Cornell Cooperative Extension | Cornell Vegetable Program

VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Volume 19 • Issue 13 • July 5, 2023

'Tis the Season for Squash Vine Borer

Robert Hadad, Cornell Cooperative Extension, Cornell Vegetable Program

Over the past few seasons, I have been called about squash vine borers (SVB) showing up and wreaking havoc in zucchini and summer squash and later in winter squash and pumpkins. The cases were spotty and small in number. It seemed like once SVB were there one season, they were there every season after. The cases have started to increase this season, and this could mean a lot more trouble for many growers.

In New England, SVB is a major problem. Several states have set up a trapping network to catch adult moths in order to put a warning out to vine crop growers ahead of time. Female moths fly early in the morning staying low to the ground. They are kind of camouflaged resembling a black and orange wasp, which they are often mistaken for. Female SVB lay eggs on the vines close to the ground where the stems are thick. Once the eggs hatch, the larvae immediately start feeding and burrow into the stems.

Squash Vine Borer Damage

One of the early signs of infestation is the plant "saw dust" looking frass that is in little piles by the holes in the stems. Once inside of the stem, the larvae eat their way making tunnels that reduce water and nutrient uptake by the plant. On sunny hot days, vines begin to wilt. They might revive overnight but soon, the wilting becomes permanent as that infested vine dies.

Management

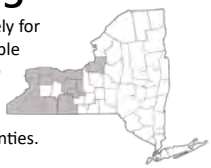
Management of the pest requires vigilance and the ability to spray materials at the base of the plants that are usually covered with big leaves. There are a number of conventional products available that might be on your shelf. Check the label for listing of this pest. With a 2(ee) recommendation printed out, Entrust and Agree WG is also available.


Adult squash vine borer. When flying, the moth is often mistaken for a wasp. *Photo: Alan Eaton, University of New Hampshire.*


Squash vine borer larva, frass, and damage to summer squash stem. *Photo: UMass Extension*

continued on page 3

About VegEdge



VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties.

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

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

Contributing Writers
Elizabeth Buck
Robert Hadad
Christy Hoepting
Margie Lund
Julie Kikkert
Judson Reid

Publishing Specialist/Distribution/Sponsors
Angela Ochterski

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

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

Contents

The next issue of VegEdge newsletter will be produced on July 12, 2023.

Accumulated Growing Degree Days, 7/3/23

Julie Kikkert, CCE Cornell Vegetable Program

Accumulated Growing Degree Days (AGDD)
Base 50°F: April 1 - July 3, 2023

Location**	2023	2022	2021
Albion	881	999	1022
Appleton	822	931	948
Arkport	727	828	821
Bergen	820	957	950
Brocton	845	974	980
Buffalo*	910	971	1040
Ceres	674	789	828
Elba	794	899	907
Fairville	823	922	915
Farmington	840	936	958
Fulton*	847	900	915
Geneva	893	967	988
Hammondsport	798	924	925
Hanover	809	960	960
Jamestown	739	827	846
Lodi	933	1069	877
Lyndonville	829	853	967
Niagara Falls*	950	1019	989
Penn Yan*	881	999	1039
Rochester*	882	980	991
Romulus	913	988	1008
Sodus	924	1013	1016
Versailles	804	NA	NA
Waterport	827	913	929
Williamson	776	902	900

* Airport stations
** For other locations: http://newa.cornell.edu

continued from page 1

Kaolin clay can have some effect. The key is getting the material down onto the stems near the ground and repeat as label directions indicate. Kaolin clay will have to have more applications if there are rain events. Row cover or insect netting are also options. ●

Sample Onion Fungicide Spray Program, 2023

A Balancing Act Between Disease Control and Managing Fungicide Resistance

Christy Hoepting, Cornell Cooperative Extension, Cornell Vegetable Program

This article is complementary to:

- An article in last week's issue of VegEdge (June 28) which summarized fungicide field performance and laboratory testing for fungicide resistance for Stemphylium leaf blight (SLB).
- 2023 Cornell Onion Fungicide "Cheat Sheet" for Control of Leaf Diseases in New York, which is available online at the Cornell Vegetable Program website: https://cvp.cce.cornell.edu/submission.php?id=904&crumb=crops|crops|onions|crop*20

Top-performing Treatments in 2022 Field Trials for SLB Control

In 2022 on-farm onion fungicide trials, the top performing treatments for reducing SLB target spots, SLB spore colonization of necrotic leaf tissue and preventing leaf dieback were:

1. **Double FRAC 3-product treatments that included Tilt (3a) and/or Viathon (3c + P07) such as Viathon + Tilt/Inspire Super (FRAC 3b + 9)**
2. **Miravis Prime (FRAC 7 + 12) + Oso 6.5 fl oz (FRAC 19)/Rovral (FRAC 2)**

It is very good news that there are two types of treatments that have different FRAC groups that may be used in rotation in a spray program to provide acceptable control of SLB.

