Cornell Cooperative Extension
Eastern NY Commercial Horticulture Program

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Vegetable News

Two-Spotted Spider Mites and Other Pests

Elisabeth Hodgdon, CCE Eastern NY Commercial Horticulture

We've had a perfect summer for two-spotted spider mites (TSSM). These small arachnids thrive in hot and dry conditions, especially in high tunnels. I've seen them on almost every farm I've visited this summer on multiple crops, including cucumbers, tomatoes, beets, raspberries, dahlias, basil, and more. If left unchecked, TSSM can weaken and reduce yields of large productive plants and damage the aesthetics of ornamentals, leafy crops, and fruits, rendering them unmarketable.

Figure 1: Severe infestation of TSSM in high tunnel cucumbers. Photos: A. Galimberti

Two-spotted spider mites are difficult to see without magnification. When I'm scouting for TSSM, I look for speckled foliage (Fig. 1). Then I turn the leaf over and look with a hand lens for their small bodies, which have two black spots (Fig. 2). When infestations are severe, you will see webbing on the leaf and the mites will be actively crawling around. Many conventional pesticide options are available. For high tunnels, check the label to see if the product is labeled for greenhouse use. For organic growers, insecticidal soaps, neem, and spray oils are options. Be sure to get good coverage on the undersides of the leaves. For alternatives to chemical control, predatory mites are effective biocontrols against TSSM.

Figure 2: TSSM under a microscope. Photo: E. Hodgdon

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Tobacco Hornworm

Figure 3: Tobacco hornworm on a tomato plant. Photo: E. Denz

I saw my first tobacco hornworms this week in the northern part of our ENYCHP region. These caterpillars are very large and can quickly defoliate tomatoes if unnoticed (Fig. 3), so it's important to scout your tomatoes regularly. Their green color makes them difficult to spot on the plant, but their feeding and large frass (excrement) gives them away. Many insecticides are available for hornworm management, including Bacillus thuringiensis kurstaki, pyrethroids/pyrethrins, neonicotinoids, spinosad, diamides, and others.

Leek Moth

The second flight of leek moth has come to an end in much of our region, and damage is now visible in onions, leeks, and garlic. Damage appears as "window paning" as caterpillars feed within the leaves (Figs. 4, 5)). Leeks and onions are at risk for economic damage from the second flight. A few insecticides are registered for leek moth in NYS, but must be accompanied by the 2(ee) recommendation: Lannate, Radiant, Warrior, and Entrust (the most effective for organic growers). We usually only see damage to garlic in the scapes, and not to the bulbs themselves. To prevent migration of caterpillars from leaves into onion bulbs during drying and storage, researchers at the University of Vermont have found that removing the tops prevents leek moth damage without compromising storage quality. A third flight is expected soon, and occurs in late July – mid August. To date, leek moth has been found in Clinton, Essex, and Washington Counties in the ENYCHP region. If you believe you have leek moth and reside outside of the three aforementioned counties, please let us know.

Figure 4 (left): Leek moth "window pane" damage in onions. Figure 5 (right): Leek moth caterpillar in garlic leaf. Photos: A. Ivy

More information on leek moth can be found on the Leek Moth Information Center for the U.S. website: https://nysipm.cornell.edu/agriculture/vegetables/leek-moth-information-center/

Squash Bugs

Squash bugs are out in full force now. Recently, I've seen horned squash bugs feeding on small cucumber fruits and plant growing points in high tunnels (Fig. 6), and our usual squash bugs rapidly reproducing on zucchini (Fig. 7). Squash bugs cause damage by sticking their mouthparts into plant parts, causing wilt and scarred fruits. Insecticide control options include pyrethroids/pyrethrin, neonicotinoids, and azadirachtin. To avoid toxicity to bees, apply insecticides when flowers are closed, late in the day.

Figure 6 (top): Horned squash bugs feeding on high tunnel cucumbers. Figure 7 (bottom): Squash bug nymphs causing wilt on a zucchini leaf. Photos: E. Hodgdon

European Corn Borer

Chuck Bornt, CCE Eastern NY Commercial Horticulture

Scouting can begin in fields that are in the whorl stage. Female ECB moths have been laying egg masses on the underside of the corn leaves and larval feeding should be evident in fields that are nearing the tassel stage. It is likely that corn with ECB injury will have higher damage levels along the perimeter.

Typical examples of ECB feeding are a series of straight line pinholes as well as "window pane" damage on the emerging leaves from the whorl. Window pane damage occurs when the young ECB larvae feed on the upper epidermal of the leaf leaving a clear lower level epidermal. Below are pictures that show both types of damage.

Research has demonstrated that applying insecticides for first brood ECB before the tassel emergence does not significantly increase control. In the whorl stage the ECB larvae are

Top: Heavily infested sweet corn damage from the common army worm Mythimna unipuncta; Bottom: dead larva at the base of plants.

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protected within the leaves of the whorl. It is recommended to wait until tassel emergence before applying insecticide. When the tassels begin to emerge the ECB larvae are exposed and begin to look for a more protected environment.

The threshold for insecticide application at the tassel emergence stage is 15% infested plants.

