

Common rust of sweet corn can cause weakened plants and smaller ears with dehydrated

kernels if infection occurs at early stages.

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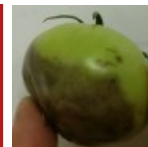
A tiny fly seeks out the growing points of brassicas to lay its eggs. The larvae then cause a series of abnormal growths. That fly is swede midge! Beware!

PAGE 4



Some weeds beginning to flower will drop thousands of seeds per plant. Manage your mature weeds before their seeds cause problems in future years.

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Four new counties in WNY have had positive reports for late blight in tomato:

Cattaraugus, Chautauqua, Niagara, and Ontario counties.

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Cornell University
Cooperative Extension
Cornell Vegetable Program

Photo: Angela Parr

Common Rust on Sweet Corn

Darcy Telenko, CCE Cornell Vegetable Program

Common rust of sweet corn has been found in several fields in western NY. It is caused by *Puccinia sorghi*. This rust causes oval to elongated cinnamon-brown pustules scatters over the surface of the leaves (see photos). Scouting and threshold guidelines are available to determine when a spray is necessary to reduce the possibility of weakened plants and smaller ears with dehydrated kernels when infection occurs at early stages.

Begin scouting at early whorl stage and continue to the tassel stage. Sample 120 plants. Record number of leaves with any rust pustules. For ten plants count the number of leaves per plant and average to determine average number of leaves per plant for the field.

$$\text{\% of infected leaves} = \frac{\text{Total \# of leaves with rust} \times 100}{\text{Average \# of leaves per plant} \times 100}$$



A sweet corn leaf with many common rust lesions (top) and a 10x view of the pustules showing the profuse spore production (bottom).
Photo: D. Telenko, 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.

We're interested in your comments. Contact us at:
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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 23, 2017.

Correction to High Tunnel Pest Update in 8/9/17 VegEdge

Judson Reid, CCE Cornell Vegetable Program



Last week's VegEdge included photos of Tobacco Hornworm (not Tomato Hornworm) and Conspicuous Stink Bug (not BMSB). Control recommendations remain the same.


Thanks to Cornell University Entomologist Dan Gilrein for spotting the errors. ●

Spray when 80% of the leaves are infected. It is recommended that fungicide applications be applied prior to tassel.

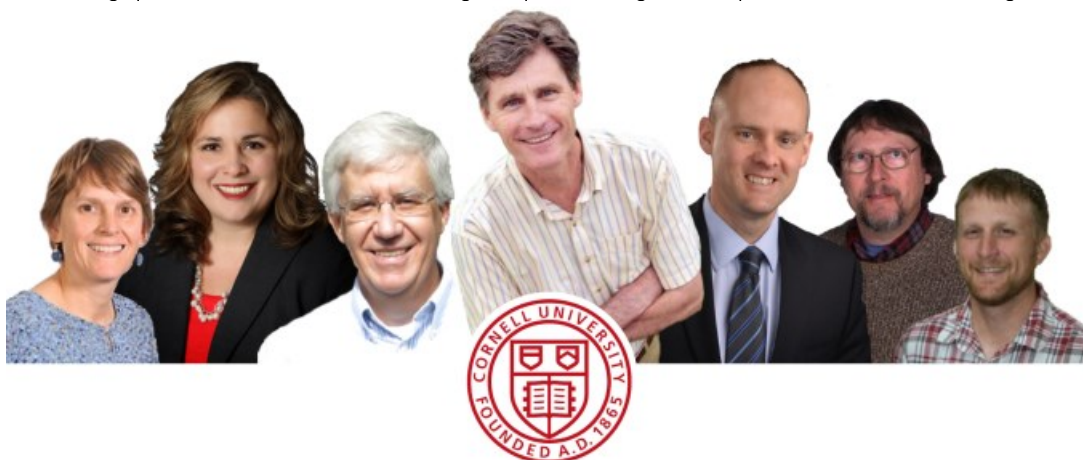
Resistant varieties are available and should be planted when possible. Sequential plantings can result in increased concentrations of fungal sports as the populations build up over time and move into the later plantings.

