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THE PRODUCE PAGES

Serving the fruit and vegetable growers of Eastern New York

Chuck Bornt picks tomatoes for the variety trial at Altobelli Family Farm in Kinderhook, NY. Photo: N. Field

Cornell Cooperative Extension
Eastern NY Commercial Horticulture Program

Feature Story

2020 CCE ENYCHP Beefsteak Tomato Variety Trial Results

Chuck Bornt, CCE ENYCHP

During the summer of 2020, the CCE ENYCHP team evaluated 13 varieties of beefsteak tomatoes for yield and overall quality. If you did not have the opportunity to log on to our Variety Trial Webinar On December 9th, I'll try to sum the results up here, but I highly recommend that you take a look at all the results for this trial on our website at: 2020 ENYCHP Tomato Variety Trial Results. Here you will find all the data and comments on the varieties.

Materials and Methods: Trial was located at Altobelli Family Farm in Kinderhook, NY (Columbia County). Seeds of 13 determinate beefsteak tomato varieties (Table 1, page 3) were seeded at Altobelli Family Farm greenhouses on May 7, 2020. Tomatoes were transplanted in the field on June 12, 2020 into black plastic mulched raised beds on 6' centers with 24" between plants in-row. Plots consisted of 8 plants replicated two times for a total of 16 plants per variety for evaluation. All plants were staked, pruned and tied in the Florida Basket weave system by the Altobelli Farm crew. All irrigation, fertility, and pest management were also completed by our host farm. Tomatoes were harvested by CCE ENYCHP staff starting on August 21st, September 1st, September 15th and October 2, 2020. Fruit were graded into three marketable categories based on size or unmarketable (culls) due to defects such as radial cracking, size, miss-shaped etc.

Results: Overall, most of the varieties did well, but nearly all the varieties

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The Produce Pages

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CCE ENYCHP Enrollment for 2021 is now open!

Visit the following link to enroll:
enych.cce.cornell.edu/enrollment.php

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Serving the Educational and Research Needs of the Commercial Small Fruit, Vegetable and Tree Fruit Industries in Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Montgomery, Orange, Putnam, Rensselaer, Saratoga, Schoharie, Schenectady, Ulster, Warren and Washington Counties.

(Continued from cover)

Table 1: 2020 Names and Seed Sources of Tomatoes in this Trial	
Variety	**Source**
Bejo 3212	Bejo Seeds/Gowan
Bejo 3353	Bejo Seeds/Gowan
Bejo 3437	Bejo Seeds/Gowan
Camaro	Sakata Seed
Emmylou	Seedway/Gowan
Galahad	Johnny's SS/Gowan
Grand Marshall	Johnny's Selected Seeds
Jolene	Seedway/Gowan
Mountain Merit	Bejo Seeds
Red Snapper	Seedway
Roadster	Sakata Seed
STM 2255	Seedway/Gowan
TastiLee	High Mowing Seeds

showed some degree of radial cracking. Bejo 3437 had the highest marketable yield with approximately 25,800 lbs of tomatoes harvested with 54% in the 'Large' category (weighing more than 12 ounces). Not only did this variety yield well, it also had very good internal appearance including a small core with a medium to dark red flesh. Bejo 3437 also was one of the best tasting tomatoes to come out of this trial (data is limited as Chuck Bornt was the only person tasting these tomatoes) with a pleasant texture. Bejo 3437 also had one of the lowest culls levels in the trial at 11%.

Bejo 3437 was the second highest yielding variety in the trial but fruit size was much larger compared to TastiLee which was the highest yielding variety. Photo: N. Field

Next, Red Snapper and Camaro were excellent yielding, with Camaro resulting in the highest percentage of 'Large' fruit (74%). Red Snapper was not too far behind with 64% of its total yield in the 'Large' category. Both varieties exhibited nice internal appearance with orangey – red flesh color, small cores, medium sized blossom and stem scars and good flavor. In this trial, the bulk of the varieties we are evaluating are for large, beefsteak types. However, one other variety in this trial worth mentioning is TastiLee from High Mowing Seeds. This variety had the highest marketable yield (over 33,000 lbs per acre), but 90% of the fruit were in the medium (49%) or small (41%) size category. This tomato would be great for those folks that have a roadstand that sells tomatoes in quart baskets, or has a wholesale market for the smaller sized fruit. It also has a high tolerance to Fusarium and Verticillium wilt which may make it good for high tunnel situations where tomatoes are grown year after year and these soil borne pathogens have become an issue. It also had a very low cull rate with about 11% of the total yield.

As the saying goes, you take the good with the bad and this trial had some less than optimal fruit producers. Galahad has the size to be a good variety, but had major radial cracking issues. Of the nearly 25,000 pounds of fruit harvested, only 5,500 pounds per acre were actually marketable making this this variety the highest cull rate with 78% of the fruit unmarketable. Unfortunately, our standard, Mountain Merit, also had some major issues with nearly 46% of the fruit harvested unmarketable due to deep radial cracks. Emmylou also was one of the lowest yielding varieties due to radial cracking and blossom end rot.

Camaro had attractive large fruit and attractive internal and external appearance. Photo: N. Field

Red Snapper is a very attractive fruit with excellent yields and quality. Photo: N. Field

If you are a tomato grower looking for a large fruited variety, I would recommend that you give Bejo 3437 (if it's named, I'll get a note out ASAP), Camaro or Red Snapper a try - a short row of each (and remember where you put them!) and see how they perform on your farm with your soil types and management practices. I can't guarantee how the will perform as this is one trial on one soil type, but I think if their performance in this trial is any indication of the potential of the variety, they might be worth the look!

If you have comments or questions about the trial or any of the varieties discussed, please feel to reach out to me anytime – my cell number is 518-859-6213 or email cdb13@cornell.edu And remember, all of the trial results including tables and pictures can be found on our website at: 2020 ENYCHP Tomato Variety Trial Results

Leek Variety Trial Leads to Exciting Discoveries

Crystal Stewart Courtens, CCE ENYCHP

Leeks are all pretty much the same, right? Turns out, there is tremendous diversity in leeks in their days to maturity, color and stature, and disease resistance. This season we trialed thirty-six different varieties in an organic system to screen for suitability for summer, fall, and winter production. We were surprised to have summer leeks that were competitive with fall leeks for yield and quality, and to see tremendous variety in the stature of winter leeks, with some resembling giant, leafy onions and probably occupying an entirely different market niche. Read on to learn how we did it, and a little about the varieties we trialed.

Natasha prepares leek seedlings for transplanting on May 22nd. Photo: C. Stewart Courtens

How we grew leeks: We started the leeks in strip trays in mid-March to save space in the greenhouse. A month later, we transplanted the seedlings into open flats, giving each seedling about an inch by an inch of the flat. We buried seedlings about a half-inch deeper than they had initially been planted at this point. Seedlings grew in the open flats until Mid-late May, when they were transplanted out to the field. At this point the leeks should be around the size of pencils. Ours were a bit thinner than that on average, but they caught up just fine. Even as seedlings, some varieties showed far more uniformity than others. Our first screening during the two transplantings, when we culled any plants that clearly were not thriving.