Left: ECB pinhole damage. Right: ECB "window pane" damage.

Western Bean Cutworm: Implications for Sweet Corn Growers in ENY

Crystal Stewart Courtens, CCE Eastern NY Commercial Horticulture

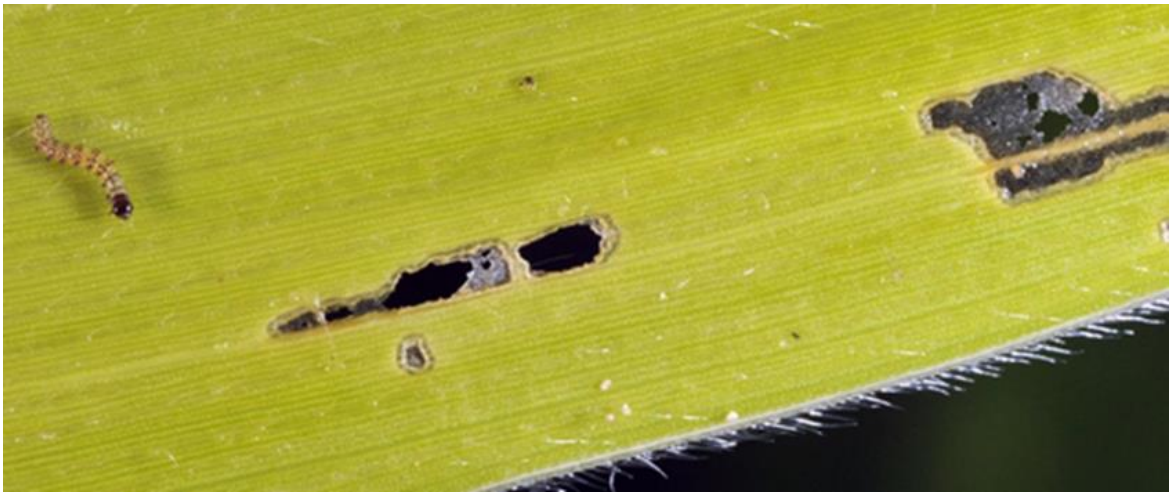
Elisabeth Hodgdon reported high Western Bean Cutworm counts this week, so we want to make sure everyone has this pest on their radar. As noted in the article below, by Abby Seaman, high trap catches don't always mean high damage, but you should scout your fields to see if they are present.

Western Bean Cutworm is an emerging pest in in our area that you should be aware of. This one is actually a native to North America and a long time pest in the high plains region of western US in corn and dry bean production. Over the past 10 years or so WBC populations have been expanding, moving eastward and now are found in most of New York. In the past 3 years, we've seen an increase in WBC moths caught in bucket traps in several sites in ENY where we've been trapping for sweet corn worm pests for many years. Last week we had several traps with 30-60 moths caught per week. Sounds scary; so should you be worried? High trap catches do not always mean high damage. But they are a good indicator that WBC are around and that you should scout fields. After consulting with a number of extension specialist to the west of us who have more experience with this pest, it likely that in most cases you will control WBC with the same sprays you are putting out at tassel for ECB. However, if you have very low ECB pressure and are not putting out tassel sprays, there is a chance you can get caught with WBC if they are in your fields.

I have a very strong hunch that this is what happened last year when I received several calls from growers that were seeing damage in corn that they were picking but it did not look like Corn earworm but ECB. It didn't' make a lot of senses as ECB trap catches were low to nothing and they were not seeing any typical damage in the tassel. They did not apply any tassel emergence sprays and WBC was there as indicated by the trap catches that we were seeing. WBC and ECB larvae look very similar as does their damage when they are small and can easily be mistaken for each other (Figure 1). Also be aware that only the Bt varieties with the Vip3A protein control WBC.

WBC moths typically lay eggs on corn while the tassel is just developing in the whorl. When the WBC eggs hatch, the larvae quickly move up the plant and into the whorl to feed on the developing tassel, where they are protected. When the tassel emerges, they are more exposed and start to move down to leaf axils and ultimately the silks to feed. Once on the silks, they soon move into the ear and are again protected. Just like ECB, the WBC are exposed and susceptible to insecticide sprays when tassels emerge.

According to the growing degree day model, we are at about 50% emergence for much of the Eastern NY, so WBC moths will likely be emerging and laying eggs in corn through August. If adults are detected in traps in your area, scout late whorl or early tassel stage corn for egg masses on the upper leaf surface of the top 3 leaves (Figure 2). The action threshold for fresh market sweet corn is 1%.



Newly hatched western bean cutworm and whorl leaf damage.
Photo: https://extension.entm.purdue.edu/pestcrop/2015/Issue18/

Resources: Dr. Tom Hunt, Dept. of Entomology ; UN-L, Celeste Welty, Ph.D., OSU, Abby Seaman, NYS IPM.

The Heat is On!

Steve Reiners, Cornell University, Cornell AgriTech

Although the last few weeks have brought much needed rain to New York, temperatures remain way above normal. These extreme temperatures can lead to lots of problems with vegetables.