Fungicides Labeled for Use on Sweet Corn for Common Rust

Trade name	Common name	FRAC	PHI (days)	REI (hrs)	Comments
Quadris F or OLP ^x	azoxystrobin	11	7	4	Do not apply more than two sequential applications before alternating with a different FRAC #. Do not allow drift onto apple trees or use in same sprayer as one used in apples.
Quilt or OLP Quilt Xcel	azoxystrobin + propiconazole	11 + 3	14	12	Alternate with Tilt or another product with different FRAC #. Do not spray where drift may reach apple trees
Bravo or OLP	chlorothalonil	M5	14	12	Fresh market corn only. Not for use in processing sweet corn. WPS provisions apply for 6.5 days due to eye irritant.
Priaxor	fluxapyroxad + propiconazole	7 + 11	7	12	Do not apply more than twice per season before a, then alternating with a different FRAC #.
Dithan DF Rainshield or OLP	mancozeb	M3	7	24	Some food processors discourage the use of this product.
Catamaran	potassium phosphite + chlorothalonil	33 + M3	14	12	Application can be by chemigation or air. Maximum 30 pt/A/season.
ProfiMax EC Tilt or OLP	propiconazole	3	14	12	Apply when rust lesions first appear.
Stratego YLD	prothioconazole + trifloxystrobin	3 + 11	0	12	No aerial application in NY. Use lowest rated of NIS to enhance disease control. Do not apply more than 20 fl oz/A/season and alternate with at least 1 application of a non-group 11 fungicide.
Headline AMP	pyraclostrobin + metconazole	11 + 3	7	12	No aerial application within 100 feet of an aquatic habitat, in NYS. Limit to 2 sequential applications before alternating to non-group 11 fungicide.
Headline	pyraclostrobin	11	7	12	No aerial application within 100 feet of an aquatic habitat, in NYS. Limit to 2 sequential applications before alternating to non-group 11 fungicide.

^x OLP = Other Labelled Product. 

Join Cornell University faculty and Cooperative Extension Specialists for an evening of touring Cornell Vegetable Program research sites and answering questions on sustainable and organic pest management options for fresh market vegetable growers.



SUSTAINABLE AND ORGANIC VEGETABLE PEST MANAGEMENT FIELD DAY

Tuesday, August 29, 2017 | 3:00 - 9:00 PM

**Cornell Lake Erie Research and Extension Laboratory
6592 West Main Rd, Portland, NY 14769**

\$25 Cornell Vegetable Program enrollees / \$35 all others, includes dinner and handouts.

Register by August 23 online at cvp.cce.cornell.edu or call 716-652-5400. Dinner cannot be guaranteed unless pre-registered. 3.0 DEC and CCA credits will be available. Attend the entire meeting to receive credits.



How to Identify and Control Swede Midge in Cole Crops

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. Only plants belonging to the brassica families are hosts to swede midge, including 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. It's possible that a virtually undetectable SM population this spring has exploded to cause noticeable damage by now. **Unfortunately, SM damage is often misdiagnosed and farms experience economical crop losses before they realize that swede midge is the cause.**

DIAGNOSING A SWEDE MIDGE INFESTATION

Swede midge damage:

- **Leaf puckering and crinkling** type of damage is caused by earlier SM feeding that the plant is growing out of, so you tend to see it on middle-aged leaves (Fig. 1).
- **Disfigured or blind heads (no growing point)** are also readily recognizable symptoms of SM damage (Fig. 2). In crops such as broccoli or cauliflower where the head portion of the plant is marketed, this type of injury has the most economical impact.
- Sometimes when the growing point is damaged by SM when the plant is fairly young, it results in **multiple side shoots/heads (as with cabbage)** (Fig. 3).
- Unfortunately, brassicas are naturally inclined to morph when injured, so swede midge is easily confused with other causes that cause similar types of injury. **The key is to find brown corky scarring in association with these types of injuries** (Fig. 2 right).

Another key is to find the larvae.

Larvae can be very tricky to find, because often the larvae are no longer present in the growing points that have the best injury symptoms. After feeding for about one month, SM larvae drop to the soil to pupate before they emerge as adults and begin another life cycle. Larvae will be feeding in the growing tips of the plant; look for swollen petioles with minor

twisting, puckering and/or scarring (Fig. 4). Pluck the suspicious growing tip from the plant and begin to peel each leaf off one by one. When SM larvae are feeding, the growing tip is often moist. Larvae are often found in the leaf axils (Fig. 5). SM larvae are tiny and only 3-4 mm in size at maturity. They are nondescript (no mouthparts, legs, tail pipes, wings, etc.) and initially translucent/whitish, but become increasingly more yellow in color as they mature and get ready to drop to the soil to pupate. You may need a hand lens to see them.