Leeks after being lightly hilled. Photo: C. Stewart Courtens

The leeks were transplanted onto beds at 6 inches in-row and 18 inches between-row. We transplanted by hand by first forming a furrow and then placing the leeks into a hole. Ideally, about 4 inches of the transplant was placed below ground at planting. As the leeks grew they were lightly hilled during cultivation to further mound soil against the leek and blanch the stalk.

Leeks being washed prior to evaluation. Photo: C. Stewart Courtens

Results and Discussion:

Before entering the presentation of data, it is important to note that a number of leeks were harvested after the recommended days to maturity (DTM). In all of these cases the varieties could have been harvested at the suggested DTM, but when a variety showed no signs of bolting or splitting, and had low disease incidence, we chose to leave it until it appeared to have stopped improving in weight and size. The varieties with delayed harvest were: Skater, Jaune de Poutiou, Jumper, Lancelot, Prizetaker, Tadorna, Esther Cook and Keeper. They all kept in the field at least a month longer than their recommended DTM. Vitalis Seeds has also noted that Chinook was bred as a summer leek, though we placed it into the fall category. This suggests it, too, has a longer harvest window.

We also left some varieties out in the field after harvesting our samples to see how they held. Bowler and Megaton both did well and continued to size after harvest at correct DTM.

The environmental conditions this season are also noteworthy. We had 32 days where the temperature was over 85°F and 3 inches less rain than average (the trial was, however, irrigated). Disease pressure was light for most of the season, with only a few varieties showing notable Purple Blotch damage. Susceptible varieties were Comanche, Takrima, Runner, and Walker.

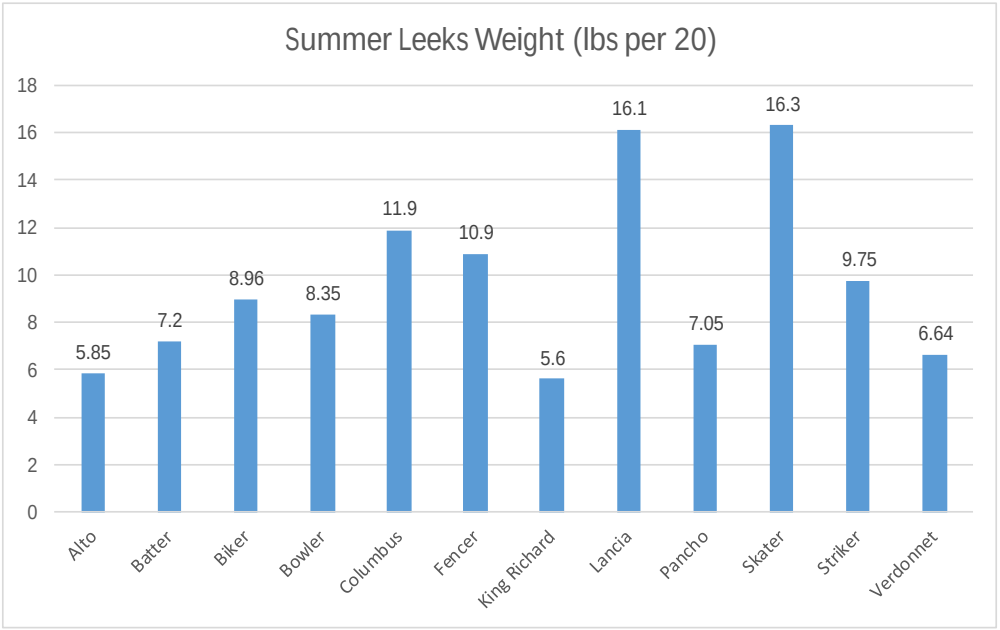
One of the key takeaways from this trial is that there are many viable alternatives to the industry standards of King Richard early and Megaton later in the season. Personal favorites included Skater early, for its deeper blue-green color and stouter habit; Chinook as a mid-season selection for uniformity and size; and Keeper as a late selection for its beautiful

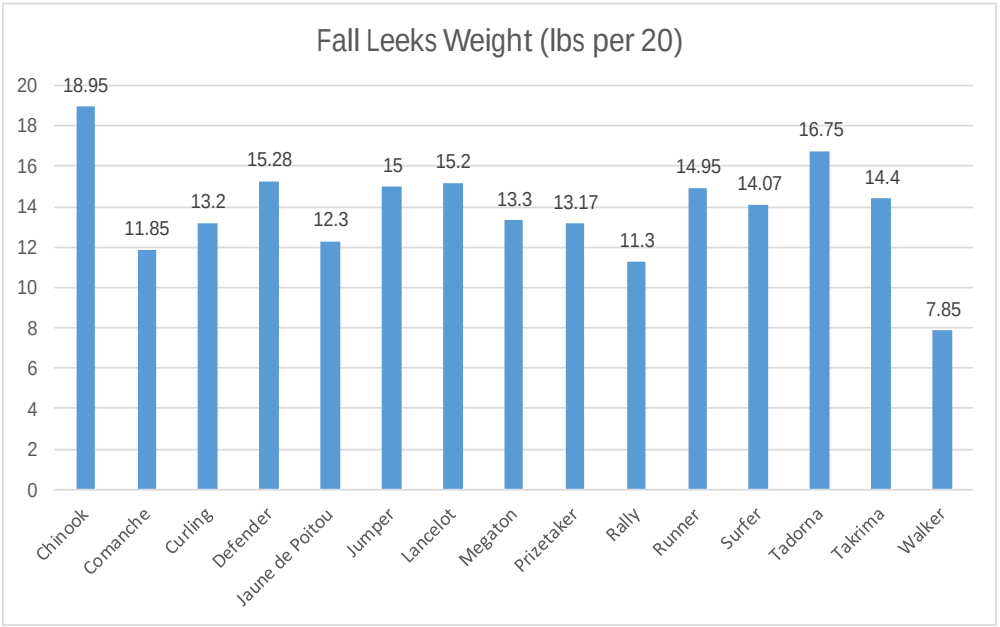
upright habit and deep blue/green color.