Heat impacts vine crops like squash, melons, pumpkins and cucumbers both directly and indirectly. High temperatures lead to more male flowers at the expense of females. And it's the female flowers we need to get fruit. Plus, hot days keeps bees from foraging and pollinating. So even with female flowers, you may notice them fall off as bees failed to do their job.

Tomatoes are not immune to the heat either. Although we think of them as heat loving plants, they prefer more seasonable summer temperatures. Hot days over 90F and warm nights over 80F results in pollen sterility. Similar to squash, without viable pollen, you may notice flowers and pea-sized fruit fall off the plants.

The condition is temporary, and fruiting will return to normal when it cools down. But that might explain the lack of fruit you might see about six weeks from now. That's just about when the fruit that should be setting now would be ready for harvest. Peppers too have a similar problem with fruit and flower excision.

Snap bean flowers may also abort in the heat and result in split sets, which can reduce yields considerably.

The heat causes quality problems too. Cucumbers become more bitter due to a high level of cucurbitacin, a compound that occurs naturally in the fruit but usually at low levels. Stress of any kind tends to increase its level. Tomatoes and peppers will develop more blossom-end rot as drought stress reduces calcium uptake.

Sunscald is also a problem. Fruit exposed to temperatures greater than 95F can experience yellowing and browning while temperatures 5 to 10 degrees higher can cause necrosis and death of tissue. Maintain good foliage cover and fruit shading by managing diseases and optimizing soil fertility. Be careful when harvesting sensitive crops like peppers as broken branches expose previous hidden fruit.

Silk emergence and pollen shed timing in sweet corn can be uncoupled by heat. Heat and dry winds also reduce pollen germination and pollen tube development. This results in missing kernels and poor tip fill.

Hot, stagnant air masses may lead to ozone damage on crops. Common ozone symptoms are small, irregular, shaped spots that range in color from dark brown to black (stipple like) or light tan to white (fleck like). These spots are found only on the upper surface of the leaf. Very young and old leaves are less susceptible to ozone while newly mature leaves are the most susceptible. With severe damage, symptoms may extend to the lower leaf surface. Flecks from insect feeding are usually spread uniformly over the leaf surface while ozone flecks are concentrated in specific areas, usually most pronounced at the leaf tip and along the margins.

The most sensitive crops include: Bean, Broccoli, Muskmelon, Squash, Onion, Potato, Radish, Spinach, Sweet Corn, Tomato. Intermediate crops include: Carrot, Endive, Parsley, Parsnip, and Turnip. Tolerant crops include: Beet, Cucumber, and Lettuce

The best thing you can do to reduce heat problems is to maintain your irrigation program. Dry soils make problems worse. To keep plants from wilting, water needs to move continuously from the soil into the roots and up through the leaves. The water is needed for photosynthesis which of course powers the plant. But it also cools the leaf as it evaporates.

If it's dry, the small pores on the leaves called stomata close. That stops water from evaporating from the leaves. This not only shuts down photosynthesis but causes leaves to heat up.

Powdery Mildew of Cucurbits: Time to Start Applying Controls

Chuck Bornt, CCE Eastern NY Commercial Horticulture

Yellow summer squash harvest is rolling along and I'm seeing a ton of fruit set in pumpkins which is my cue to really start focusing on disease management, especially powdery mildew in vine crops. Thresholds for this disease are really low: 1 lesion per 50 leaves. Scouting needs to start in the crown canopy area where the oldest leaves usually are. Be sure to flip the leaves over to check the undersides. For me, PM is a disease that likes plants that are stressed and fruiting is probably one of the biggest stresses I can think of on a plant. Other conditions that favor PM include a dense plant canopy, high nitrogen fertilization, and high relative humidity with optimum temperatures of 68-80° F. Sounds pretty much exactly what we've had here the last couple of weeks

Not much has changed in what we are recommending this year from last. Top choices of Powdery mildew targeted fungicides recommended this season are Vivando (FRAC 50) and Proline or Procure or Rhyme or Luna Experience (all FRAC 3; Luna fungicides are also FRAC 7). Quintec (FRAC 13) can also be included in the program, but it is now recommended used on a limited basis due to reduced performance in recent fungicide evaluations. These all need to be used in alternation and tank-mix with a protectant fungicide. The schedule is below along with a table with rates, REI and PHI's, FRAC codes etc. The table can also be found at: https://rvpadmin.cce.cornell.edu/uploads/doc_903.pdf

I know I sound like a broken record, but weekly applications of systemic fungicides need to be applied with protectant fungicides like chlorothalonil (Bravo, Praiz etc.). Other protectants include sulfur – the most commercially available one is called Microthiol Disperss and has also proven to provide good protective properties when used as a mixing partner. The sulfur itself has the ability to volatilize and provide some control to the undersides of leaves as a result – but it needs to be used carefully:

- Do not follow this in succession with something like JMS Stylet Oil or other oil products as injury may result - substitute something in between like chlorothalonil.
- Do not use sulfur **materials on cantaloupes or cucumbers** as they are much more sensitive to these products.
- Do not apply if temperature will exceed 90° F within the three days following spraying, due to the risk of crop injury.
- Spreader/stickers are not required or recommended so if you are tank mixing this material with a systemic material such as Proline that recommends an adjuvant, choose a protectant other than sulfur.