Botrytis Leaf Blight (BLB)

Not a lot of updates were made to the relative performance of fungicides for control BLB halo lesions and BLB necrotic spots in 2023 Cornell onion fungicide "cheat sheet". Generally,

- **BLB halo lesions:**
  - **Best** – Omega.
  - **Very Good** – Bravo, Manzate Max (a.i. mancozeb) up to 3.0 BLB halos/leaf, and FRAC 7 fungicides.
  - **No activity** – FRAC 3, P07 and 19.
  - **Variable activity** – Rovral (FRAC 2) and Scala (FRAC 9).
- **BLB necrotic spots:**
  - **Best** – double FRAC 3-product tank mixes, especially Viathon + Tilt.
  - **Good-Very Good** – Bravo, single FRAC 3 products and Luna products.
  - **Some/Poor** – Scala (FRAC 9), Rovral (FRAC 2), Miravis Prime and Oso (FRAC 19).
  - **No activity** – FRAC M3 (mancozeb), Merivon and Cannonball (FRAC 12).

Managing Fungicide Resistance

With respect to SLB fungicide resistance to FRAC 3, results of laboratory fungicide sensitivity testing of SLB isolates collected from commercial muck onion fields have aligned with fungicide use. Spray programs that included no more than 2 applications of FRAC 3 fungicides per spray program and use of double FRAC 3-product tank mixes (such as Viathon + Tilt) as opposed to single FRAC 3-prodcut tank mixes appeared to have halted progression of SLB isolates that are insensitive to FRAC 3 active ingredients (= fungicide resistance) – see last week's article. Thus:

- **No more than 2 applications of FRAC 3 fungicides per spray program per season.**
- **Use double FRAC 3-product tank mixes that include Tilt and/or Viathon when making a FRAC 3 fungicide application.**

Other important rules to follow for managing fungicide resistance:

- No more than 2 apps per FRAC before rotating to another FRAC group.
- All FRAC 3 applications should be used at the highest labeled rates.

Be especially mindful of rotating FRAC groups and minimizing fungicide use to no more than 3 applications per season for products that have medium to high risk for developing fungicide resistance (e.g. FRAC 2, 3, 7, 9, 11 and 19). FRAC groups M1 (copper products), M3 (mancozeb) and M5 (Bravo) have very low-risk, while FRAC group P07 (Rampart, Reveille, etc.) is low-risk and FRAC 12 is medium-low risk.

Following these rules, we can come up with a 5-week fungicide program (consisting of 2 apps of double FRAC 3-product tank mixes that include Viathon and/or Tilt, and up to 3 apps of FRAC 7 premixes with Rovral/Oso that should prevent excessive leaf dieback so that the crop will lodge properly and not experience a yield reduction (see example program in Table 1).

continued on page 4

continued from page 3

Week 1-3: Assumes that the only disease of concern is BLB halos at low pressure. Mancozeb (FRAC M3) has a low risk for fungicide resistance, is effective on BLB halos under low pressure and is compatible with Movento, the first insecticide for thrips in sequence. Bravo should not be used with any insecticide for thrips that has systemic or translaminar activity (Movento, Radiant, Exirel, Agri-Mek, Minecto Pro). If BLB necrotic spots or SLB are of concern when Movento is being applied, another fungicide that has activity on these diseases will have to be selected to use at this time (see fungicide Cheat Sheet).

Week 4: Assumes that no insecticide will be used following the double-application of Movento, which usually provides residual thrips control for 1-2 weeks. This a great time to use Bravo for BLB halos, BLB necrotic spots and some protection from SLB if at low pressure, as it has a very low risk for fungicide resistance.

