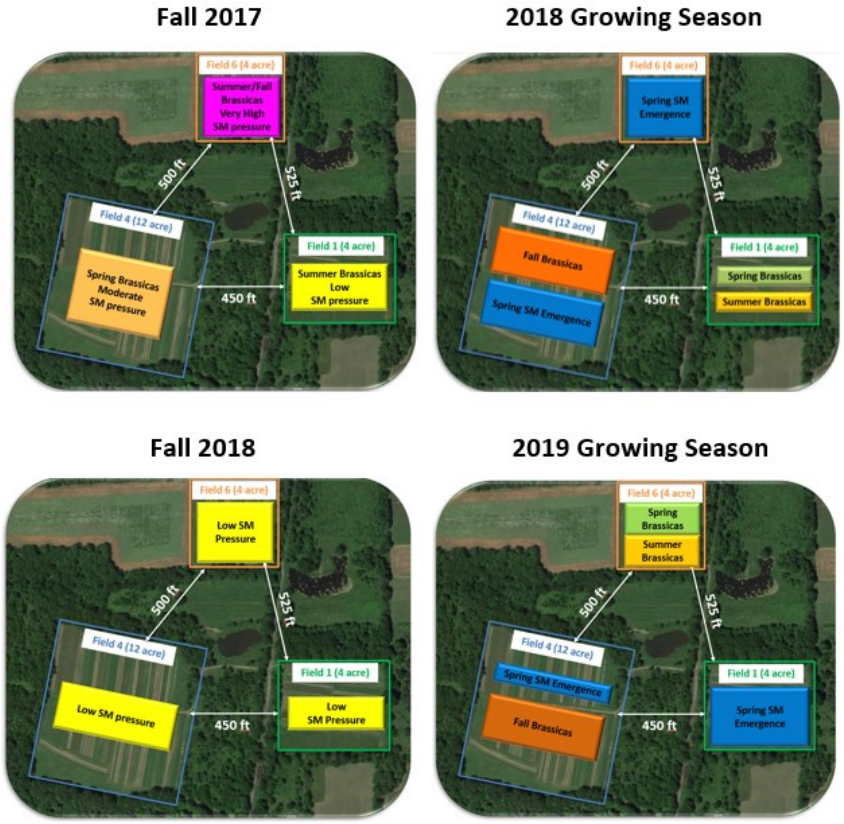

Figure 3. Management plan for swede midge (SM) on organic farm with multiple secluded fields. **Top left:** Relative SM pressure at the end of the 2017 growing season based on SM trap catch data and crop damage. **Top right:** In 2018, the main SM spring emergence sites are expected to occur where high levels of infestation occurred the previous fall and summer (blue). Spring (green) and summer (yellow) brassica plantings will go in Field No. 6 where SM pressure is expected to be the lowest. Instead of allowing SM to build across the season from planting to planting, the fall brassica planting (orange) will go in Field No. 4 after SM emergence has subsided. Field 6 will be rotated out of brassicas to allow the SM population to crash. **Bottom left:** By disallowing SM to build up in any planting, by the end of the season in 2018, SM pressure should be low on the entire farm. **Bottom right:** For the 2019 growing season, plant spring and summer brassicas in the field that had been rotated out of brassicas for the entire year (Field No, 4). Rotate field that was in spring and summer brassicas in previous year completely out of brassicas (Field No. 4). Fall brassicas can be planted in Field No. 4 after spring emergence has subsided.

Table 1. Relative crop preferences from broccoli to Chinese cabbage

Most preferred	Red Russian kale Broccoli	– It appears SM will seek out these crops over all others when there is a choice.
Second most preferred	Collards Other Russian kales Cauliflower/Romanesco Kohlrabi	
Third most preferred	Brussels sprouts Cabbage	– Often red cabbage varieties preferred over green – Once cabbage is heading, it is least preferred
Second least preferred	Turnips/radishes Winterbore kales	
Least preferred	Bok choy Savoy cabbage Chinese cabbage	– We have several case studies and trial results where these crops sustained very high SM populations without any damage.

Results bases on Hoepting swede midge monitoring and on-farm trials, 2015-2017.