I would also advise that if you decide to use sulfur products, apply them first thing in the morning or late in the evening to reduce any potential damage. Late evening is preferred for any application to a flowering crop, as most of the pollinators are either back at their hives or protected within the flowers.

Mancozeb (Manzate, Roper etc.) *should not be used* as a protectant for powdery mildew as it does not provide any protection. However, mancozeb can be used if separate applications are required for Downy Mildew. Please note that the post-harvest interval on mancozeb is 5 days for most crops.

Powdery Mildew Schedule:

Week 1: Luna Experience (FRAC 7 & 3) at the highest rates plus protectant (chlorothalonil or sulfur)
Week 2: Vivando (FRAC 50) plus protectant (chlorothalonil or sulfur)
Week 3: Procure or Proline or Rhyme (FRAC 3) at highest labeled rates plus protectant (chlorothalonil or sulfur)
Week 4: Vivando plus protectant (chlorothalonil or sulfur)
Week 5: Procure or Proline or Rhyme (at highest labeled rate) plus protectant (chlorothalonil or sulfur)
Week 6: Vivando plus protectant (chlorothalonil or sulfur)
Week 7: Procure or Proline or Rhyme (at highest labeled rate) plus protectant (chlorothalonil or sulfur)
Optional to insert in the program: Quintec (FRAC 13) plus protectant (chlorothalonil or sulfur)

ALTERNATIVE TO ABOVE:

Powdery Mildew Schedule:

Week 1: FRAC 3 fungicide* at the highest rate plus protectant (chlorothalonil or sulfur)
Week 2: Vivando (FRAC 50) plus protectant (chlorothalonil or sulfur)
Week 3: FRAC 3 fungicide* at the highest rate plus protectant (chlorothalonil or sulfur)

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Week 4: Vivando plus protectant (chlorothalonil or sulfur)

Week 5: FRAC 3 fungicide* at the highest rate plus protectant (chlorothalonil or sulfur)

Week 6: Vivando plus protectant (chlorothalonil or sulfur)

Week 7: FRAC 3 fungicide* at the highest rate plus protectant (chlorothalonil or sulfur)

**FRAC 3 fungicides to choose from: Luna Experience (also FRAC 7), Procure, Proline and Rhyme. You can alternate among these products, and will need to with Luna Experience and Proline due to label restrictions on number of applications to a crop.*

Optional to insert in the program, especially if you know you will make more than 7 weekly sprays: Quintec (FRAC 13) plus protectant (chlorothalonil or sulfur)

NONE of these materials will control Cucurbit Downy Mildew! When necessary add in specific materials for Cucurbit Downy Mildew that can be found in the Cucurbit Downy Mildew article found in this newsletter!

Please note the Fungicide Resistance Action Committee group numbers after each product and try not to apply materials that contain single active ingredient modes of action or those products with multiple active ingredient modes of action back to back!

Organic recommendations: See the products in Table 1 below in red for rates and more information. Thorough coverage of foliage is necessary for good control of Powdery Mildew. Start applications as soon as fruit start to set! The materials listed below have no systemic activity and need to be applied weekly before Powdery mildew starts! Potassium bicarbonate products such as Kaligreen, Armicarb and Milstop are good options. JMS Stylet oil can also be very effective at providing early season control of PM. Sulfur products that are labeled as fungicides, not dusts or foliar fertilizers would also be another option – but please be sure to follow the label directions and do not apply in succession with JMS Stylet Oil or any other oil-based products or use if temperatures are forecasted to be 90 degrees within 3 days of application.

Table 1: Recommended list of conventional and organic (red font) fungicides labeled for Powdery Mildew Control in Pumpkins, Winter Squash and Gourds. Please be sure to read the labels of the products you are using – this table is not a substitution for the information contained on the label that is attached to the product container. Products in orange are mixes of multiple products that contain at least 1 active ingredient from the same FRAC group and need to be rotated accordingly. Products in RED are labeled for organic use but you should check with your certifying agency to be sure they are acceptable.

Fungicide	FRAC Code	Recommended Rate/Acre	REI	PHI	Seasonal Limits	Comments
Vivando *(Metrafenone)*	50	15.4 fluid oz	12 hrs	0 days	3 applications	Do not mix with horticultural oils Do not apply more than 46.2 fl ozs/A per year. Do not make more than 2 sequential applications before switching to another FRAC Code
Procure 480 SC *(Triflumizole)*	3	8 fluid oz	12 hrs	0 days	40 fluid ounces total	No more than 2 sequential applications should be made before switching to another FRAC Code
Proline 480 SC *(Prothioconazole)*	3	5.5 fluid oz	12 hrs	0 days	2 sprays	Recommend using a non-ionic surfactant. Also labeled for Fusarium.
Rhyme *(Flutriafol)*	3	7.0 fluid oz	12 hrs	0 days	4 applications or 28 fluid ounces	
Quintec[1] *(quinoxyfen)*	13	6 – 8 oz per acre	12 hrs	3 days	4 applications or 32 fluid ounces	Do not use on edible peel cucurbits (ie: cucumbers, green and yellow summer squash). Do not apply more than two consecutive applications of Quintec before alternating to a different mode of action. The total number of group 13 fungicide sprays per crop should not exceed 50% of the total number of powdery mildew sprays. A nonionic or organosilicone surfactant may improve coverage. Penetrants and stickers are not recommended.