Check the broccoli and Red Russian kale for SM first

In our studies, we have found that broccoli and Red Russian kale tend to be infested with SM to a greater extent than other brassica crops. Alternatively, Asian brassicas such as Chinese cabbage, winterbor kale and turnips/radish tend to have much less SM infestation and damage.

Check out our **Better Know a Pest video** for scouting tips for identifying swede midge: <https://cvp.cce.cornell.edu/submission.php?id=458&crumb=pests|pests>



Figure 1. Leaf puckering and crinkling caused by swede midge in broccoli (left) and cabbage (right). Photos: swede midge information for the U.S. website. Photos: C. Hoepting, CVP



Figure 2. Swede midge feeding damage on growing tip of broccoli can cause deformed (left) or blind (right) heads. Such damage is associated with brown corky scarring. Photos: C. Hoepting



Figure 3. Swede midge feeding on growing tips of young plants can result in multiple shoots (left in broccoli) or heads (left in cabbage). Photos: J. Kikkert, CVP

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Figure 4. Growing tip suspect to contain swede midge larvae; look for swollen petioles, slight twisting and/or puckering and brown scarring.
Photo: C. Hoepting, CVP



Figure 5. When leaves are peeled away from a growing tip, swede midge larvae are often found in the leaf axils. They are only 3-4 mm in size.
Photo: C. Hoepting, CVP

WHAT TO DO IF YOU HAVE SWEDE MIDGE?

The most important management strategy for controlling SM is to disrupt its life cycle. This can be done in a number of ways. First, know that where you have an infested brassica crop in the fall is where the SM are going to emerge the following spring. Thus, you want to break up their life cycle by not providing the overwintering generation with a suitable host first thing in the spring. **Far and widely spaced crop rotations work best.** Second, a **SM-infested brassica crop should be destroyed as soon as possible after harvest** is complete. This will prevent further buildup of the SM population, because otherwise it will thrive on all the secondary side shoots that are produced once the main harvest is completed.

Small-scale organic growers are most at risk for economic losses from SM.

First, organic vegetable farms tend to have a relatively small land base, sometimes less than 2 acres, which is simply not enough area for crop rotation to be effective. Second, conventional production of Cole crops allows for the use of several insecticides that are very effective in keeping SM below economically damaging levels. Unfortunately, none of the OMRI-listed insecticides that have been tested are effective against SM. Diversified vegetable farms also have multiple plantings of brassicas in close proximity from early spring to late fall and constantly have a suitable host for SM to flourish.

Insect exclusion netting for control of swede midge.

On-farm research trials conducted by CVP over the past couple of years have demonstrated **that insect exclusion netting may provide 100% control of SM on heavily infested farms** (Fig. 6). However, it is expensive and labor-intensive to set up. It costs about \$200 per 100 ft, plus an additional ~\$200 per 100 ft in electrical conduit hoops, stakes and clamps if netting is set up over 4 ft x 4 ft hoops, which may be reused. This does not include cost of labor for assembly. Netting can sometimes be re-used. Consequently, it tends to only be a fit on relatively small farms (due to the labor intensity of set up) and in broccoli (susceptible high value crop with low tolerance for SM damage).

- Insect exclusion netting only works if it is placed on ground that has not been cropped to Cole crops in at least 2 years, the longer the better. Otherwise, SM may emerge under the netting and cause a lot of damage.
- Insect exclusion netting should be secured to the ground to not let outside SM enter into the netting. This may be accomplished with rocks/stones, soil or sod.



Figure 6. Insect exclusion netting (ProtekNet, 25 gram, 14' wide, Dubois Agrinovation) set up over metal electrical conduit hoops 4 ft x 4 ft over a 3-ft bed. Sides secured with rocks. In several on-farm trials, insect exclusion netting has demonstrated 100% control of swede midge. Photos: C. Hoepting, CVP continued on page 6

- Use of mulch underneath the netting provides weed control, so that netting does not have to be disrupted until harvest. Plastic, straw and landscape fabric have all worked in CVP studies.
- Compared to open air, temperature tends to be lower and relative humidity higher underneath the netting, and crops tend to grow to larger and at an accelerated rate. However, sometimes, netting in combination with mulch can create heat stress. Be aware that the microclimate underneath netting may be different than open air and plan accordingly.
- Insect exclusion netting may also exclude flea beetles, worm pests and aphids resulting in very clean crops. Alternatively, it is important to make sure that transplants are not infested with pests before they are placed under netting as they can escalate quickly.