Week 5: Assumes that the crop is 1 week away from tipburn, which is a good time to get ahead of SLB with a fungicide spray that has good activity on SLB. In the example program, Miravis Prime + Oso was selected at this timing. If SLB pressure is low and BLB halos and BLB necrotic spots are more of a concern, and no insecticide is being used, Bravo could also be used at this time.

Week 6: Now that tipburn has started and bulbing is well underway, it is time to begin our best SLB program. In the example, we used a different FRAC 7 pre-mix and tank mix partner (Luna Tranquility + Rovral) than what was used in the previous week. Also, for added prevention of leaf dieback, FRAC P07 was added to the tank mix at this time.

Week 7: This is week 2 of our best SLB program with the first double FRAC 3-product tank mix using the two best products, Viathon + Tilt. This treatment is weak on BLB halos, so if that is of concern, another fungicide with activity on BLB halos will have to be added to the tank mix. If no insecticides are being applied, the addition of Bravo (low-risk of fungicide resistance) would be a good choice here.

Week 8: This is week 3 of our best SLB program, rotating away from FRAC 3 + 3 and back to FRAC 7 premix + Oso/Rovral, and in this case, a different combo than the one used in week 6. Also, FRAC P07 product was added for activity on preventing leaf dieback during the final stretch.

Week 9: This the last week of our best SLB program and have saved the best for last at the 50% lodging spray: Viathon + Tilt. Again, another fungicide will have to be added to the tank mix if BLB halos are of concern.

Table 1. Example spray program for leaf diseases in onion, 2023.

Week	Crop Stage	Insecticide for Thrips	Product and Rate/A	FRAC[1] Groups	Risk of Fungicide Resistance[2]	Relative Disease Control[3]				DM Activity
						BLB halos	BLB necrotic spots	SLB target spots	leaf dieback	
1	4-5 leaf	None	Manzate Max 0.8 qt (= mancozeb 1 lb)	M3	VL	VG	None	None	None	Yes
2	5-6 leaf	Movento	Manzate Max 2.4 qt	M3	VL	VG	None	None	None	Yes
3	Early bulb swell	Movento	Manzate Max 2.4 qt	M3	VL	VG	None	None	None	Yes
4	0.5-1" bulb, green to tip	None	Bravo 3 pt	M5	VL	VG	G-VG	None-P	None	No
5	1-1.5" bulb, green to tip	None	Miravis Prime 11.8 fl oz + Oso 6.5 fl oz	7(4) + 12 19	H* + L-M M	VG	F-G	G	VG	No No
6	1-1.5" bulb, tipburn	Radiant	Luna Tranquility 16 fl oz + Rovral 1.5 pt + Rampart 3 qt	7(1) + 9a 2 P07	H* + M M-H L	VG-G -- None	VG -- F	F (VG: Osw.) -- F-G	VG-E -- G	No No Yes
7	1.5-2" bulb, tipburn, lodging start	Radiant	Viathon 3 pt + Tilt 8 fl oz + Omega 16 fl oz or Bravo (if no insecticide)	3c + P07, 3a 29 M5	M + L, M L VL	None E VG	E F G-VG	G None None-P	E-VG G[4] None-P	Yes Yes No
8	2-2.5" bulb, tipburn, 30% lodging	Exirel	Miravis Prime 11.8 fl oz + Oso 6.5 fl oz + Rampart 3 qt	7(4) + 12 19 P07	H* + L-M M L	VG -- None	F-G -- F	G -- F-G	VG -- G	No No Yes
9	1-3" bulb, tipburn, 50% lodging	Exirel	Viathon 3 pt + Tilt 8 fl oz + Omega 16 fl oz or Bravo (if no insecticide)	3c + P07, 3a 29 M5	M + L, M L VL	None E VG	E F G-VG	G None None-P	E-VG G[4] None-P	Yes Yes No

1 **FRAC**: Fungicide Resistance Action Committee mode of action groups. Fungicides belonging to the same FRAC group are subject to cross resistance. **Numbers in brackets (e.g. 7(1), 7(2), etc.)** indicates different active ingredients belonging to different sub-classes within a FRAC group. **Numbers followed by letters (e.g. 3a, 3b, 3c, etc.)** indicates different active ingredients within the same sub-class of a FRAC group.