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Luna Experience[3] *(fluopyram) (tebuconazole)*	7 & 3	17.0 fluid ounces	12 hrs	7 days	Do not apply more than 34.0 fluid ounces per acre per year	Do not make more than 2 sequential applications before switching to another fungicide not in Group 7 or 3 So do not use Procure, Proline or Rhyme following this material). Also has Gummy stem blight on the label at 10.0—17 fl ozs/acre
Chlorothalonil (Bravo or other labeled formulation)	M5	See specific label	12 hrs	0 days		Please note the "Special Eye Irritation Provisions" on the label
Miravis Prime *(pydiflumetofen) (fludioxonil)*	7&12	9.2 - 11.4 fluid ounces	12 hrs	1 day	22.8 fl oz/A/year (two applications per year)	Do not apply within 75 ft of bodies of water such as lakes, reservoirs, rivers, permanent streams, natural ponds, marshes, or estuaries.
Regalia[2]	P5	1—4 quarts/ arce	4 hrs	0 days		Apply in 25 – 100 gallons of water per acre. Use on a 7-10 interval
Trilogy[2]	NC	0.5—1%	4 hrs	0 days		Can be highly toxic to bees
JMS Stylet Oil[2]	NC	3—6 quarts per 100 gallons water	4 hrs	0 days		
Potassium Bicarbonate (MilStop, Armicarb, Kaligreen etc.)[2]	NC	2.5—5.0 lbs	Varies by Product – Read the label!			Please be sure to read the label of the particular product you have as rates and the use of spreader/stickers vary from one product to the next.
Actinovate AG[2]	NC	3—12 ozs	1 hr	0		Requires a spreader/sticker such as NuFilm P or other approved material Use in 20-150 gallons of water/acre Apply on a 7-14 day schedule
Copper	Various formulations please see labels for more information					
Double Nickel 55 Biofungicide	NA	.25—3.0 lbs	4 hours	0 days		Use 0.25 –1.0 lb under low disease pressure and 1.0—3.0 under higher disease pressure.

[1] Do not use on edible peel cucurbits (summer squash, cucumbers).
[2] Approved for organic use, but be sure to double check with your certifying organization.
[3] There are 2 formulations of Luna products but only Luna Experience is recommended for PM and it is the better choice for gummy stem blight.

Cucurbit Downy Mildew Update and Report

Chuck Bornt, CCE Eastern NY Commercial Horticulture

I have seriously been on pins and needles scouting cucumbers hard the last two weeks looking for Cucurbit Downy Mildew and cursing all of these pop-up thundershowers that seem to be happening across the region and cringing at the heavy morning dews. If there is any good news, I personally have not found any CDM yet……yet being the key word here! The bad news is that CDM was reported and confirmed in **Onondaga County, NY** and essentially means we are surrounded by areas with confirmed cases of CDM.

According to Monday's Cucurbit Downy Mildew Forecast report, it looks like we are in a "minimal risk" period until Tuesday:

*"**Outlook**: Many of the southern source locations have been hot and dry recently, which is likely suppressing spore production. Conditions for those transport events vary, though are no more than mixed, early this week. Unfavorable conditions are forecast for the events coming out of the Great Lakes with the exception of the MI sources on Tuesday. The next approaching system helps produce some Moderate or Low Risk to cucurbits in that area that day.*

***Moderate Risk for central and northern GA, western SC, and east-central AL. Low Risk for cucurbits in southeast MS, southern AL, southern GA, FL, southern and eastern SC, and southeast NC.** Minimal Risk otherwise."*

However, with a front expected to move from the south and west

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on Wednesday and scattered showers throughout the day, I would certainly at least have a protective fungicide spray on all my cucumbers and melons.

I was also asked recently by one of our growers to try and put together a spray schedule like we do for Powdery mildew. So, with our Vegetable Plant Pathologists Meg McGrath and Chris Smart, the table below is what we came up with. As you will note on the bottom, this is not a program for everyone, but just a guide to help you along with your decision process. If you have questions or comments, please feel free to reach out to me at 518-859-6213. Right now I feel many of us will fit into the "blue" column. For more information about the products, see the last newsletter with the table that lists them or go to the following link to view them: https://rvpadmin.cce.cornell.edu/uploads/doc_904.pdf