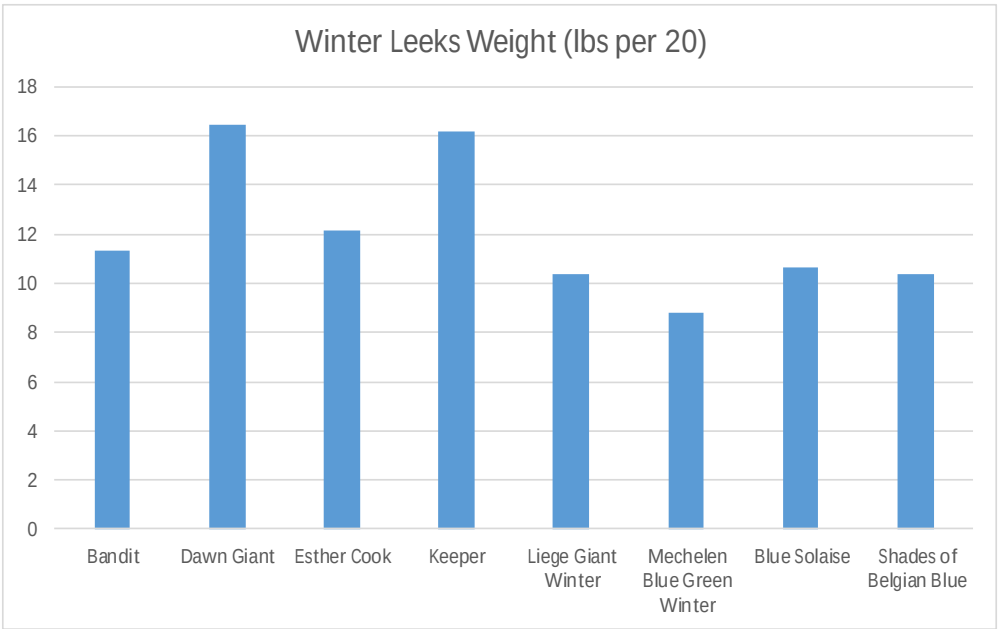
Year one of this trial was used for screening a large number of leek varieties; year two will be used to dig deeper into some key questions surrounding leek production in the northeast. We'll reduce the number of varieties while introducing replication to provide statistical information on yield potential, and will be looking at earlier harvest and longer storage as one potential method to avoid Allium Leaf Miner infestation.

For a complete copy of the leek report including detailed variety descriptions and data, visit our website's leek page. Thank you to Vitalis, Bejo, Johnny's Select Seeds, and High Mowing Organic Seeds for the generous support of this trial.

Quick Comparison: Weight (lbs) of 20 leeks per variety







Using Banker Plant Systems to Prevent Spring High Tunnel Aphid Outbreaks

Elisabeth Hodgdon, CCE ENYCHP

Aphid infestations can come seemingly out of nowhere. Because aphids reproduce clonally and very quickly in warm weather, one individual aphid entering a high tunnel can cause a full outbreak in no time. Green peach aphid is a common culprit in high tunnels and has a very broad host range, including ornamentals, tomatoes, peppers, greens, and more. Biological control using parasitoid wasp releases is one way to effectively manage green peach and other aphid species in tunnels. Wasps, however, must be released when populations are low in order for the aphid population to be sufficiently suppressed before crop damage occurs. The timing of wasp release can be problematic; aphid populations often go unnoticed until they are large, and there can be delays in receiving wasps shipped from biocontrol companies.

How can you plan now to stay ahead of aphid issues in the spring and summer? We all know that regular scouting is essential to ensure a quick response to a problem. For a truly proactive approach, the aphid banker plant system is an excellent strategy. The aphid banker plant system was first used in the Netherlands in vegetable greenhouses, and is appropriate for use in high tunnels and greenhouses producing most ornamentals, vegetables, and fruits. Monocot crop (lilies, onions, grasses, and others) production systems are not appropriate for the banker plant system.

What is the aphid banker plant system?

This system uses "banker" plants (cereal grains) to rear non-pest aphids (grain-feeding "bird cherry oat aphids") that serve as a food source for parasitoid wasps. Wasps are released in a tunnel or greenhouse as soon as you populate the house with your economic crop. The wasps are sustained on the non-pest aphids, and are ready to go when pest aphids make their way into your tunnel. Wasps (Fig. 1) lay eggs in aphids. The eggs later hatch and develop into larvae that consume the aphid from the inside, turning it into a dead "mummy" (Fig. 2). When care is taken to produce banker plants all season long, green peach aphids and other aphid species can be successfully suppressed throughout the entire season.

How do I set up an aphid banker plant system?

Starting and caring for the banker plants

Many biocontrol companies will sell aphid banker plant "starter cubes" (Fig. 3). These cubes contain pre-started oats or other cereal grains with bird cherry oat aphids on them. Order the cubes, and plant them into trays or pots six weeks before you plan to populate your high tunnel or greenhouse with seedlings. Plant grain seeds (oats, barley, rye, or wheat) around the cubes in the pot. Leftover cover crop seeds work well as banker plants. The aphids will feed on the grains in their cubes, and then move onto the grains you planted. For many operations, this must be done in December, January, or February. Ideally, the system should be ready to go as soon as you have plants in your tunnel or greenhouse for it to truly be a proactive approach. It is too late to use the system if you already have pest

Fig. 1: *Aphidius colemani* wasp. Photo: D. Cappaert, Bugwood.org.

Fig. 2: Aphid "mummy" with exit hole from parasitoid wasp. Photo: K. Wise, NYS IPM Program.

Fig. 3: Aphid banker plant "starter cube" with oats infested with black-colored bird cherry oat aphids (left), and starter cubes planted in pots with oat seeds (right). Photo: E. Hodgdon

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aphids.

Your banker plants must be kept in a separate cage with very fine mesh. Once you start releasing wasps, they can crash your bird cherry oat aphid population and disrupt your production of banker plants. They are excellent aphid seekers. Another option is to use hair nets to cover individual banker plant pots, and start them in your home under grow lights to prevent cross contamination.

Banker plants should be seeded weekly, or at least every other week, to ensure a supply of fresh plants and aphids for your high tunnels. Adjust your production accordingly based on your transplanting and tunnel opening schedule. As your bird cherry oat populations build, you can transfer them from one banker plant pot to another by clipping some of the plants and laying them on the new pots, rather than continuing to purchase new starter cubes.

Releasing wasps

About one week after planting your starter cubes or infesting new pots with aphids, release *Aphidius colemani* wasps within your cage or hairnets over pots. Care should be taken to isolate pots with wasps from younger pots with bird cherry oat aphid populations that are developing. Roughly a week after releasing wasps, you should start to see mummies on the blades of grass. You'll have to purchase wasps for a few weeks until the population on your plants builds so that you have enough to supply your banker plant production.

Introducing banker plants into tunnels

Once you have a series of banker plants in production and a healthy population of bird cherry oat aphids and wasps, you can start taking plants out of your rearing area and moving them into your high tunnels. Make sure to plan for irrigating your banker plants, either through drip or hand watering. If you produce hanging baskets, you can produce your banker plants in baskets and hang them on your line with the others.

What are the benefits to using the banker plant system?

Rearing non-pest aphids, cereal grain plants, and wasps seems like a lot of work. An effective banker plant system helps you avoid "aphid emergencies" that can cause vegetable crop loss and loss of high value ornamental plants. By rearing your wasps in advance of pest arrival, you are ensuring that the wasps are already acclimated to your environment, and that there is no delay in their activity. Wasps are highly effective in seeking out their aphid hosts, and will readily seek out hard to find pest aphids amongst your tunnel crop.

Where can I find more information?

The University of Vermont Entomology Research Lab has an excellent step-by-step instructional guide to getting started with banker plants, including a materials list, cost of supplies, and what to do each week. Additionally, a phone call to your biocontrol sales representative can assist you in determining how many banker plants and wasps you'll need for your particular system.