Insecticides.

Fortunately, SM is relatively easy to manage with conventional insecticides, especially those with systemic or trans-laminar activity such as products belonging to IRAC classes 4A, 23 and 28. In New York, seven products belonging to five different mode of actions (MOA)

are available (Table 1). Admire Pro may be used as a soil treatment at planting to protect transplants from SM for 4-5 weeks. Then, foliar insecticides may be used to control SM for the remainder of the season. It is important to rotate MOA and make no more than two consecutive applications of the same product and ideally only use each MOA once during the growing season. For example, instead of following Admire Pro with Assail, rotate to a different MOA such as Warrior. Fortunately, these insecticides control several other insect pests in Cole crops (see labels for details).

Table 1. Insecticides labeled in New York for conventional control of swede midge.

Trade Name	Active Ingredient	IRAC MOA ¹	Label Type ²	Application
Admire Pro	imidacloprid	4A - neonicotinoid	NY 2(ee)	soil
Provado 1.6	imidacloprid	4A - neonicotinoid	NY 2(ee)	foliar
Assail 70WP/30SG	acetamiprid	4A - neonicotinoid	full	foliar
Lorsban 75WG	chlorpyrifos	1B - organophosphate	NY 2(ee)	foliar
Warrior II with Zeon Technology	Lambda-cyhalothrin	3A - pyrethroids	NY 2(ee)	foliar
Movento	spirotetramat	23 – inhibitors of acetyl CoA carboxylase	full	foliar
Exirel	Cyantraniliprole ³	28 - diamide	NY 2 (ee)	foliar

¹IRAC: Insecticide Resistance Action Committee. **MOA:** Mode of Action.

²2(ee) Special Recommendation labels add another pest to a crop that is already labeled. @ (ee) labels must be in the possession of the user. All New York labels are available at the NYS DEC pesticide products portal: <http://www.dec.ny.gov/nyspad/products>

³Other insecticides with the active ingredient, cyantraniliprole include Coragen, Verimark and Voliam Xpress/Beseige. None of these products are labeled for swede midge, but may result in swede midge control when used for control of other labeled pests.

Recently, the Cornell Vegetable Program has been studying swede midge population dynamics as related to management practices on small-scale organic farms.

Much more information on the results of this project and consequent new management strategies will become available over the next year.

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/>. ●

When the Time Comes to Hand Pull Weeds

from the USDA ARS Integrated Weed Management Resource Center

Prolific weeds like horseweed (maretail) and pigweeds are beginning to flower and will drop hundreds of thousands of seeds per plant in the coming weeks. Those seeds will stay in the soil and cause increased weed problems in future years. At this point, what can you do?

While the best time to manage these prolific weeds is prior to planting, some stubborn plants can remain in and around fields through the late-season. Potential reasons for this include 1) ineffective herbicide control, 2) herbicide resistance, 3) small stands persisting on field edges, roads, and by buildings, 4) plants that are cut off during small grain harvest that recover,



branch out, and push on to produce seeds.

At this point in the season, a grower's first reaction to escaped weeds may be to reach for herbicides. However, growers cannot simply rely on herbicides to control large plants (over 6 inches) which are typically able to sur-

vive or outgrow herbicide damage. This is where the integration of manual removal may come into play to avoid spreading thousands or millions of seeds.

Options for managing mature weeds: Growers aiming to eliminate individual mature horseweed or pigweeds (like

continued on next page

Palmer amaranth and waterhemp) have several options, all with pros and cons that the grower must weigh.

First, they may be manually pulled using a hoe, weed hook, or by hand. Pulled plants should be moved out of the field to prevent regrowth and seed drop. While certainly time-consuming, physically removing the plants is the most definite way to ensure they cannot contribute to the weed seed bank, and this can save lots of money in the long run.

A second option for late-season management is to mow the area of the field that contains a severe infestation. If the weeds have not yet produced seeds, this should substantially decrease the quantity of dropped seeds. The grower would need to weigh the cost of terminating the crop where the

infestation exists, but should keep in mind that preventing this weed infestation now can save a substantial amount of money on weed control next year.