- Netting provided **beneficial exclusion of flea beetles and cabbage worms (Fig. 5)** and **detrimental inclusion of cabbage worms and slugs.** Make sure transplants are free of pests before covering with netting. Slug bait may also be used to alleviate issues with slugs under netting.
- Expensive and labor-intensive: **Costs ~$200 per 100-ft bed** (not including initial investment of ~$200 in hoops, stakes and clamps that are reusable). Reusability of netting depends on how long it was used over a crop and how it was secured to the ground. When sod or soil is used to secure the edges, weeds often grow through it and it tears when removed.
- Netting will likely only be **economically feasible on the highest valued brassica crops such as broccoli.** Netting has been used successfully with low hoops over kohlrabi.

For more information, or if you would like help confirming whether you have swede midge, contact Christy Hoepting (cah59@cornell.edu; 585-721-6953) and/or visit the SM information site for the US: http://www.nysaes.cornell.edu/ent/swedemidge/. There is a new factsheet on organic management of swede midge, available on the website.

Figure 4. Insect exclusion netting placed over electrical conduit hoops to protect broccoli under high swede midge pressure. *Photo: C. Hoepting*

Figure 5. Insect exclusion netting was also shown to exclude flea beetles and cabbage worms, as well as advance plant growth over brassicas grown in open air.

General Management Strategies for Rhizomatous Perennial Weeds

Elizabeth Buck, CCE Cornell Vegetable Program

Last week's VegEdge had an article on horsenettle, which is a rhizomatous perennial weed. Other perennial rhizomatous weeds include Canada thistle, perennial sowthistle, bindweed (aka field morning-glories), yellow nutsedge, and quackgrass. All of these weeds have running stems that go through the soil and have many buds along their length. In the spring, some of those buds emerge as vigorous, troublesome shoots. The rhizome stems serve to store carbohydrate reserves over the winter and as propagation material.

Tillage and other field operations function to propagate these rhizomes. Each pass with a chisel plow, for example, will distribute rhizome pieces up a field. New plants can emerge from a ¼ inch long segment buried a foot below the surface. As you can imagine, this makes mechanical control challenging. The critical management objective for all perennial weeds is to kill the overwintering, underground tissues. In the case of perennial rhizomatous weeds, this is often most efficiently achieved through the use of translocating herbicides applied between mid-summer and early fall.

Translocating herbicides are taken up by the plant and follow the plant's food to whatever tissue is most actively growing. In late summer and early fall, perennials are sending resources to the overwintering structures, like rhizomes, to prepare for winter. In the spring, resources are flowing from the belowground to the new shoots, and the rhizomes are being physically depleted. Around bloom that balance begins to shift for many perennial species. Thus, applications of translocating herbicides are often more effective in the long run when applied at or after bloom. Glyphosate and several group 4 herbicides like 2,4-D are examples of translocating herbicides. Other herbicides can be used in this manner on a case-by-case basis, like Assure II for quackgrass rhizomes.

Pre-emergent herbicides generally have little impact on emerging rhizome shoots because they are designed to control seedlings, not established plants. **In-season contact herbicides** can knock back the top growth of most perennial rhizomatous weeds. This has a **two-fold effect** on the rhizomes:

1) reduces the amount of photosynthates transported to below-ground storage
2) can force the rhizome to further expend energy reserves by generating replacement shoots.

This two-fold approach underpins the cultural and mechanical control strategies for rhizomatous broadleaf perennials. Step 1 is to weaken the rhizome by depleting the energy reserves. Step 2 is to limit the amount of energy that is allowed to go back into the ground to replenish old rhizomes and grow new ones.

Perennial sowthistle showing underground rhizomes. *Photo: C. Hoepting, CVP*

Rhizome depletion occurs every time new shoots emerge. The larger the rhizome, the more energy it has to grow shoots. Keep in mind that not every bud on a rhizome turns into a shoot – several are held back in case the plant needs to regenerate shoots. Here are **two tactics** to develop:

1) Forced depletion via recurrent regeneration

Start with smaller rhizome pieces and always keep them sending resources upward. Do this by eliminating shoots several times over the course of the season using cultivation, mowing, etc. However, and **this is key, taking a mechanical approach means committing to making many control passes throughout the season**. Remember that every time ground infested with rhizomatous perennials is worked the weed is propagated and there are many times more weeds to control. That means there are many more opportunities to lose control of individual plants and make the problem worse if repeated operations to limit top growth do not occur or are ineffective. **Successfully eliminating top growth multiple times not only depletes rhizomes, it also effectively prevents the development of new rhizomes and the replenishment of old rhizomes.**

2) Limit carbohydrate storage via induced stress

Perennial weeds are less likely to overwinter if they have weak rhizomes. They also are less tolerant of other stresses. For example, **heavy competition from cover crops, drought, or disease have a better chance of finishing off a weak** rhizomes than one left to grow all summer. This same logic applies to fall herbicide use – **a weaker rhizome is easier to kill**. Rhizomatous perennial problems are the perfect scenario for **making full use of** as many tools in the **weed control tool box** as possible, to best exploit all the weaknesses in the biological cycles of these difficult plants. **Unfavorable crop rotations, dense cover crops, and narrower crop rows or higher planting density** are some examples of other toolbox techniques that will stress perennial weeds.