CDM is not present on your farm nor any nearby counties that you know of:	CDM is present on your farm or has been reported in crops in nearby counties:
Crops of Concern: Cucumbers and Melons	
Week 1	
Maintain protectant program using a chlorothalonil product on crops you are harvesting or close to harvesting or mancozeb (only use this product on crops that are a minimum of 5 days out from harvest) Please note that if you are adding specific products for Powdery Mildew, do not use mancozeb containing products as they are ineffective on this disease.	Apply Orondis Ultra[1] at 5.5 – 8.0 fluid ounces plus a protectant such as chlorothalonil or mancozeb (only use mancozeb on crops that are a minimum of 5 days out from harvest). Addition of a non-ionic or organosilicone surfactant is recommended. Or Apply Orondis Opti at 1.75 – 2.5 pt without a protectant as it already contains one. Non-ionic surfactants or crop oil can be used. This product is not labeled to control *Phytopthora capsici.* Please note that if you are adding specific products for Powdery Mildew, do not use mancozeb containing products as they are ineffective on this pathogen.
Week 2	
Repeat Week 1	Apply Ranman 400 SC at 2.75 fluid ounces plus a organosilicone or non-ionic surfactant plus a protectant such as chlorothalonil or mancozeb (only use mancozeb on crops that are a minimum of 5 days out from harvest). See Week 1 notes about using mancozeb.
Week 3	
Repeat Week 1	Apply Zampro at 14 fluid ounces plus a spreading or penetrating adjuvant plus a protectant such as chlorothalonil or mancozeb (only use mancozeb on crops that are a minimum of 5 days out from harvest). See Week 1 notes about using mancozeb.
Week 4	
Repeat Week 1	Repeat starting from Week 1
Notes of Importance!	
[1] If *Phytophthora capsici* is a concern on your farm, holding off on Orondis Ultra in order to save the allowable maximum applications to be used right before a critical time such as an expected huge rainfall with tropical storm should be considered.	
You can start with any of these products and vary the order. You may also include 1 consecutive application of each of the products above (protectants such as chlorothalonil may be repeated each week), but need to be sure to rotate to a different product the next week! Failure to do so could result in resistance. The above program will also help manage Phytophthora blight, but note that Orondis Opti is not labeled for this use.	
Tank mixing with Powdery Mildew specific materials is fine. However, do not use mancozeb containing products as your protectant mixing partner as mancozeb will not control powdery mildew.	
Gavel is another option that can be used on younger plantings not near harvest as it has a 5 day pre-harvest interval (one of the active ingredients is mancozeb).	
Due to fungicide resistance affecting efficacy, these products are no longer recommended on **cucumber and melon**: Quadris, Revus, Forum, Presidio and Previcur Flex (except Quadris, these likely will be effective on squash and pumpkin due to different pathogen strains affecting these crops).	
Curzate is also labeled for CDM and has limited "curative" activity. Use would be warranted if CDM was found near your location and conditions favored disease spread and infection periods. However, activity is limited in temperatures above 85 degrees and it has short residual so it must be tank mixed with a protectant and application of another so either an additional product.	

Protect Yourself from the Sun

Jim Carrabba, New York Center for Agricultural Medicine and Health

When we think about safety issues around an agricultural workplace some of the first things that usually come to mind are injuries that occur with tractors and machinery. While it is true that a large percentage of work-related injuries and fatalities are related to such things as machinery, large animals, falls, etc, there are other safety dangers lurking around your farm that can be just as deadly but are overlooked by many. One of these hazards that farmers and other outdoor workers tend to overlook is skin cancer. According to the Centers for Disease Control, skin cancer is now the most common form of cancer in the United States.

Exposure to the sun's rays is the major cause of skin cancer. More than a million people will be diagnosed with skin cancer this year. It is estimated that skin cancer will claim the lives of 9,800 people. There are three main types of skin cancers. The first two are basal cell and squamous cell carcinomas, which are highly curable. The most serious type of skin cancer is malignant melanoma. Melanoma is responsible for three-quarters of all deaths from skin cancer. People with light skin and light hair color are most at risk for getting skin cancer. Skin cancer does not commonly occur in dark skinned people but it is still possible for them to contract this disease.

The good news is that skin cancer can be prevented. Here are some important precautions you can take to reduce your chances of getting skin cancer:

- ✓ Whenever possible, limit your exposure to the sun between 10 am and 4 pm, when the sun's rays are the strongest. Cab tractors or tractors with sunshades can help reduce your exposure.
- ✓ Always use sunscreen. Apply a broad-spectrum sunscreen with a Sun Protection Factor (SPF) of at least 15 or higher. Reapply every 2 hours. Even waterproof sunscreen can come off when you towel off, sweat, or spend extended periods of time in the water. Don't forget to apply to your face, ears and the back of your neck.
- ✓ Wear a wide brimmed hat. It provides good sun protection to your eyes, ears, face, and the back of your neck.
- ✓ Cover up. Wearing tightly woven, loose fitting and full-length clothing is a good way to protect your skin from the sun's UV rays.
- ✓ Wear sunglasses that block 99-100% of UV radiation. This will greatly reduce sun exposure that can lead to cataracts and other eye damage.
- ✓ Avoid sunlamps and tanning parlors. The light source from tanning beds and sunlamps damages the skin and unprotected eyes. You'll get enough exposure to the sun when you are out doing your farm work.