Third, when faced with a severe mature infestation that has produced seeds, a grower may choose to not only mow the affected section of the field, but also burn the mowed weeds in piles or windrows. Burning this weedy plant matter at sufficiently high temperatures kills the weed seeds. Temperatures of 800-900 degrees F are required to kill most weed seeds. In order to achieve this temperature range, it is important to form the plant matter in windrows or piles and then wait for it to dry, in order to create the density and dryness needed.

Windrows may also be formed at harvest-time and then burned – this tech-

nique is referred to as “narrow wind-row burning.” It is becoming widely adopted in Australia, and is being tested by Virginia Tech and the University of Arkansas for use in US cropping systems.

While late-season control measures are labor-intensive, eliminating escaped weeds is an important measure for preventing seed dispersal and new infestations especially in no-till fields. Just a few plants can produce enough to infest an entire field in a couple of seasons. Manual removal this year could save significant money, time, and labor in future years.

Article originally posted August 11, 2017 at <http://integratedweedmanagement.org/index.php/2017/08/11/when-the-time-comes-to-hand-pull-weeds/> ●

WNY Sweet Corn Trap Network Report, 8/15/17

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

Only nineteen sites reporting this week. Unfortunately, only one site from eastern NY was able to report this week. Of the nineteen sites, eight sites trapped European corn borer (ECB)-E with the high count of 97 coming from Hurley in Ulster County again. ECB-Z was trapped at six sites. Corn earworm (CEW) was trapped at seven sites, with six sites high enough to be on a 4, 5, or 6 day spray schedule (see chart below). Fall armyworm (FAW) was trapped at eight sites and Western Bean cutworm (WBC) was trapped at seventeen sites this week.

The average degree days for the trap sites is 1611 base 50 (starting May 1), so the majority of WBC moths should have emerged according to the University of Nebraska model. Looking at the graph below, overall WBC trap catches are down this week as compared to last week, but some individu-

al sites are still showing high trap catches. Where CEW numbers are not high enough to determine the spray schedule, scout for ECB, FAW and WBC egg masses and larvae in late whorl and tassel-emergence stage fields.

WNY Pheromone Trap Catches: August 15, 2017

Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD to Date
Baldwinsville (Onondaga)	4	0	0	3	79	1657
Batavia (Genesee)	NA	NA	NA	NA	NA	NA
Bellona (Yates)	0	4	1	7	79	NA
Eden (Erie)	0	0	0	0	68	1585
Farmersville (Cattaraugus)	NA	NA	NA	NA	NA	NA
Farmington (Ontario)	1	6	0	0	3	1531
Hamlin (Monroe)	4	0	2	3	45	1600
LeRoy (Genesee)	1	0	3	4	38	1584
Pavilion	0	0	0	5	5	NA
Penn Yan (Yates)	0	0	2	15	10	1707
Ransomville (Niagara)	4	1	4	0	7	1688
Seneca Castle (Ontario)	3	3	0	0	9	1609
Williamson (Wayne)	NA	NA	NA	NA	NA	1582

ECB - European Corn Borer

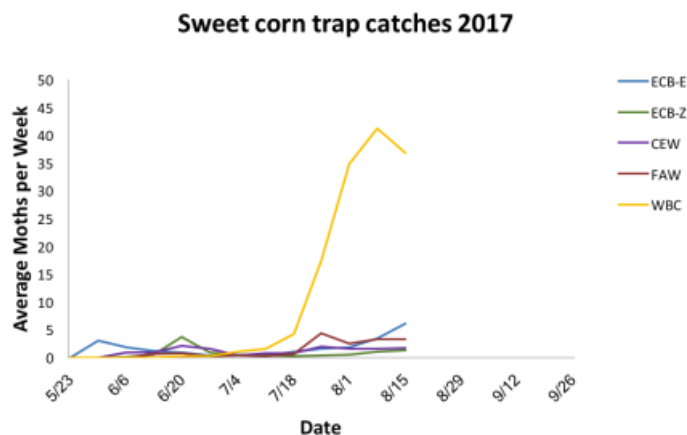
CEW - Corn Earworm

FAW - Fall Armyworm

WBC - Western Bean Cutworm

NA - not available

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



Average sweet corn trap catches for all reporting sites from 5/23/17 - 8/15/17

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 ●

CROP INSIGHTS

COLE CROPS

Alternaria leaf spot is active in Cole crops, this disease likes to chase necrotic or injured tissues (see photo). White mold, *Sclerotinia sclerotiorum*, is also active in areas with known soilborne issues we've seen small lesions starting on leaf tissue to complete loss of cabbage heads. – DT