References

Aphid Banker Plant System for Greenhouse IPM, Step by Step, by Margaret Skinner, Cheryl E. Frank Sullivan, and Ronald Valentin. 2017. University of Vermont Entomology Resource Laboratory and Bioline Agrosciences, Inc. Available from: https://www.uvm.edu/~entlab/Greenhouse%20IPM/Pests&Beneficials/Plant%20Mediated%20IPM%20Systems/AphidBankerPlantSystemJuly2017Final.pdf

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Powdery Mildew: A Quick Reminder

Michael Basedow, CCE ENYCHP

Powdery mildew was observed in Eastern New York orchards throughout the 2020 growing season. This was a banner year for powdery mildew in some spots, as our unusually warm, dry spring provided excellent conditions for this fungal disease to thrive. Given the likelihood that we will have an increased presence of inoculum to start out the 2021 growing season, I thought I would review some of the key aspects of powdery mildew management.

Causal Agent and Basic Life Cycle

Apple powdery mildew is cause by *Podosphaera luecotricha*, an ascomyete fungus. This pathogen overwinters in dormant shoot and flower buds that were infected during the previous growing season. The mildew in these infected buds will further colonize new tissues once the buds break in the spring. These primary infections will be evident beginning around tight cluster as infected tissues begin to expand. Leaves will be covered in mycelial growth, appearing powdery white in color. Flower clusters emerging from infected buds will also appear malformed; these blossom infections will likely cause flowers to fail to set, or produce small, russeted fruit.

As mildew continues to spread on these surfaces, it will form masses of conidia which can spread by the wind to young, healthy leaves. Young leaves are particularly susceptible to infection in the first few days after they open up, when weather conditions are conducive. (Unlike scab, warm and dry weather promotes mildew infections). These new infections cause secondary lesions, which appear as patches of white mycelia on the underside of the newly infected leaf. As this infection spreads, yellow spots may show on the upper leaf surface. The upper leaf surface will become white, and may eventually turn brown as the infection progresses. Infected leaves tend to crinkle or roll upwards along their edges. These leaves may also drop prematurely during the summer.

In favorable conditions, new leaf infections may progress down the petiole and into young shoots. At this time, buds may become infected, starting the cycle over again in the following growing season.

What to Look For

In the spring, about tight cluster, look for clusters covered in white, powdery growth (Figure 1). As the spring progresses, look for poor growing shoots, with powdery growth, shriveled leaves, and malformed flower clusters (Figure 2). Secondary infections on new leaf terminals will have pale yellow spots on the upper leaves, which will then develop powdery white mycelial growth (Figure 3). These should become evident around petal fall. As secondary infection progresses, leaves will become curled, and may turn brown and prematurely fall off the trees if infection is severe enough.

Management Considerations

Powdery mildew does not overwinter particularly well, so if we

Figure 1: Primary cluster infection showing powdery mycelial growth (right), while the cluster on the left is healthy. Photo: Dr. David Rosenberger)

Figure 2: Powdery mildew infected flowers appear distorted and covered with powdery white growth. Photo: Dr. Kerik Cox)

Figure 3: Secondary powdery mildew infection on the upper leaf surface. Photo: Dr. Srdjan Acimovic

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reach temperatures below -10°F, about 95% of overwintering mildew may be eliminated (though this will likely be accompanied by winter bud damage to the infected buds). Pruning will likely not contribute to a major inoculum reduction, as enough infected buds will still be present to serve as an inoculum source in the spring. However, proper pruning will open up the tree canopy to create less favorable environmental conditions, and will also increase fungicide spray deposition during the spring.

If our spring proves cool and wet, your apple scab program will likely manage powdery mildew infections. However, if we have a mild winter, and 2021 brings us a hot and dry spring, we recommend staying on top of your fungicide program to maintain adequate coverage during the prime powdery mildew windows. Applications should be made at roughly 7 to 10 day intervals from tight cluster to petal fall for mildew control. After petal fall, the interval may be widened to 12-14 days up until terminal bud set for susceptible varieties.

Fungicide Options

Single site fungicide chemistries for powdery mildew control include the demethylation inhibitors (DMIs), quinone outside inhibitors (QoIs), and the succinate dehydrogenase inhibitors (SDHIs). Fungicide products containing SDHI's and SDHI-containing pre-mixes are currently one of the most effective FRAC groups, as fungicide resistance has led to reduced efficacy of some of the DMI and QoI groups of materials in some regions. Products that have performed well in the last three years of Kerik Cox's efficacy trials include: Luna Sensation (FRAC 7+11), Sercadis (7), Merivon (7+11), Inspire Super (3+9), Luna Tranquility (7+9), and Miravis (7). Where DMI resistance is not present within an orchard, effective DMI containing materials include: Rally, Rhyme, Indar, and Procure. Remember that single site materials are vulnerable to resistance development, so use limitations on the labels must be strictly followed, and materials from different FRAC groups should be rotated in your spray program. These products should also be used in combination with products containing multi-site protectant fungicides, such as mancozeb or captan.

More Resources

For additional information on powdery mildew and its control, review the factsheet written by David Strickland, Juliet Carroll, and Kerik Cox. You can also review the online IPM materials at the Cornell Fruit Resources, the Apple IPM Intensive Workshop Online Materials, and subscribe to the Acimovic Lab Blog Posts.

2020 Seedless Watermelon Trial

Teresa Rusinek, CCE ENYCHP

On farm trials are a great opportunity for growers to see first-hand how new varieties perform under typical field conditions. Usually we'll set up a field day around trial harvest time so growers can make their own observations. Unfortunately, this year it was notpossible due to gathering restrictions and safety issues due to COVID 19. Following safety protocols, ENYCHP specialists were able to conduct field work to run ongoing trials and research projects and to collect data through the season. We have lots of information from this past season to share with you through our newsletters, virtual meetings, podcasts and our website.

One of the trials I was especially excited about was the seedless watermelon trial which was hosted at Wallkill View Farms inUlster County. Last winter, John Ferrante, farm manager at Wallkill View Farm, worked with us to plan and lay out the trial. We ended up with 10 seedless watermelon varieties and Wild Card as the non-harvested pollinizer. John took care of all the seeding, field preparation and maintenance. He provided the following information and photos for this report.




From left to right: Seeding date: May 6th—one seed per cell in 38 cell trays. **Bed preparation**: May 5th. Beds were formed with a 4' roll of plastic and two lines of drip tape on 7' centers. Dry fertilizer was also applied during bed formation at a rate of 300lbs/acre of 13-13-13. Pre-plant herbicide was applied between rows of plastic after bed formation. A tank mix of Prowl H20 and Sandea at rates of 2pts and ½ oz per acre. **Transplanting**: plants were set into the field on June 5th using a water wheel transplanter with 40" in row spacing. Two weeks post-transplant (at running) 20lb actual N/acre side-dress was applied. After fruit set, another 20lb actual N/acre was applied.