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Though overwintering plants are a primary concern, seeds deposited into the seed bank can permit re-infestation down the road. Aim to **control the plants before the seed can mature** by attacking populations shortly after flowering begins. Cultivation can be insufficient to deal with large plants in bloom, and the timing often prohibits herbicide use within a vegetable field. In these cases, consider taking a mower or weed whacker to patchy, isolated stands of large that are going to bloom. Luckily, seedlings are far easier to kill than established plants. When caught early, mechanical or chemical control can be effective against seedlings of perennial rhizomatous weeds.

Tackling perennial rhizomatous weeds may be a multi-season task, but it is achievable. With a good weed map, dedication, and perseverance, these troublesome weeds can be conquered.

Late Blight Risk Update

John Gibbons, CCE Cornell Vegetable Program

There have been no new late blight confirmations this past week.

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. While there have been no new late blight occurrences, the weather has become more favorable for late blight development. This week all stations reached the 30 BU's needed to trigger a spray by the end of the forecast period on 8/3. Monitor your fields closely. With the weather change to frequent rains in some areas, new finds will probably start trickling in. You can monitor late blight development at the following web address: https://usablight.org/map.

Late Blight Risk Chart, 7/31/18

Location[1]	Blight Units[1] 7/25-7/31	Blight Units[2] 8/01-8/03	Location[1]	Blight Units[1] 7/25-7/31	Blight Units[2] 8/01-8/03
Albion	47	18	Lodi	NA	NA
Baldwinsville	24	12	Lyndonville	30	19
Bergen	29	13	Medina	29	18
Buffalo	33	14	Niagara Falls	44	20
Ceres	45	20	Penn Yan	37	21
Elba	32	13	Rochester	42	15
Fairville	23	15	Sodus	34	12
Farmington	37	20	Versailles	38	19
Gainesville	NA	NA	Volney	30	14
Geneva	24	15	Wellsville	48	21
Kendall	24	10	Williamson	41	13
Knowlesville	22	13			

[1] Past week Simcast Blight Units (BU)
[2] Three day predicted Simcast Blight Units (BUs)

WNY Sweet Corn Trap Network Report, 7/31/18

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

Thirty-four of 38 sites reported this week. European corn borer (ECB)-E was caught at 13 sites and ECB-Z was caught at 6 sites. Corn earworm was caught at 22 sites with 18 sites high enough to be on a 4, 5, or 6 day spray schedule (see table below). Fall armyworm (FAW) was caught at 16 sites and Western bean cutworm (WBC) continues to increase, with 27 sites reporting catche. WBC flight will probably peak over the next week.

FAW numbers also increased this week. At sites where CEW are being caught in high enough numbers to determine the spray schedule, those applications will be sufficient to take care of other worm pests that are present. Where CEW are not determining the spray schedule, scout to be sure that FAW and other pests are not above threshold.

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.

Degree-day accumulations in relation to percent moth emergence (beginning May 1, base 50°F)	
Accumulated Degree-days	**% Moth Emergence**
1319	25%
1422	50%
1536	75%

Percent WBC moth emergence based on degree day accumulation, data from University of Nebraska

WNY Pheromone Trap Catches: July 31, 2018

Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD to Date
Baldwinsville (Onondaga)	1	1	6	4	39	1625
Batavia (Genesee)	0	12	2	0	20	1621
Bellona (Yates)	3	0	1	2	58	1669
Eden (Erie)	2	0	1	0	36	1568
Farmington (Ontario)	0	0	0	0	0	1541
Geneva (Ontario)	2	0	5	4	7	NA
Hamlin (Monroe)	NA	NA	NA	NA	NA	1509
Kennedy (Chautauqua)	0	0	0	1	14	1416
Pavilion	0	NA	15	35	39	1296
Penn Yan (Yates)	0	0	1	9	23	1649
Ransomville (Niagara)	0	0	2	1	18	1663
Seneca Castle (Ontario)	0	0	0	1	5	1559
Williamson (Wayne)	0	0	0	1	3	1456