CUCURBITS

Downy mildew continues to spread and now can be found on cucumbers, watermelons and cantaloupes. Lesions on cucumbers are very rectangular, with dark sporulation on the lower leaf surface. We see slightly less sporulation on watermelons and cantaloupes, with lesions somewhat more circular. It is important to be able to distinguish these lesions from angular leaf spot, as control measures are very different. Angular leaf spot lesions are tan-to-white and of bacterial origin. This means copper materials are the most effective remediation, whereas downy mildew requires oomycete specific sprays listed in previous VegEdge. Many growers ask if they should be concerned about downy mildew on pumpkins and winter squash. The quick answer is yes. Although not as aggressive on these crops as cucumbers, there will be increasing inoculum from here until maturity of these crops. Powdery mildew is also quite active. – JR



Alternaria on Brussel sprouts – lesions on lower leaf and stem and 10x view of the upper and lower surface of the leaf lesion with diagnostic concentric circles. Photo: D. Telenko, CVP



Downy mildew on cucumber in Yates County (top left); downy mildew on watermelon in Chautauqua County (top right); downy mildew on cantaloupe (bottom left); angular leaf spot on cantaloupe in Seneca County (bottom right). It's important to be able to distinguish downy mildew lesions from angular leaf spot lesions as control measures are very different. Photos: J. Reid, CVP

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DRY BEANS

Western bean cutworm (WBC) moths have reached the 100 cumulative moths/trap threshold at several of the 13 sites that we are monitoring this year. The trap catches will be updated in the Sweet Corn Trap Network blog on-line as numbers are reported <http://sweetcorn.nysipm.cornell.edu>.

Peak flight occurred between August 1st and 8th for most of the sites. **All dry bean growers should begin scouting pods for WBC feeding about 10 days after peak flight regardless of cumulative trap catch**, and should continue to scout for three weeks, especially if damage has been seen in recent years.

Check 10 random spots in a field, 5 plants per spot. Inspect all the pods on the plant looking for holes. Surface feeding can be caused by other insects. WBC will mine directly into the pod and will often feed on the seed inside. European corn borer will also feed inside the pod and would most likely still be present. If there is damage going directly into the pod and seed but no larva present, it is quite possibly WBC. During the day WBC larva are not actively feeding in the pod, instead they drop to the soil and will remain there until night. Fresh damage will be green, not brown. If damage is seen then the field should be sprayed once with a pyrethroid insecticide (Entrust in organic fields).



Feeding damage from larger WBC larvae. Photo: T. Baute, OMAFRA

ONIONS

The crop is in the home stretch now with most fields in various stages of lodging and in need of only 1-2 more pesticide sprays before sprouting inhibitor is applied. Growers have done a tremendous job this season to preserve the useful life of fungicides by following resistance management best practices. As you finish out your spray programs, remember that there is a maximum seasonal use rate of three applications of Luna Tranquility at 16 fl oz and of Merivon at 9 to 11 fl oz. Also, Viathon has a maximum of 6 pts, which would be only 2 (2.5 - 3 pt rate) to 3 (2 pt rate) applications per season. We continue to see more cases of Purple Blotch (PB) lesions (see last week's issue of Veg Edge for more information); its reoccurrence curious after being absent for the past few years. Hopefully, we may glean some information from this year's scouting data and research trials as to the efficacy of the new *Stemphylium* leaf blight (SLB) fungicides on PB.

Downy mildew (DM) has been confirmed in muck grown onions in Wayne Co. Under the right conditions, the DM-SLB complex can rapidly defoliate an onion crop. With there still being a lot of susceptible green foliage, many growers are doubling up on DM fungicides; for example, mancozeb in addition to an SLB fungicide that also has activity against DM such as Merivon, Quadris Top and Viathon. Ridomil Gold (FRAC 4) has the best activity against DM of the several fungicides labeled for DM. It has curative/kick-back activity beyond that of mancozeb, which has strictly preventative/contact activity. Ridomil Gold may help to control DM infections that you can't see. Typically, once DM is first detected, there are already several new infections in development that will appear in a few days. Growers in high-risk conditions for DM, e.g. either have DM or are in close proximity to DM infested field, are adding Ridomil Gold Bravo to tankmix, which still may be used in combination with mancozeb for added protection. Ridomil Gold Bravo label allows for maximum of three applications per season. See July 26 issue of VegEdge for info on DM diagnosis.