2 **Risk of fungicide resistance**, according to FRAC: **VL:** very low; **L:** low; **L-M:** low-medium; **M:** medium; **M-H:** medium-high; **H:** high. **H*:** high. FRAC rates FRAC 7 as "M-H". Given our experience with FRAC 7 and SLB, we ranked it as high.

3 **BLB:** Botrytis leaf blight. **SLB:** Stemphylium leaf blight. **DM:** downy mildew. Relative performance is based mostly on the results of on-farm fungicide trials in muck-grown onions in 2021-2022 (Hoepting et al.).

4 In 2020, Omega was rated as having fair performance for keeping foliage green. It is suspected that since it was very good on BLB halos and pressure was high, that this contributed to higher plant health ratings in 2021.

continued on page 5

continued from page 4

Downy Mildew

- If your tank mix includes FRAC M3, 11, 19, 29 or P07, these all have some activity on downy mildew and may count towards your DM protection.
- FRAC 2, 3, 7, 9, 12 and 19 do not have any activity on DM.
- You may have to add another fungicide to the tank mix for added DM protection, depending on disease risk.
- Since DM "chases" SLB, and it is a struggle to control SLB due to fungicide resistance, you definitely want to be judicious about avoiding DM. ●

Preliminary Results from Garlic Eriophyid Mite Control Study Show Promise

Crystal Stewart Courtens, Vegetable Specialist, CCE Eastern NY Commercial Horticulture Program

Eriophyid mite incidence in garlic has increased in the last 5 years. These microscopic mites can cause stunted, twisted growth early in the season and may contribute to garlic rotting in the field over winter. Garlic that grows well tends to have low mite populations and growth outpaces the damage for most of the season. The low numbers that persist on garlic until harvest may explode during storage, however, leading to significant losses of bulbs.

Detecting Eriophyid Mites

Inspecting the inside of wrapper leaves and clove surface with a compound microscope can reveal mites feeding on the garlic (Fig. 1). Make sure you examine garlic carefully in storage, and check varieties with looser (easier to peel) wrapper leaves first, as they are preferred hosts. Infested cloves may shrivel and turn yellowish and soft (Fig. 2).

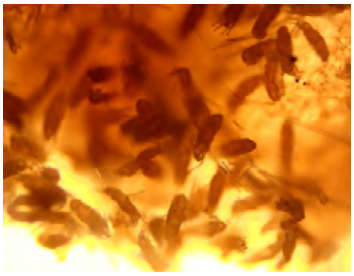


Figure 1. Mites on wrapper leaf examined at 40x magnification. *Photo: Crystal Stewart Courtens, CCE*

Figure 2. Infested garlic is shriveled, yellowing, and may have a sparkly or powdery coating. *Photo: Frank Hay, Cornell AgriTech*

If mites are detected in garlic which is being kept for consumption rather than planting, the best method to stop population increase is to store the garlic cold. Maximum mite population growth occurs at 77 °F and 80-95% RH. This temperature would be considered fine for most other storage considerations but if you have a mite issue, storage as usual will not work. Eriophyid mite reproduction slows as the temperature drops and stops at 43 °F. Hence, a moderate infestation could be held static by storing garlic at 43° or lower. If you store cool to cold, remember that the garlic is being vernalized, and will sprout if brought to warmer temperatures. Keep it cold until it is being sold or distributed.

Controlling Mites in Storage

Two primary research-based strategies have emerged to combat mites in storage of seed garlic: high-heat drying and deployment of predatory mites in storage.

High Heat Drying Technique

Heating garlic to between 113° and 119 °F for just one hour during the drying process kills mite eggs. **This process should be done with great attention to prevent bulbs reaching an internal temperature of 120°, at which point waxy breakdown occurs.** In preliminary work with Chris Callahan from the University of Vermont, we realized that the surface of garlic bulbs remains cooler than the air temperature until the garlic is nearly dry due to evaporative cooling. Because of this, bringing garlic to a high temperature once it is completely dry is the best option to actually reach the correct temperature.

Beneficial Predatory Mites

Eriophyid mites can move into the space between cloves in addition to being on the outer-facing surface, which makes the heat exposure method useful but not foolproof. In order to control mites that survive in these protected spaces and emerge during storage, we added the extra control measure of releasing *Stratiolaelaps scimitus* predatory mites during storage.