In addition to following these skin cancer prevention steps, you should also check your skin regularly for any abnormal changes. Skin cancer is curable if caught early. Some of the things you would look for include:

- ✓ Any change to the size, shape or color of moles.
- ✓ Irregular borders on moles.
- ✓ Moles that aren't symmetrical.
- ✓ Moles that are bigger than a pencil eraser.
- ✓ Sores that bleed or don't heal, red patches or lumps.
- ✓ These symptoms could appear anywhere on your body. If you notice any symptoms such as these, do not hesitate to seek medical attention. Following these precautions will significantly reduce your chances of getting skin cancer.

As a service to the farming community, NYCAMH offers on-farm safety surveys and worker safety trainings at no cost. If you want more information on these services, please contact me at 800-343-7527, ext 239 or e-mail me at jcarrabba@nycamh.com. NYCAMH, a program of Bassett Healthcare, is enhancing agricultural and rural health by preventing and treating occupational injury and illness.

Beat the Heat!

Anna Meyerhoff, New York Center for Agricultural Medicine and Health

When summer heats up and farmworkers are exposed to long days of working at high temperatures, it's very easy to become dehydrated. When our bodies lose too much water, we are no longer able to cool down by sweating, and our bodies get overheated. Dehydrated workers can become disoriented, weak or dizzy, and may suffer a heat-related illness if they do not get help quickly.

These tips can help you beat the heat this summer!

1. Drink lots of water. Don't wait until you're thirsty! It is better to drink small amounts of water frequently - before, during and after work - rather than drinking large amounts less often. Field workers need to drink plenty of water when they are working hard, more if it is hot and muggy.

2. Wear the right clothing. Wear light-colored, cotton clothing to help keep you cool. Avoid darker colors and heavier fabrics that absorb

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the sun's rays and trap heat. A wide-brimmed hat and Z87 sunglasses can also help you stay cool.

3. Take breaks in the shade. When it's hot out, you need to rest more often to avoid getting sick from the heat. Take short breaks in a cool, shaded area and drink some water.

4. Work smart. Don't overdo it during the hottest time of the day. Instead, schedule heavier tasks for early morning or late afternoon when it's cooler.

5. Avoid alcohol, caffeine and sugary drinks. They can dehydrate you more.

Remember, taking care of yourself, getting enough sleep, staying hydrated, and eating well can keep your body in good shape and help you stay healthy and strong while working. Take care and stay safe this summer!

For more information, or to set up a free on-farm safety training session, please contact me at 800-343-7527, ext 291 or email me at ameyerhoff@nycamh.com. NYCAMH, a program of Bassett Healthcare Network, is enhancing agricultural and rural health by preventing and treating occupational injury.

CFAP for Fruit and Vegetable Farms (as of July 2020)

Elizabeth Higgins, Eastern NY Commercial Horticulture Program

CFAP or the Corona Virus Assistance Program helps agricultural producers impacted by the effects of the COVID-19 outbreak by providing direct payments to producers of eligible commodities. There are currently CFAP payments available for dairy livestock (beef pork lamb) non-specialty crops (corn malting barley soybeans wheat oats) wool AND specialty crops (fruits vegetables and herbs). This fact-sheet focuses on the latter.

Generally to be eligible for a CFAP payment a farmer must have sold (or tried to sell) a specialty crop between January 15 and April 15 2020 that USDA has determined suffered a 5- percent-or-greater price loss over a specified time resulting from the COVID-19 outbreak or faces additional significant marketing costs for unsold inventories. In NYS these would generally be crops harvested in FY2019 and in storage or crops that matured and were ready to sell in January-April.

USDA greatly expanded the number of specialty crops in July that are eligible and the amount of funding for some crops that were eligible in a notice of funding availability (NOFA) so more specialty crop farmers should look at this program. If you sold apples potatoes onions garlic greens greenhouse herbs and micro-greens, you should be looking at this program! For these crops there is now an automatic payment based on crop sold rather than based on losses. The full list of eligible specialty crops (as of July 10) is at the end of this fact sheet.

Other specialty crops will be announced in a future NOFA (Notice of Funding Availability) as losses due to COVID-19 market disruptions are better understood. Nursery crops and cut flowers are still under consideration but have not yet been included.

How are payments determined?

There are three possible payments for eligible crops:

1. CARES Act Payments for crops that USDA has determined had a five percent-or-greater price decline in sales price that were sold between January 15, 2020 and April 15, 2020. This does not mean that YOUR prices needed to decline by more than 5% if a crop you sold is on this list you are eligible for the payment.
2. CARES Act Payments for eligible crop shipments that left the farm by April 15, 2020 and spoiled due to no market or the buyer did not (could not) pay.
3. CCC Payments for eligible crops that did not leave the farm by April 15 2020 (for example were harvested but sitting in crates on the farm) or mature crops that were unharvested by that date (for example were plowed under) due to lack of buyers and which have not been and will not be sold. This could also include crops you donated because the market dried up.

Payments for eligible specialty crops will be 80% of the sum of:

(1) For eligible specialty crops that were sold between January 15, 2020 and April 15, 2020 the quantity sold multiplied by the payment rate in Column 2; Producers must maintain records such as a bill of sale documenting that they sold the crop and the amount sold.