Onion thrips remain low in most fields with growers across the region using record-breaking low numbers of insecticide applications this growing season. However, some fields are approaching the spray threshold of 1.0 onion thrips per leaf. Remember that Agri-Mek and Minecto Pro (pre-mix of Agri-Mek + Exirel) have a 30 day PHI. If you are closer to harvest than 30 days, your options include Exirel, Lannate, Warrior or Radiant. If you are planning to use Exirel or Lannate ± Warrior, these products should be applied when thrips pressure is less than 2.0 per leaf, while Radiant can handle a higher threshold. If for example, your thrips pressure is 0.8 per leaf this week, then you could either spray Exirel or Lannate ± Warrior this week, or wait another week and see where the population is. You may not need another spray after all, and if it is greater than 2.0 per leaf, you can apply Radiant.

SWEET CORN

Sweet corn harvest is in full swing. Continue to protect later plantings as we are still catching corn ear worm, European corn borer, and western bean cutworm moths. We have also started to see some severe outbreaks of common rust – see article for scouting and threshold information on the front cover. – DT

TOMATO

Diseases continue to spread in tomato. There have been numerous late blight reports around the region (see late blight report). Early blight, Septoria and bacterial diseases continue to spread. Powdery Mildew of tomatoes was observed on a field planting this week in the Finger Lakes. This disease is caused by several fungi, but in this case likely *Oidium lycopersici*. This appears similar to the powdery mildew of cucurbits but is a different fungus and does not cross-infect. The disease can be kept under control with Sty-let Oil (available in organic or non-organic versions) or sulfur products such as Microthiol Disperse. Conventional fungicides with Powdery Mildew on their label include Inspire Super (difenoconazole+cyprodinil OD PHI), Switch (cyprodinil+fludioxonil OD PHI) and Revus Top (difenoconazole+mandipropamid). – JR



Powdery mildew of tomato in Yates County. Photo: J. Reid, CVP

UPCOMING EVENTS

view all Cornell Vegetable Program upcoming events at cvp.cce.cornell.edu

WNY Soil Health Alliance Summer Field Day

August 22, 2017 | 8:30 AM - 3:30 PM

Orleans County 4-H Fairgrounds Trolley Bldg, 12690 Rt 31, Albion NY 14411



Two guest speakers will kick off this exciting event: Wendy Taheri, a nationally recognized expert in Mycorrhizal Fungi, and John Wallace, soon to be an Assistant Professor at Cornell with extensive experience in drilled interseedings of corn. In the afternoon, attendees will observe 8 cover crop trials and explore a soil pit, with on-site discussion led by Wendy Taheri, TerraNimbus LLC. There will also be cover crop interseeder and herbicide demonstrations. The full agenda and information on how to register is available at <http://www.wnysoilhealth.com/events/>. \$40/pre-registered participant; \$50/walk-in. Lunch included.

Sustainable and Organic Vegetable Pest Management Field Day

August 29, 2017 | 3:00 PM - 9:00 PM

Cornell Lake Erie Research and Extension Laboratory, 6592 West Main Rd, Portland, NY 14769



Join Cornell Vegetable Program Specialists (Telenko, Hadad, Reid) and Cornell University faculty (Wallace, Smart, Reiners, Bjorkman) for an evening of touring Cornell Vegetable Program research sites and answering questions on sustainable and organic pest management options for fresh market vegetable growers. Information will be provided for both conventional and organic growers at all levels of expertise. Network for Environmental and Weather Application (NEWA) will be on-hand to teach growers how they can use the forecasting models for pest management in various crops. Sponsoring industry representatives will have the opportunity to meet with growers to comment on their products. The full agenda is available at <http://tinyurl.com/2017VegFieldDay>. 3.0 DEC and CCA credits will be available for portions of the day.

2017 Vegetable Pest and Cultural Management Field Meeting for Auction Growers

August 30, 2017 | 6:00 PM

Orleans County – Michael Zimmerman farm, 1272 Morrison Rd, Lyndonville, NY 14098



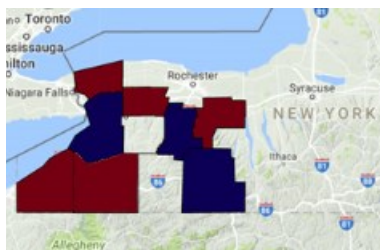
This course will demonstrate pest management in fresh market vegetables in both field and greenhouse (high tunnel) vegetables; primarily for those growing for wholesale auction. A hands-on demonstration of weed, insect and disease identification in vegetables including management options such as inter-row 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 associates Telenko and Hadad will instruct participants and facilitate peer-based learning. Details on each topic will focus on field observations at the farm.