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Harvest information

The first melons were harvested on August 3, with 4 additional harvests. At each harvest, weight, size and brix (sweetness) measurements were taken and complied. Fruit was graded into: 60 Counts (9.0 to 13.5lbs, 45 Counts (13.6 to 17.5lbs) 36 Counts (17.6 to 21.4lbs) 30 Count (more than 21.5lbs). Six of us, including John, were fortunate to take part in taste testing the varieties. Below are photos and highlights for each of the varieties grown. You can find the full reports with all the data for each variety on our ENYCHP website https://rvpadmin.cce.cornell.edu/uploads/doc_951.pdf.

Citation

·From Sakata Seeds
·Medium green striped skin
·Bright pink flesh
·Average fruit weight 12.6 lbs
·Average length 9.5 inches
·Taste tests rated it 4 out of 5
·Strong flavor, not super sweet but still tasty. Juicy and had a good texture
· 4,680 marketable fruit per acre (58,995 pounds) most in the 60 count range (9.0 to 13.5lbs)

Cracker Jack

·From Vitalis Seed
·Dark green striped skin
·Medium to dark red flesh
·Average fruit weight 15.9 lbs.
·Average length 11.2 inches
·Taste tests rated highest 4.5 out of 5
·Super sweet taste, very delicious and juicy. Taste faded fast and texture was crisp but melted in the mouth.
·4,149 marketable fruit/acre (65,835 lbs.) most in the 45 count range (13.6-17.5lbs)
·Fruit was very consistent in size and shape
·Our favorite in the trial

Eclipse

·From Sakata Seed
·Dark green solid skin
·Medium red flesh
·Round Shape
·Average fruit weight 12.3 lbs
·Average length 8.9 inches
·Taste tests rated it 2.5 out of 5
·Internal splitting and dryness. Decent, but not standard seedless watermelon taste. Melt in the mouth texture.
·All fruit we opened had cracking and splitting but flesh was still good to eat
·4,893 marketable fruit per acre and 60,356 pounds with 80% in the 60 count range (9.0 to 13.5lbs)

Joyride

·From Seminis Seed
·Medium green striped skin
·Dark pink flesh
·Ave. fruit weight 17.9 lbs. – highest in trial
·Average length 11.7 inches
·Taste tests rated it 3.25 out of 5
·Decent tasting and super juicy. Texture somewhat chewy and lasted in the mouth.
·3,085 marketable fruit (55,187 lbs.) /acre
·Had the highest % of 30 count fruit.
50% in the 45 count range (13.6-17.5lbs), the rest in the 36 count (17.6-21.4lbs) and 30 count range (greater than 21.5lbs). Only 3% of fruit were in the 60 count range (9.0-13.5lbs)

Kingman

·From Sakata Seed
·Light green striped skin
·Medium red flesh
·Average fruit weight 16.0 lbs
·Average length 10.9 inches
·Taste tests rated it 3.75 out of 5
·Good flavor, not super sweet. Decent texture. Flavor fades fast
·Produced 3,191 marketable fruit and 51,113 lbs./acre with 50% in the 45 count range (13.6-17.5lbs)
·It was inconsistent in size and shape of fruit

Red Amber

·From Vitalis Seed
·Light green striped skin
·Pink flesh
·Average fruit weight 16.9 lbs
·Average length 11.5 inches
·Taste tests rated it 3.5 out of 5
·Had good flavor, not super sweet. Very juicy and had a nice crunchy texture. It lingered in the mouth a little, can get chewy if overripe.
·Produced the most total weight and the most 36 count fruit
·5,106 marketable fruit, 86,535 lbs./acre and with 50% in the 36 count range (17.6-21.4lbs).

Red Garnet

·From Vitalis Seed
·Medium green striped skin
·Medium red flesh
·Average fruit weight 14.1 lbs
·Average length 10.9 inches
·Taste tests rated it 4.25 out of 5
·Had nice sweet flavor, and was very juicy. Melt in the mouth texture.
·2,766 marketable fruit (38,901 lbs.) per acre and with half in the 60 count range (9.0 to 13.5lbs) and half in the 45 count range (13.6-17.5lbs)
·One of our favorites for looks and taste but lowest yielding in marketable fruit

Red Opal

·From Vitalis Seed
·Medium green striped skin
·Medium red flesh
·Average fruit weight 14.1 lbs
·Average length 10.9 inches
·Taste tests rated it 4.25 out of 5
·Had nice sweet flavor, and was very juicy. Melt in the mouth texture.
·2,766 marketable fruit (38,901 lbs.) per acre and with half in the 60 count range (9.0 to 13.5lbs) and half in the 45 count range (13.6-17.5lbs)
·One of our favorites for looks and taste but lowest yielding in marketable fruit

Secretariat

·From Sakata Seed
·Medium green striped skin
·Bright pink flesh
·Average fruit weight 12.9 lbs
·Average length 9.8 inches
·Taste tests rated it 3.75 out of 5
·Sweet and tasty. Had a good, crisp texture.
·Some fruit had a few brown seeds
·5,744 marketable fruit (73,834 lbs) per acre with most in the 60 count range (9.0-13.5lbs).
·Produced the most marketable fruit

Yellow Buttercup

·From Sakata Seed
·Light green striped skin
·Yellow flesh
·Average fruit weight 12.0 lbs
·Average length 8.7 inches
·Round shape
·Taste tests rated it 2.5 out of 5
·In taste tests, it was viewed as a different taste than standard seedless watermelons. Tasted decent, more acidic or musky. Decent texture
·Produced 5,531 marketable fruit, 66,484 lbs, per acre and with 81% in the 60 count range (9.0-13.5lbs).
·Was second in number of marketable fruit produced

Thank you to Wallkill View Farms for hosting the trial!

Thank you to Sakata Seed, Vitalis Seed and Seminis Seed for contributing to our trial; and to Natasha Field, ENYCHP Technician, for compiling the data and reports

Onboarding Seasonal Farm Employees—Get Organized for 2021!

Attend a free 1.5-hour, on-line program **Best Practices for Onboarding Seasonal Workers in January.** Learn the key things you should have in place to be ready to welcome a group of seasonal workers. This program will follow an onboarding guide, **Onboarding Seasonal Farm Employees**, that was developed by Liz Higgins, CCE Eastern NY Commercial Hort Team, Mark Wiltberger, CCE Lake Ontario Fruit Program, and Richard Stup, CCE Ag Workforce Development Program. The onboarding guide covers:

- ✓ required paperwork and documentation for a new hire, including seasonal, migrant workers.
- ✓ required trainings (with an emphasis on fruit and vegetable farms) and guides for developing a training plan
- ✓ tips for bringing on new employees and having them productive from day 1, especially when you are up to your eyeballs in work!
- ✓ tips for creating a welcoming environment where employees feel connected to their workplace and competent on the job.

When you enroll in this program you will receive a hard copy of the guide by mail and be automatically enrolled in all follow-up education, networking and technical assistance offered by the Onboarding Seasonal Farm Employees Program to help you have an on-boarding plan ready by March 2021.