ECB - European Corn Borer
CEW - Corn Earworm
FAW - Fall Armyworm
WBC - Western Bean Cutworm
NA - not available
DD - Degree Day (mod. base 50F) accumulation

Impromptu Meet & Greet – Monday, Aug. 6 at 10 am Eden Valley. See details, page 10. Come meet Ali Nafchi, our precision ag specialist with an ag engineering background. Yes, there will be coffee and doughnuts. – *EB*

It isn't only people that were surprised by the sudden ample moisture in many areas; plants that were used to drier conditions and became waterlogged are now showing some damage in the form of fruit cracking. This isn't just happening on tomatoes – even melons have split their skins in some locations. Good news is that it should be a one-time impact. – *EB*

Leafhoppers are still active. Damage (hopper burn) on potato and some on bush beans. Stay on top of spray schedules to avoid increasing damage to leaves. Decreased photosynthesis will impact yields. – *RH*

COLE CROPS

Worms and flea beetles making a happy home in plantings where the spray schedule spaced out a bit too much. Consider scouting again if you haven't treated in a while. – *EB*

Slugs in cabbage are causing damage. After the rains newly hatched slugs are appearing on the developing heads and getting in between leaves. Active at night, some are staying on the cabbage hiding deeper in between the lower leaf stems. The feeding will require more trimming of heads at harvest time at the very least. Cultivate between rows to bury any plant residue. This can help but application of slug bait will still be needed. – *RH*

CUCURBITS (CUCUMBERS, MELONS, and OTHER VINES)

It would be wise to have **downy mildew** protectant sprays on cucumber plantings. Proactively destroy old, tired plantings to remove unnecessary landing zones for the disease. If you see rectangular yellow marks that stay between veins or checkerboards, please let us know. As **melons** mature it is fairly common to see yellowing along the edge of middle aged leaves. This is just the plant reallocating nutrients, not downy. Regarding pests, I'm seeing thrips in several cuke plantings. – *EB*

DRY BEANS

It is time to start scouting for Western Bean Cutworm (WBC) in dry beans. The peak flight is usually the last week of July to the first week of August. Both the trap reports and scouting corn in fields near dry beans can help determine the risk. Five of the 10 dry bean trap sites being monitored this year were over the scouting threshold of 100 moths, triggering scouting in nearby corn. It is difficult to scout dry beans for egg masses or caterpillars since the caterpillars move to the soil during the daytime. Dry bean pod scouting should begin 7 to 10 days after peak emergence, in those fields that have accumulated over 100-150 moths per trap, near fields with high trap counts, or where WBC has been found in bean pods/seeds in recent years. A spray is recommended if dry bean pod damage is found. In addition, to the WBC traps listed in the sweet corn report, the following dry bean trap sites are being monitored this year (project funded by the NYS Dry Bean Endowment and led by Marion Zuefle, NYS IPM). – *JK*

Dry Bean Location	7.3.18	7.10.18	7.17.18	7.24.18	7.31.18	Cumulative WBC
Attica (Wyoming Co.)	2	4	32	NA	NA	38
Avoca 1 (Steuben Co.)	NA	0	2	37	NA	39
Avoca 2 (Steuben Co.)	NA	2	30	101	NA	133
Caledonia South (Livingston Co.)	0	0	6	30	59	95
Chili (Monroe Co.)	0	1	8	54	81	144
Geneva (Ontario Co.)	0	0	4	24	41	69
Groveland (Livingston Co.)	0	0	5	76	110	191
Riga (Monroe Co.)	0	5	54	146	71	276
Stafford (Genesee Co.)	1	0	8	83	80	172
Wayland (Steuben Co.)	NA	2	3	11	NA	16

Western Bean Cutworm trap counts by date
NA – not available

ONIONS

Thrips is the story of the week with pressure being up in most fields. Most spray programs are coming out of Agri-Mek and/or Minecto Pro (= Agri-Mek + Exirel) in sequence. There are several cases in the onion research scouting program where Agri-Mek performed poorly this past week. Previously, it appeared to have at least held a thrips population when applied on the heels of Movento, in which case the "holding" was a combination of Movento + Agri-Mek. Now, that we have seen Agri-Mek on its own, thrips numbers have increased. All cases of Minecto Pro have indicated that it is working well. Both Agri-Mek and Minecto Pro have a 30 day pre-harvest interval (PHI), so we are closing in on the allowable use timing for these products. Next in sequence are Radiant and Exirel – two consecutive applications before switching to a different mode of action (MOA) in whichever order. Radiant 8-10 fl oz has already gone out in some transplanted fields with stunning knockdown results –