Our initial results vary from farm to farm, but the applications did reduce eriophyid mite severity on average. After this initial work we recommend *S. scimitus* applications as one tool in the toolbox, with the understanding that biocontrols can be positively and negatively affected by a variety of factors that can cause variable control. If you are interested in trying this approach, *S. scimitus* mites can be purchased from Applied Bio-nomics distributors.

There is still work to be done before we really have Eriophyid mites under control in garlic. Careful monitoring and a multi-pronged control approach is the best recommendation at this time. ●

CROP Insights

Observations from the Field and Research-Based Recommendations

BEETS

Processing and fresh market beets look good overall in our region. Weed management will continue to be a challenge if pre-emergence herbicides were not activated. Cultivation and sidedressing with nitrogen can help stimulate growth. Cercospora leaf spot typically shows up in mid to late July, and we will be out scouting crops and reporting risk values based on the weather forecasting system. – JK

CARROTS

Some processing carrot fields have uneven stands because of dry soils after planting and wind damage to young seedlings earlier this year. Management of weeds and leafhoppers are important this month. – JK

DRY BEANS

Leafhoppers are making their way into dry bean fields. Be sure to monitor numbers in earlier planted fields where seed treatments are wearing off. Mexican bean beetles (MBB) are also starting to lay eggs in some dry beans. MBB are best treated when eggs start to hatch, so keep an eye out for small larvae. – ML

ONIONS

The news of the week is that **Botrytis leaf blight (BLB) increased** (and even exploded in some fields) this past week, not surprisingly following the recent rain and cooler temperatures (Fig. 1). The crop continues to look very good. Direct seeded fields are at 6-8 leaf with early bulb swell stage and earliest early-maturing transplants have 2-2.5" bulbs. The leaves are still green to their tips. **There was not much movement with onion thrips this past week.** Two applications of Movento spaced 7-10 days apart are recommended for best thrips control. Since Senstar requires 14 days between applications, only one application of Senstar may be used and the other has to be Movento. If 1 week after the first application of Movento/Senstar you do not see a drop in thrips, or even a slight increase, go ahead with the second application, and 1-2 weeks after the second application you should see the knockdown. If you see predominantly adult (brown) thrips, this is an indication that the Movento is working very well, because it does not control adults, but controls nymphs very well. Bravo is a logical fungicide choice for any fields that have already gotten their two applications of Movento, because this fungicide is not compatible with Movento and reduces its efficacy. Bravo has very good activity on BLB halo lesions and BLB necrotic spots and some activity on Stemphylium leaf blight (SLB). It also has a very low risk for fungicide resistance. For fields that need a good BLB spray but also still need their second Movento, one option is to apply Bravo 5 days after the first application of Movento, and then apply the second Movento 5 days after the Bravo spray (10 days between Movento apps). The other option is to use a Movento-compatible BLB fungicide (anything other than Bravo) such as Miravis Prime +/- Rovral. See 2023 Cornell Onion Fungicide Cheat Sheet for more options.

Figure 1. The first Botrytis of the season; BLB halo lesions are characterized by a straw-colored pin-point necrotic spot surrounded by a silvery halo. Note, that it is not uncommon for the silvery halos to be lacking the tiny necrotic center (not shown). *Photo: C. Hoepting, Cornell Vegetable Program*

Stemphylium leaf blight (SLB) has just started to become active in this wet weather, but predominantly primary target spot lesions characterized by water-soaked/greasy appearance and occurrence on green tissue, have only been detected on the lower-frame leaves laying along the ground that will sough off within the next 2 weeks (Fig. 2). Mostly secondary SLB with the odd primary SLB target spots are occurring on necrotic tissue caused by herbicide and storm injury (Fig. 3). Although it is hoped that SLB with stay secondary in these situations, a more potent fungicide spray than Bravo may be needed. BLB necrotic spots are just

Figure 2. For the most part, the only Stempylium leaf blight (SLB) that looks primary in appearance this week occurred on the lower-frame leaves lying on the ground that will slough off within the next 1-2 weeks. Primary SLB is characterized by water-soaked tan or black target spots (pink circles) that occur on otherwise green leaf tissue (as opposed to necrotic tissue). *Photo: C. Hoepting, CCE*

continued on page 7

continued from page 6

starting to show up. See article on page 3 on fungicide spray program to get some ideas on how to balance managing fungicide resistance with disease control. – CH