In February 2021 you will have access to 4-weeks of online, personalized assistance to finalize your 2021 plan. This program, **Developing Your Farm's Onboarding Plan for Seasonal Workers,** will be a combination of on-line webinars and resources from CCE, NYCAMH, NYS DOL and US DOL, and experienced NYS farmers; online discussion; and access to resources to help you as you get ready for 2021. You will also receive one-on-one technical assistance from CCE and Ag Workforce Development staff on your on-boarding plan and an opportunity to communicate with other farms in NYS who are working on their plans too. This program will be self-paced, so we can accommodate your schedule.

This project is supported by a grant from Northeast Extension Risk Management Education under USDA/NIFA award number 2018-70027-28588.

Sessions are planned for the first week of January – select the time that best accommodates your schedule. More classes may be added later.

To register, please go https://enych.cce.cornell.edu/events.php

PPP in NYS—How Did NYS Farms Do?

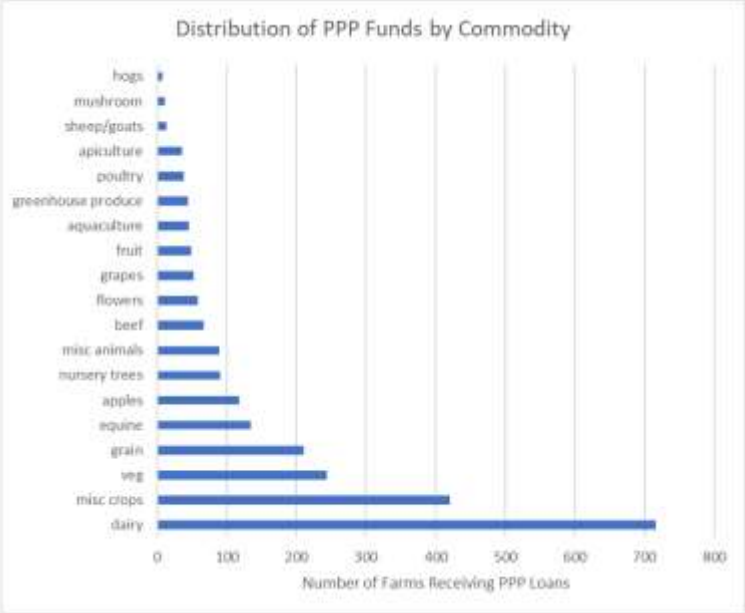
Elizabeth Higgins, CCE ENYCHP

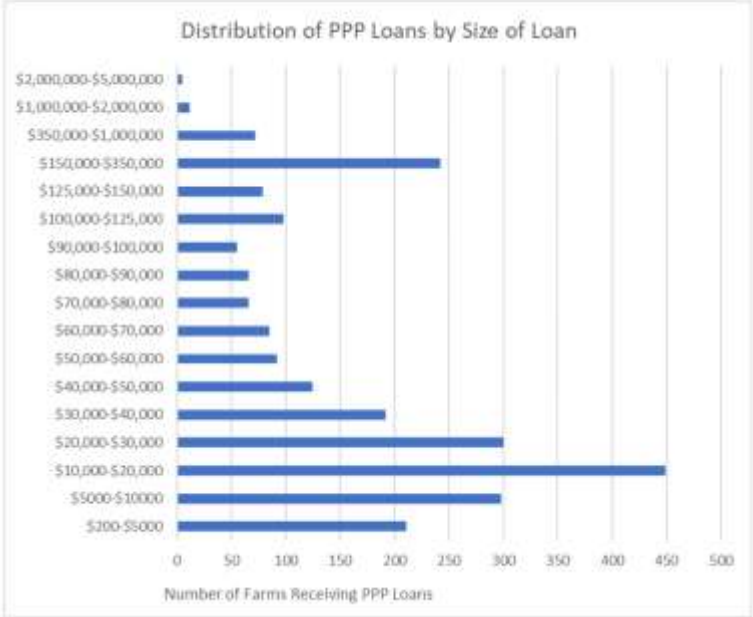
The Paycheck Protection Program (PPP) provided a huge boost to farms in NYS. According to US Treasury Dept data on the PPP program, based on NAICS codes, approximately 2447 NYS farms received PPP loans. Loans for $150,000 or over were only reported by ranges, so the exact amount that went to farms is unknown – however assuming that farms received the lowest amount possible in their range farms in NYS received at least $106,400,000 in PPP loans at or above $150,000 and $101,919,037 in loans under $150,000 for a total of at least $208 million!

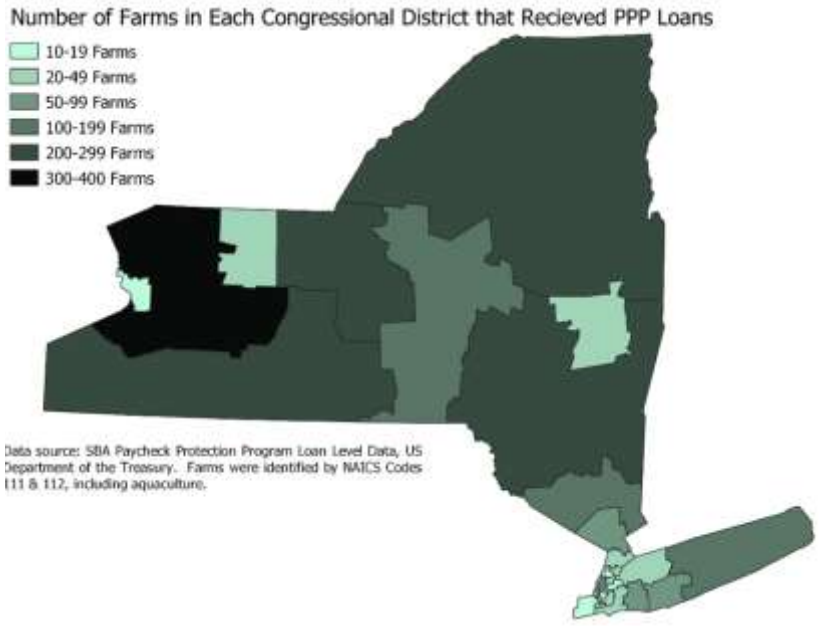
Most farms received small loans. 70% of the loans were less than $50,000. Only 14% of the loans were over $150,000 and only 4% were over $350,000. 17 farms or .07% of farms in NYS, received PPP loans greater than $1,000,000.

SBA has updated the information about PPP loan forgiveness. If you have questions about PPP loan forgiveness contact Liz Higgins at emh56@cornell.edu and I will try to steer you in the right direction.

Following are some charts for those of you who are curious about how the funds to farms were distributed:







[1] NAICS codes are provided by the applicant and based on a review of the data, are not 100% accurate. Also, farms that producemore than one type of commodity, or are also engaged in processing or marketing, only select one NAICS code that is intended to be representative of the business. Unless the business was divided into multiple legal entities, not all enterprises are necessarily reflected by the chosen NAICS code.