This event is FREE! DEC recertification credits will be available. For more info, contact Judson Reid, 585-313-8912, jer11@cornell.edu.

New Late Blight Reports in Cattaraugus, Chautauqua, Niagara, and Ontario Counties in New York

Darcy Telenko and John Gibbons, CCE Cornell Vegetable Program

Four counties in western NY have had positive reports for late blight in tomato. The isolate analysis are still in progress, but so far, all isolates have been US 23. **All of Western NY is still at risk for Late Blight Infection.** 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. **All sites, except Geneva, will go over the 30 BU threshold based on 3-day forecast. This triggers the recommendation for an addition fungicide application this week.** Remember to rotate fungicide FRAC groups and use contact fungicides in your program to minimize the chances of fungicides resistance.



Current observations of late blight – red counties have had a positive report in the last 7 days. Blue counties: the report is >7 days old. Source <https://usablight.org/map>.

Late Blight Risk Chart, 8/15/17

Location ¹	Blight Units ¹ 8/09- 8/15	Blight Units ² 8/16- 8/18	Location ¹	Blight Units ¹ 8/09- 8/15	Blight Units ² 8/16- 8/18
Albion	49	20	Lodi	NA	NA
Baldwinsville	19	21	Lyndonville	18	21
Bergen	11	21	Medina	26	21
Buffalo	37	19	Niagara Falls	17	14
Ceres	38	21	Penn Yan	24	21
Elba	NA	NA	Rochester	34	20
Fairville	34	20	Sodus	30	19
Farmington	35	19	Versailles	29	21
Gainesville	NA	NA	Volney	32	19
Geneva	5	20	Wellsville	32	21
Kendall	12	18	Williamson	12	19
Knowlesville	NA	NA	Wolcott	24	20

¹ Past week Simcast Blight Units (BU)

² Three day predicted Simcast Blight Units (BUs) ●

If you are in a county where late blight has not been reported and you suspect you have it, let us know so we can track it disease movement. **Take a sample for isolate identification.** Contact CCE Cornell Vegetable Program Specialists for assistance: https://cvp.cce.cornell.edu/contact_information.php

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 8/08 – 8/14/17

Location	Rainfall (inch)		Temp (°F)	
	Week	Month August	Max	Min
Albion	0.46	3.00	86	59
Appleton, North	0.01	0.83	82	59
Baldwinsville	0.03	1.03	83	56
Buffalo*	0.70	2.27	83	60
Ceres	0.00	2.30	79	47
Elba	NA	NA	NA	NA
Fairville	0.44	1.28	82	57
Farmington	NA	NA	82	56
Gainesville	NA	NA	NA	NA
Geneva	0.05	1.97	80	58
Lodi	0.00	0.38	84	56
Niagara Falls*	0.32	2.08	84	61
Ovid	NA	NA	83	55
Penn Yan*	0.00	0.65	82	59
Phelps	0.03	1.84	82	57
Portland	0.03	1.30	81	58
Rochester*	0.00	1.36	82	59
Silver Creek	NA	NA	83	56
Sodus	0.24	0.45	83	60
Versailles	NA	NA	82	55
Volney	0.43	1.91	82	55
Williamson	0.64	1.69	84	59

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 – August 14, 2017

Location	2017	2016	2015
Albion	1755	1950	1793
Appleton, North	1596	1714	1543
Baldwinsville	1786	1913	1800
Buffalo	1779	1988	1841
Ceres	1559	1544	1584
Elba	NA	NA	NA
Fairville	1699	1748	NA
Farmington	1651	1802	1712
Gainesville	NA	NA	NA
Geneva	1735	1856	1751
Lodi	1908	2041	1911
Niagara Falls	1959	2118	1712
Ovid	1836	1941	1858
Penn Yan	1847	1973	1861
Phelps	1759	1851	1771
Portland	1811	1859	1728
Rochester	1844	2014	1899
Silver Creek	1771	1812	1691
Sodus	1760	1843	1688
Versailles	1730	1756	1687
Volney	1649	NA	NA
Williamson	1711	1807	1627

* Airport stations

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

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

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