POTATOES

Colorado potato beetles are still laying eggs in some fields. If you haven't treated for first generation beetles yet, make sure to scout fields for eggs and small larvae. Potato leafhoppers are present in many fields as well. Additionally, most locations have also reached the accumulated 300 P-Days needed to trigger a fungicide application for early blight. – ML

With the heavy rains this week, **almost all locations have surpassed the 30 blight units (BU) needed to trigger a spray for late blight this week.** If the weather station closest to you has not yet reached 30 BU and the forecast indicates that it will in the next 2-3 days, a spray is still recommended. Because weather conditions can vary depending on topography and altitude, the recent disease information and disease forecasts will be most accurate very close to the weather station used. For locations that are not close to a weather station, forecast information should only be used as a general indication of how favorable weather has been for late blight. On a national level, no late blight has been reported this year. –ML

Figure 3. The majority of Stemphylium leaf blight (SLB) observed this week was invading leaf tissue that was damaged by either stormy weather (in photo) or herbicide injury (not shown). It is hoped that the SLB in these situations will stay secondary. *Photo: C. Hoepting, CCE*

Late Blight Risk Chart, 7/5/23

Location	Blight Units 6/28-7/4[1]	Predicted Blight Units 7/5-7/7[2]
Albion	24	34
Arkport	37	48
Baldwinsville	37	43
Bergen	33	44
Brant	33	45
Buffalo	41	60
Burt	-	-
Ceres	40	56
Dansville	46	66
Elba	40	56
Fairville	43	43
Farmington	38	48
Fulton	45	61
Geneva	30	35
Hammondsport	30	35
Knowlesville	38	49
Lyndonville	31	43
Medina	18	23
Niagara Falls	42	61
Penn Yan	45	61
Rochester	45	60
Sodus	46	52
Versailles	29	45
Wellsville	47	67
Williamson	32	37

Calculated using a May 31 crop emergence date. Last fungicide application June 28 on susceptible cultivar Reba. Numbers in red indicate locations that have or will surpass the 30 BUs needed to trigger a fungicide application.

1 Past week Simcast Blight Units (BU)

2 Three-day predicted Simcast Blight Units (BU)

SNAP BEANS

Soybean aphids have been very active in soybeans. If they come into snap beans fields, they may transmit viruses such as Cucumber Mosaic Virus (CMV). Sensitive bean varieties may show a reduction in yield and leaf mottling and distortion. Bacterial and fungal diseases may arise after the frequent rain and humidity over the past week. - JK

SQUASH

Squash vine borers have been found in the region. Some of these farms have this problem each year but several farms who hadn't previously dealt with the problem now have it. The findings are more worrisome due to the distance between some of the farms is quite far meaning the adults have been spread further than expected, possibly due to more winds out of the north this season. For more information on this pest, check out the cover article in this newsletter. – RH

SWEET CORN

I'm beginning to see more activity from Red-winged blackbirds and Starlings in the area. If you've had bird issues in the past, make sure to get deterrent measures set up before the birds arrive on your farm and at least 10 days prior to sweet corn harvest. Processing sweet corn fields that I observed last week are looking very good with strong growth and good weed control. I'm sure there are some exceptions out there within our very large region. – JK

Western Bean Cutworm Monitoring

Margie Lund, Cornell Cooperative Extension, Cornell Vegetable Program

Western bean cutworm is a larval pest to sweet corn, field corn, and dry beans. Adult moths lay eggs on plants, and larvae will feed on leaves in their early life stages, and on the corn ears and dry bean pods as they grow larger, causing yield losses. Historically, western bean cutworm has been a pest of large concern throughout the west and Great Plains, but in the past 20 years has started migrating east into the Midwest and Northeast, moving into New York in 2009.

Monitoring began in NY in 2010 in corn, and 2011 in dry beans through on farm trapping. Since monitoring has begun western bean cutworm numbers have continued to rise and are expected to continue to increase in years to come. In dry beans, yield losses in NY are expected to be around 1% and moth numbers are generally low compared to other parts of the country. However, we have started to see moth numbers increase to moderate levels in some fields, and expect to see higher yield losses over time with increasing moth numbers.

continued on page 8

continued from page 7

Trapping to Gauge Populations and Flights

The western bean cutworm trapping network monitors adult pressure to corn fields throughout the state, and to dry bean fields in western New York. Traps are checked weekly for adult moths to determine how moth pressure is changing in different production regions.