continued on next page

this product is still the hammer! According to this week's results from Brian Nault's insecticide trial in Elba: Exirel is about "half as good" as Radiant (although still very good), with no significant difference between the 13.5 fl oz and 20 fl oz rates, although numerically the higher rate had better control by 1.0 thrips per leaf. This was in a trial where insecticide sprays were initiated at >5 thrips per leaf. Some growers are opting to use Exirel while thrips pressure is still manageable for this product (e.g. 1-2 thrips per leaf) and saving Radiant for anticipated heavier pressure once first direct seeded fields (and transplants in Elba) start to go down. Others are opting to use Radiant first in hopes of crushing the populations to less than 0.5 per leaf in hopes of taking another week off from spraying, and maybe even finishing the season with only 1-2 more insecticide sprays. In Elba, growers are opting to use Radiant in direct seeded onions simultaneously as adjacent transplanted fields are getting Radiant, so that when the transplants go down and the thrips move out from these fields into the direct seeded fields in two weeks, the next insecticide apps in the direct seeded fields will be Exirel. This will avoid two consecutive generations of a moving population of thrips from being exposed to the same MOA. In theory anyway. Nonetheless, this demonstrates excellent teamwork among the Elba onion growers for managing insecticide resistance of thrips, as well as their tremendous respect for preserving the useful longevity of Radiant.

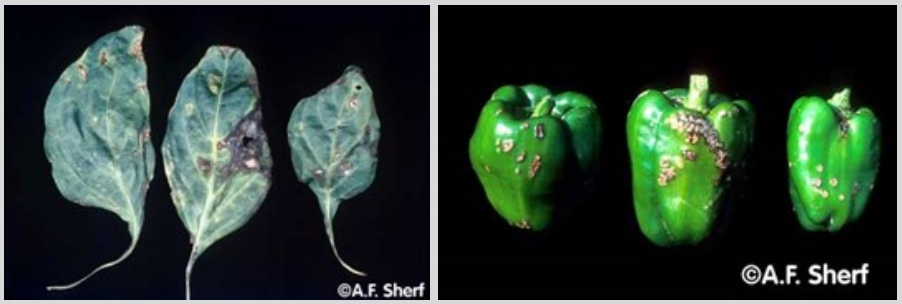
Note to fresh market growers that are hand harvesting:
Avoid topping onions and leaving green neck tissue, especially if there is bacterial rot in the planting. And, especially for bulbs that will be stored for a while before being sold. Bacterial diseases typically infect the leaf/leaves of an onion plant and then move down through the neck and into the corresponding bulb scale (Fig. 1). When the onion is topped green, this creates a fresh wound, which is an open door that allows bacterial diseases to enter right on in. When a plant is topped that has a bacterial infection moving through the neck, bacteria can get onto the knife, which then can infect the next plant when it is topped. Soil can also carry bacterial bodies that can enter into the freshly cut neck when it comes in touch with infested soil. After pulling, you can wait until neck tissue is dry (does not slide between your fingers) before topping. Or, leave 6-8 inches of neck when topping on the green side; this decreases the amount of leaf tissue that needs to be dried down and hopefully will buy you some time from preventing the bacterial infection from reaching the bulb as the neck tissue dries out. If the onion is topped at the bulb, bacterial infection only has a couple of steps to go before it reaches the bulb. Bacterial infections do not move in dry tissue, only green tissue. Sanitizing your knives between cuts may help, although is probably tedious. Ensuring good aeration and temperatures do not exceed 90°F should also help to speed up the drying process. – *CH*

Figure 1. Left: Bacterial pathogens infect an onion leaf, causing it to collapse. Then, the disease moves down through the neck and into the bulb where it eventually infects the corresponding scale **(right)**. Theoretically, proper handling at harvest and post-harvest can prevent some of these infections from reaching the bulb. *Photos: C. Hoepting*

POTATO
Time for Round 2 with Colorado potato beetle. – *EB*

TOMATO, PEPPER, EGGPLANT
Early Blight and Bacterial Speck are now common on tomatoes. Tarnished Plant Bug also common where there are weeds. Starting to see some aphid pressure in peppers. – *EB*