U.S. Horticulture Operations Report $13.8 Billion in Sales

News Release: National Agricultural Statistics Service

WASHINGTON, Dec. 8, 2020 – Today, the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) released the 2019 Census of Horticultural Specialties report, the only source of detailed production and sales data for floriculture, nursery, and specialty crops for the entire United States. The data show that horticulture operations sold a total of $13.8 billion in floriculture, nursery and specialty crops in 2019, down fractionally from the sales in 2014. The number of horticulture operations in the United States decreased 11% during this time to 20,655.

"First conducted in 1889, the horticulture census provides data on sectors for which there are no other comprehensive data sources," said NASS Administrator Hubert Hamer. "It is a valuable tool to highlight the contribution horticulture growers bring to our local, state, and national economies as well as changes in the industry over the past five years."

Horticulture production occurred primarily in 10 states, which accounted for 66% of all U.S. horticulture sales in 2019. California ($2.63 billion), Florida ($1.93 billion) and Oregon ($1.02 billion) led the nation in sales.

The top commodities in U.S. horticulture sales in 2019, and compared to 2014, were:

- Nursery stock, $4.55 billion, up 7%
- Annual bedding/garden plants, $2.24 billion, down 13%
- Sod, sprigs and plugs, $1.27 billion, up 12%
- Potted flowering plants, $1.2 billion, up 11%
- Potted herbaceous perennials, $923 million, down 2%
- Propagative horticultural materials, bareroot, and unfinished plant materials, $720 million, up 4%
- Food crops under protection, $703 million, down 12%

Other key findings from the 2019 Census of Horticultural Specialties report include:

- Family- or individually-owned operations made up the largest number of operations, accounting for 52%, but corporately-owned operations accounted for 75% of sales ($10.3 billion).
- Total industry expenses were up 6% since 2014, with labor being the largest cost, accounting for 42% of total expenses in 2019.

The Census of Horticultural Specialties is part of the larger Census of Agriculture program. It provides information on the number and types of establishments engaged in horticultural production, value of sales, varieties of products, production expenses and more. All operations that reported producing and selling $10,000 or more of horticultural crops on the 2017 Census of Agriculture were included in this special study.

For more information and to access the full report, visit www.nass.usda.gov/AgCensus.

Spotted Lanternfly, an Invasive Pest Threatening Grapes and Other Crops, Found in Ithaca, NY

https://www.northeastipm.org/index.cfm/ipm-in-action/current-news/spotted-lanternfly-found-in-ithaca-ny/

A population of spotted lanternfly (SLF) has been found in Ithaca, NY, just off the Cornell University campus.

They were found on their favorite host plant, another invasive species, tree of heaven (*Ailanthus altissima*). However, SLF also feeds on many other trees and plants, which, unfortunately, includes grapevines. With New York State's important Finger Lakes grape-growing region and wine industries so close to Ithaca, state agencies and researchers are particularly concerned about this pest's impact in the region.

SLF is not a fly, but rather a large planthopper. Adults are about an inch long. SLF does not bite or sting and is not a threat to people, pets, or livestock. For most New Yorkers, it will be no

(Continued on page 14)

(Continued from page 13)

more than a nuisance pest. Nymphal and adult SLF have piercing-sucking mouthparts that drill into plant phloem. SLF's excrement—a sappy liquid called honeydew—makes things sticky and becomes a breeding ground for sooty mold, an annoying black fungal growth.

While SLF is native to Asia, it was first found in the U.S. in Pennsylvania. As the pest has begun to spread to neighboring states, knowledge and experience from Pennsylvania's SLF researchers and specialists has been benefiting New York. Pennsylvania agriculture experienced losses of entire grapevine plants in some vineyards, and their economists estimate a potential combined annual loss to their state of $324 million and 1,665 jobs.

Because SLF is a significant agricultural pest, research is underway even now, as Cornell investigates biological control and other management options. The goal is to develop a holistic integrated pest management (IPM) strategy to combat spotted lanternfly, incorporating a variety of research-driven techniques to supplement the use of pesticides wherever possible. This will minimize the downsides of a pesticide-first strategy, which include detrimental effects on humans, pets, livestock, and other non-target organisms, as well as the development of pesticide resistance (and resulting loss of effectiveness) in the target pest.

The New York State IPM Program (NYSIPM) and the Northeastern IPM Center, in conjunction with the state's Department of Agriculture and Markets and Department of Environmental Conservation, have been preparing for SLF's potential arrival here for the last few years. In that time, we've developed educational resources to help recognize this insect and prevent its spread. Partnering with affected states, we've maintained a map tracking its spread and quarantines across the Mid-Atlantic and Northeast region.

To properly identify spotted lanternfly and understand its life cycle, its host plants, and how to monitor and manage it, visit:

StopSLF.org

Spotted Lanternfly IPM (NYSIPM)

"What Should I Do?"

If you think you see a spotted lanternfly, report it to New York State Department of Agriculture and Markets using the Spotted Lanternfly Public Report.

Check out the SLF life cycle, below, so you'll know what to look for. From fall through spring, look for egg masses. Some resources on egg masses:

Identifying Spotted Lanternfly Egg Masses (PDF)

What Should You Do with Spotted Lanternfly Egg Masses?

How to Remove Spotted Lanternfly Eggs

In late spring and early summer, look for the nymph stages. In late summer through fall, look for adults.