Adult western bean cutworm moth. *Photo from C.O.R.N. Newsletter, The Ohio State University Extension*

While trapping does not provide any information on direct damage to the plants, understanding the pressure of the adult moths provides insight into possible larval damage in the field. In addition to trapping, scouting for larval damage is encouraged.

Scouting and Thresholds

In corn, scouting should begin once the first moths are found in nearby traps. Upper surfaces of plant leaves should be checked for egg masses, and leaves and tassels should be checked for larvae at 5 stops, 10 consecutive plants per stop. The treatment threshold in sweet corn is one egg mass per 100 plants. Since you're only checking 50 plants, if you see egg masses on sweet corn, schedule a spray.

Dry beans should be scouted starting a week after peak flight in late July to early August by inspecting 50 dry bean plants per field (10 stops, 5 plants per stop), looking at all pods present on the plant for holes. WBC chew directly into the pod and eat the seed. It can be difficult to scout dry beans for egg masses or caterpillars, since the caterpillars move from the pods to the soil during the daytime, so looking for signs of damage is the best strategy. Other larval pests such as European corn borer may cause damage to bean pods as well but will typically still be present in the pod when inspected while western bean cutworm likely will not. Since thresholds are not well established for western bean cutworm in New York, an insecticide treatment is recommended if any pod damage is found. ●

Western bean cutworm damage on a dry bean pod. Beans inside may be damaged as well, but it is likely no larva will be present during scouting. *Photo: Margie Lund, CCE Cornell Vegetable Program*

Sweet Corn Pheromone Trap Network Report, 7/4/23

Marion Zuefle, NYS Integrated Pest Management Program, Cornell; https://sweetcorn.nysipm.cornell.edu/

Statewide, 20 sites reported this week. European corn borer (ECB)-E were caught at 2 sites. ECB-Z were caught at 4 sites and no hybrid ECB were caught. Corn earworm (CEW) numbers are up with 11 sites reporting and with 8 high enough to be on a 4, 5 or 6 day spray interval (see table at bottom of post. Fall armyworm (FAW) were caught at 3 sites and western bean cutworm (WBC) were caught at 4 sites.

For ECB feeding in the whorl, it is important to time spray applications to target the larvae when they leave the tassel but before they bore into the plant. Larvae feeding in the whorl are protected from insecticide applications and mortality will not be as high as at tassel emergence, when larvae feeding in the emerging tassel are exposed to the spray. Larvae will leave the tassel as it opens up and no longer provides a moist, protected feeding environment, and move down the plant looking for protected places to feed. Insecticide applications need to be timed to kill larvae before they bore into a new feeding location where again they will be protected from sprays. In fields with very uneven development, two applications may be necessary, one when approximately 25-50% of the tassels have emerged, and again after 75-100% of the tassels have emerged, if the field is still over threshold.

Larvae will leave the tassel as it opens up, making it an effective time to spray. Photo: NYS IPM

WNY Pheromone Trap Catches: July 4, 2023

Location	ECB-E	ECB-Z	ECB Hybrid	CEW	FAW	WBC
Batavia (Genesee)	0	0	NA	0	0	0
Bellona (Yates)	NA	NA	NA	NA	NA	NA
Eden (Erie)	0	0	NA	1	0	0
Geneva (Ontario)	0	0	0	1	0	0
Hamlin (Monroe)	NA	NA	NA	NA	NA	NA
Leroy (Genesee)	NA	NA	NA	NA	NA	NA
Lyndonville (Orleans)	0	0	NA	1	0	0
Oswego (Oswego)	NA	NA	NA	NA	NA	NA
Panama (Chautauqua)	1	0	NA	5	1	0
Penn Yan (Yates)	0	0	0	0	0	0
Portville (Cattaraugus)	NA	NA	NA	NA	NA	NA
Ransomville (Niagara)	0	0	NA	0	0	0
Stanley (Ontario)	0	0	0	0	0	0
Williamson (Wayne)	NA	NA	NA	NA	NA	NA

ECB: European Corn Borer; CEW: Corn Earworm; FAW: Fall Armyworm; WBC: Western Bean Cutworm