Bacterial leaf spot in tomato and peppers. Rain splash and night time dew has allowed this disease to get started and spread quickly in some areas. Deep penetrating spraying getting good coverage throughout the leaf canopy will help slow the spread. Copper products still provide decent control. – *RH*



Leaf Spot symptoms on pepper leaves and fruit. *Photos: Cornell Vegetable MD Online*

TUNNELS
Do you have moldy tomato leaves?
We need them for research, plus we'll help you get rid of the problem! – *EB*

Upcoming Events

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

Coffee & Donuts Meet & Greet

August 6, 2018 | 10:00 AM - 11:00 AM
Across from W. D. Henry's barn, 7189 Gowanda St Rd, Eden, NY 14057

Come out and meet the CVP's two new specialists! We're both looking to develop research and extension programs and want to hear from you! Ali Nafchi is our new Precision Ag Specialist, and as a huge bonus, he has an engineering background. Elizabeth Buck is the new Fresh Market Specialist for the western-most counties. She has a strong background in weed science and works on crop protection concerns in a wide variety of crops.

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.

Urban Farm Twilight Meeting

August 22, 2018 | 6:00 PM - 8:00 PM
GroundWork Market Garden, 1698 Genesee St, Buffalo, NY

The Cornell Vegetable Program and CCE Erie have been working together on an organic vegetable trial to monitor diseases. During this workshop, the audience will visit the on-farm research plots and explore the results collected from the trial. Participants will be guided by Judson Reid through a hands-on demonstration of how to scout for weeds, insects and diseases on urban farms. Participants will engage in peer-based learning. FREE to attend! Please RSVP to Megan Burley, Farm Business Management Educator, phone (716) 652-5400 x138 or email msb347@cornell.edu.

3rd Annual 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

Research trial results, cultural technique showcases, and effective varieties and treatments for organic and IPM production are the meeting focus. We will highlight current disease issues, their detection & spread based on this season's climate conditions, and management tools available to reduce yield impacts. Sessions will also be offered on pest identification and control options. Regional equipment dealers and industry representatives will be invited to display equipment and new technology. 2.25 DEC recertification credits will be available (categories 1a, 10 and 23). To see the full agenda, visit https://cvp.cce.cornell.edu/event.php?id=979 FREE to attend; pre-registration requested! For more information, contact Elizabeth Buck at 585-406-3419.

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: 7/24 - 7/30/18

Location**	Rainfall (inch)		Temp (°F)	
	Week	Month July	Max	Min
Albion	1.19	2.49	85	56
Baldwinsville	2.81	4.53	89	58
Bergen	0.99	2.13	86	55
Buffalo*	0.77	2.15	86	57
Burt	0.44	1.62	89	55
Ceres	1.58	6.19	82	52
Fairville	0.96	2.44	86	56
Farmington	0.75	1.85	82	56
Gainesville	1.00	3.63	81	52
Geneva	1.15	3.61	83	59
Lodi	NA	NA	87	59
Niagara Falls*	1.22	2.67	88	55
Ovid	1.67	3.81	85	59
Penn Yan*	1.38	3.65	82	60
Phelps	0.82	2.11	85	57
Portland	1.45	4.15	80	60
Rochester*	1.16	3.02	87	57
Silver Creek	1.32	3.83	87	58
Sodus	0.82	NA	85	55
Versailles	NA	NA	85	55
Volney	1.69	2.98	85	57
Williamson	0.59	2.63	80	57

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - July 30, 2018

Location	2018	2017	2016
Albion	1658	1437	1556
Baldwinsville	1641	1539	1575
Bergen	1560	1394	1410
Buffalo	1728	1476	1582
Ceres	1435	1310	1218
Elba	1564	1383	1137
Fairville	1509	1365	1372
Farmington	1553	1364	1418
Gainesville	1300	1369	1143
Geneva	1596	1440	1471
Lodi	1729	1594	1626
Niagara Falls	1778	1623	1699
Ovid	1644	1526	1544
Penn Yan	1662	1541	1573
Phelps	1477	1447	1455
Portland	1638	1519	1471
Rochester	1768	1535	1598
Silver Creek	1535	1478	1425
Sodus	1497	1455	1331
Versailles	1582	1466	1389
Volney	1519	1351	NA
Williamson	1467	1398	1360

* Airport stations

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

Cornell Cooperative Extension
Cornell Vegetable Program

480 North Main Street
Canandaigua, NY 14424

VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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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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Cornell Cooperative Extension
Cornell Vegetable Program

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