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(2) For eligible specialty crops listed that were harvested and shipped off the farm between January 15, 2020 and April 15, 2020 producers must obtain documentation such as a letter from the buyer explaining non-payment or other record validating non-payment. This applies to producers who have met contractual obligations in delivering the crop to the buyer but have not been paid the harvested and shipped quantity that spoiled (or was unpaid) multiplied by the payment rate in Column 3.

(3) For eligible unpriced specialty crops listed that did not leave the farm or mature crops that remained unharvested between January 15, 2020 and April 15, 2020 due to loss of marketing channel the sum of the quantity of crops that did not leave the farm (in acres in this case) or the quantity of mature crops that remained unharvested multiplied by the payment rate in Column 4.

Example Eligible Crop	**Column 2** **crops you sold between January and April** (per lb)	**Column 3** **crops that left the farm to be sold between January and April, but pmt. not received** (per lb)	**Column 4** **mature crops that never left the farm (could have been donated or destroyed)** (per acre)
Apples	$0.05	$0.22	$1500.00
Cabbage	$0.04	$0.07	$367.00
Collard Greens	$0.04	$0.21	$560.00
Garlic	$0.17	$1.10	$3410.00
Greens	$0.08	$0.16	$420.00
Kale	$0.00	$0.22	$748 .00
Green Leaf Lettuce	$0.44	$0.60	$2611.20
Dry Onions	$0.01	$0.05	$540.10
Potatoes, fresh (not russets)	$0.01	$0.04	$449.00
Potatoes, fresh (russets)	$0.07	$0.09	$898.00
Strawberries	$0.84	$0.72	$7042.00
Tomatoes	$0.64	$0.38	$6122.90

Table 1: Example Eligible Crops and Payment Rates—full list of crops and payments is available on the USDA CFAP website.

Should you apply?

USDA-FSA has a payment calculator on the CFAP page (https://www.farmers.gov/cfap) that you can use to estimate what your CFAP payment is likely to be. This will help you determine if it is worth applying. If your crop is eligible for a payment in column 1 it is almost certainly worth applying as the application process is easy. USDA FSA has made this program very accessible (by USDA standards). Unfortunately for NYS specialty crop growers without crops in storage or early season crops currently summer and fall crop losses for 2020 aren't covered as the crops needed to be mature and harvested by April 15th.

USDA is aware that there are likely to be some specialty crops that suffered losses that weren't included. If you suffered significant losses from a specialty crop that isn't covered USDA is collecting data to consider including other crops. Examples of these could include maple syrup and nursery plants. Contact FSA if you produce a specialty crop that suffered losses that aren't reflected here.

What do you Need to Apply?

Sign ups for CFAP began on May 26 and will run through August 28. The application for CFAP is available at https://www.farmers.gov/cfap. Forms are on-line. The program is first come first served at the national level. Links to local FSA offices are also on that website.

All applicants need to be signed up with USDA FSA to be able to apply for these funds. If you have NAP have had a USDA-FSA loan or have USDA NRCS cost-share funding you are probably already in their system. Because USDA disaster payments almost always require you to be signed up with FSA even if CFAP payments are not much signing up with USDA-FSA would get you into the USDA system to be eligible for future programs. Also, by being in the system USDA is more likely to see how disasters impact your farm.

Events & Updates

Managing Humidity and Condensation in Coolers
July 29, 2020—5:00pm-7:00pm
Zoom webinar

Please join us for a virtual twilight meeting on how to manage humidity and condensation in coolers to increase shelf life and prevent food-borne illness.

Our speakers will include Chris Callahan and Andy Chamberlain from UVM's Ag Engineering program, Mary Choate, from UNH Extension's Food Safety Team, and Paul Franklin from Riverview Farm in Plainfield, NH.

Register in advance for this meeting: https://bit.ly/7-29VirtualTwilight

NYCAMH/NEC Farmworker Needs Assessment Survey

Please support NYCAMH's farmworker needs assessment by encouraging your farm employees to complete the survey below. NYCAMH provides farm safety training and equipment, respirator fit testing and other resources to help keep you and your workers safe and healthy!

The purpose of the survey is to understand the unique challenges your workers are facing in relation to the COVID-19 pandemic. This information will help NYCAMH create materials and programs that are more appropriate and helpful to you and your workers. To gather this data, we are asking if you would share the following survey link with your workers:

Please click here to take the survey in English: https://redcap.bassett.org/redcap/surveys/?s=NH8CHXX499

Please click here to take the survey in Spanish: https://redcap.bassett.org/redcap/surveys/?s=LND3MR9TPD

Corn Trap Counts

County	ECB-E	ECB-Z	FAW	WBC	CEW
Albany	0	0	0	0	0
Clinton 1	1	0	0	39	0
Clinton 2	0	0	0	25	0
Columbia	0	0	0	2	3
Dutchess	3	0	N/A	N/A	4
Essex	0	0	0	16	0
Orange	0	0	12	4	11
Rensselaer	0	0	0	3	6
Ulster 1	36	0	N/A	N/A	4
Ulster 2	21	0	0	6	11
Ulster 3	0	0	N/A	0	N/A
Washington	0	0	0	3	2

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