Average Corn Earworm Catch			Days Between Sprays
Per Day	Per Five Days	Per Week	
<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. ●

Upcoming Events

WNY Vegetable Field Walks

July 11, 2023 (Tuesday) | 6:30 pm - 8:30 pm
Andy E Yoder's Farm, 2051 Rt 62, Frewsburg, NY 14738

July 19, 2023 (Wednesday) | 6:00 pm - 8:00 pm
Johnson Creek Produce, 12625 Roosevelt Hwy, Lyndonville

Walk from crop to crop, learning hands-on pest, disease and weed ID and scouting techniques. IPM control tactics for both preventative and reactive management will be discussed in group dialogues. 2.0 DEC credits offered (categories 1a, 23).

Vegetable Pest & Cultural Management Field Meetings for Auction Growers

Finger Lakes Produce Auction Meeting
July 12, 2023 (Wednesday) | 7:00 pm - 9:00 pm
Kenneth Hurst Farm, 9499 Co. Rt. 87, Hammondsport, NY

Seneca Produce Auction Meeting
August 2, 2023 (Wednesday) | 7:00 pm - 9:00 pm
David Peachey Farm, 5426 Rt. 414, Romulus, NY 14541

These meetings gather produce auction growers together to tour another farmer's produce farm. Cornell Vegetable Program staff will instruct participants and facilitate peer-based learning. Details on each topic will focus on field observations at the farm. 1.75 DEC credits offered (categories 10, 1a, 23, 24).

2023 Soil Health & Climate Resiliency Field Days

Join the New York Soil Health team and partner organizations at a soil health field day! The statewide event series takes place through September 2023. Take advantage of this opportunity to network, learn, and empower yourself with the latest insights and practices in soil health. Register at https://fielddays.newyorksoilhealth.org

July 13, 2023 (Thursday) | 10:00 am - 3:00 pm
Rodman Lott & Son Farms, Seneca Falls, NY
Topics: cover crops, reduced tillage, soil health, pest management

This event offers great speakers, cover crop plots, soil health demonstrations, 2.0 DEC credits (10, 1a, 21, 23) and CCA credits, a raffle, and a delicious BBQ lunch! $10 per person; register online or call Seneca Soil and Water Conservation District at 315-568-4366 to RSVP.

August 24, 2023 (Thursday) | Time TBD
Martens Farm, Penn Yan, NY
Topics: organic, cover crops, reduced tillage

August 31, 2023 (Thursday) | 9:00 am - 3:00 pm
Branton Farms, 6536 Main St, Stafford, NY 14143
Topics: planting green, biostrip till, weed management

At this field day, hear practical, field-tested results of advanced soil regenerative practices targeted to dairy, field and specialty crop farmers. CCA credits available. FREE and lunch provided. Read more information on this field day and register online or call Aaron Ristow, American Farmland Trust, at 315-748-5029.

Cornell Cooperative Extension
Cornell Vegetable Program

480 North Main Street
Canandaigua, NY 14424

VEGEdge
YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

VEGEdge
YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

VegEdge is the highly regarded 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 University and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.

Contact Us

VEGETABLE SPECIALISTS

Elizabeth Buck | 585-406-3419 cell | emb273@cornell.edu
fresh market vegetables, weed management, soil health

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

Christy Hoepting | 585-721-6953 cell | cah59@cornell.edu
onions, cabbage, broccoli, garlic, pesticide management

Julie Kikkert, Team Leader | 585-313-8160 cell | jrk2@cornell.edu
processing crops (table beets, carrots, peas, snap beans, sweet corn)

Margie Lund | 607-377-9109 cell | mel296@cornell.edu
potatoes, dry beans, post-harvest handling and storage

Judson Reid | 585-313-8912 cell | jer11@cornell.edu
greenhouses/high tunnels, small farming operations, fresh market vegs

PROGRAM ASSISTANTS

Sarah Caldwell | sv483@cornell.edu

Lori Koenick | lbk75@cornell.edu

Sarah Mertson | slm369@cornell.edu

Angela Ochterski | aep63@cornell.edu

Sofia Russo | ssr236@cornell.edu

Destiney Schultz | ds2422@cornell.edu

ADMINISTRATION

Peter Landre | ptl2@cornell.edu

Steve Reiners | sr43@cornell.edu

Cornell Cooperative Extension
Cornell Vegetable Program

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