E. Swackhamer

PA Department of Agriculture

PA Department of Agriculture

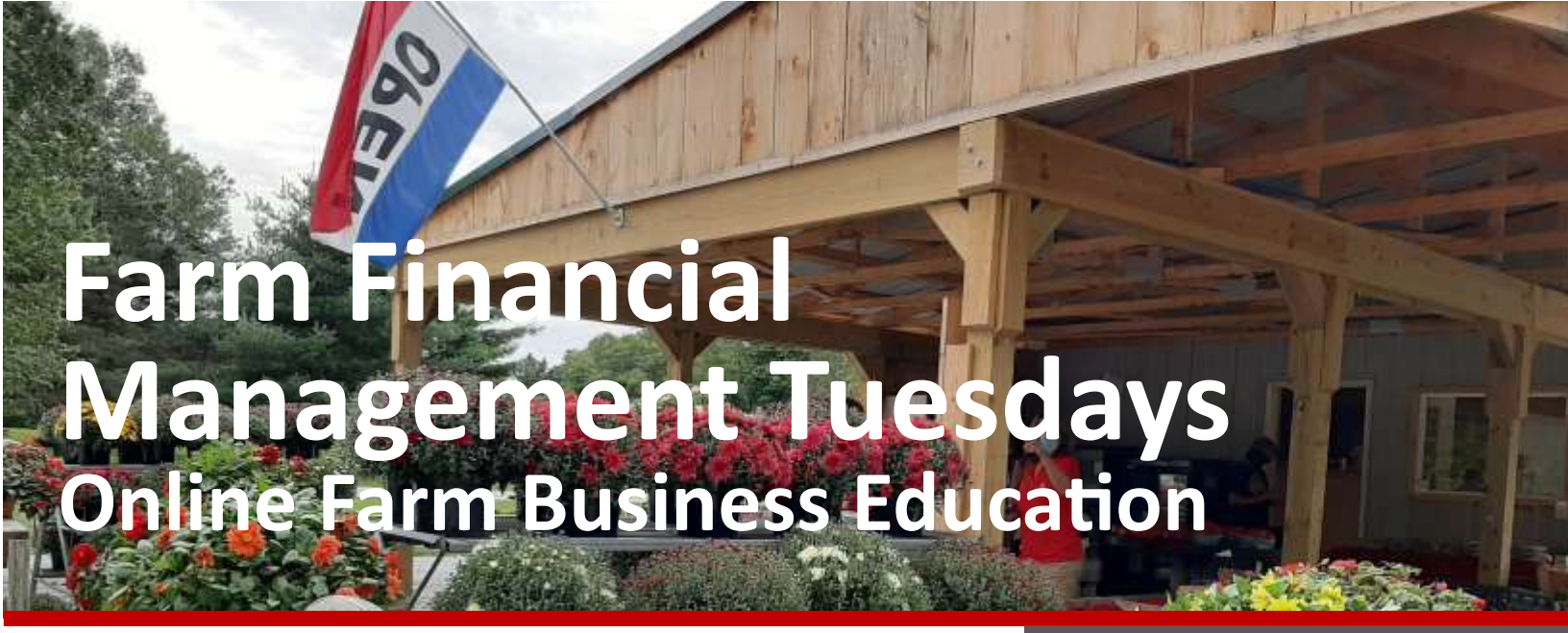
PA Department of Agriculture

PA Department of Agriculture

A. Egg masses
B. Early nymph
C. Late nymph
D. Adult, wings closed
E. Adult, wings open

Don't transport this pest. Individual and commercial travelers alike should be aware that there's significant potential to unknowingly spread this insect to new areas. Adult SLF can end up in vehicles. Egg masses can be laid on virtually anything and can be easily overlooked. Inspect anything that you load into your vehicle. Consult the NYSIPM checklist.

Northeastern IPM Center



Farm Financial Management Tuesdays
Online Farm Business Education

Tuesday, January 12,

Assessing and Using Credit in Your Agricultural Business

Dayton Maxwell, Jr. Capital District Horticulture Team

To register: https://enych.cce.cornell.edu/event.php?id=1488

Not all debt is created equal. Some loans leverage other people's money to help you make money, some loans just dig you further in a hole. Can you tell the difference? Join CCE CAAHP Ag Business Educator, Dayton Maxwell, for a one-hour program *Assessing and Using Credit in Your Agricultural Business*. Dayton is a former Farm Credit East loan officer and now serves as the Farm Business Management specialist for the Capital Area Agriculture and Horticulture Program. He will provide you insight into how lenders look at borrowers, what you should look for in a loan as a borrower, and how to position yourself to get good loans that can help you grow your business.

Tuesday, January 19

Knowing Input Costs to Maximize Profits

Nicole Tommell, Central NY Dairy and Field Crops and Gabe Gurley, FarmNet

To register: https://enych.cce.cornell.edu/event.php?id=1490

Although "it takes money to make money" - not all expenses in your business create value. On the other hand, underinvestment in your business, cutting costs that undermine the quality of your product or market, or that are detrimental to safety, your quality of life or your values can shoot you in the foot in the long run too. Knowing how to assess where to cut expenses to enhance profitability is an art form. Join CCE Central New York Dairy, Livestock & Field Crops Ag Business Educator, Nicole Tommell and NY FarmNet Business Specialist Gabe Gurley, for a one-hour program *Knowing Input Costs to Maximize Profits*.

Tuesday, January 26

Cash Flow Management and the Annual Operating Cycle

Elizabeth Higgins, Eastern NY Commercial Horticulture Team

To register: https://enych.cce.cornell.edu/event.php?id=1491

"If your business is a body, cash is the oxygen" without a constant influx of cash, no business can stay afloat, no matter how solid its starting idea or willing its market. Does your farm business have enough cash coming in, to pay your bills and cover your daily operating expenses? Can you access affordable cash, through other means to keep the business afloat during those times of the year when you don't have a crop coming in or a product to sell? Join CCE ENYCH Ag Business Educator, Elizabeth Higgins, to learn some tips and strategies for Cash Flow Management and the Annual Operating Cycle.

January 12
January 19
January 26
12:30pm-1:30pm

CCE ag business educators are offering short, farm financial education programs this winter. All programs are 12:30pm to 1:30pm. Each program is only $5 and includes a link to the recorded webinar if you cannot join the program live. This series is supported by ag business management specialists from the following Cornell Cooperative Extension and Cornell University programs: the Capital Area Agriculture and Horticulture Program, the Central New York Dairy, Livestock & Field Crops Team, the Eastern NY Commercial Horticulture Program, and NY FarmNet.

Cornell Cooperative Extension
Eastern NY Commercial Horticulture Program

Upcoming Events

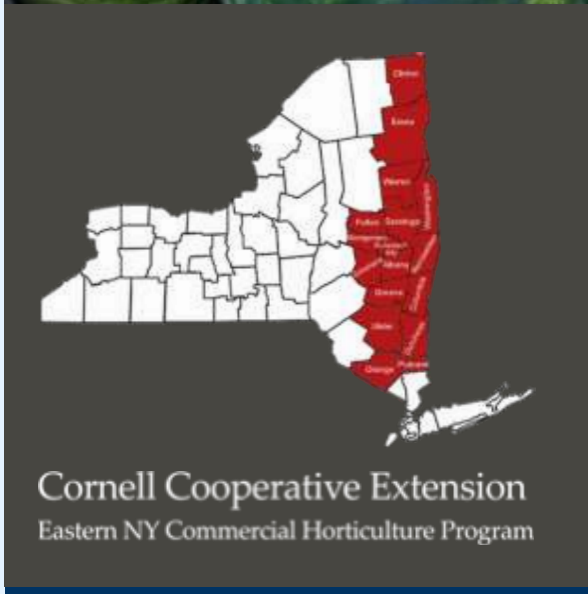
Transitioning to Supervisor Course

Cornell Agricultural Workforce Development has opened registration for a six-week course titled "Transitioning to Supervisor," which is part of a new Agricultural Supervisory Leadership certificate program. The course begins January 28 with an introduction to the curriculum and use of the web-based platform, Moodle. Cost is $275. Class size is limited to 30 participants.

This is the course you've been waiting for: how to lead people in your farm business! Learn the essential skills for supervising more effectively and creating a great place to work.

Link to Transitioning to Supervisor registration

Link for more information about the Agricultural Supervisory Leadership certificate program



Farm Financial Management Tuesdays
Tuesdays, Jan 12, 19, and 26, 2021
12:30pm-1:30pm via Zoom

CCE ag business educators are offering short, farm financial education programs this winter. All programs are 12:30pm to 1:30pm. Each program is only $5 and includes a link to the recorded webinar if you cannot join the program live. This series is supported by ag business management specialists from the following Cornell Cooperative Extension and Cornell University programs: the Capital Area Agriculture and Horticulture Program, the Central New York Dairy, Livestock & Field Crops Team, the Eastern NY Commercial Horticulture Program, and NY FarmNet.

Jan 12: https://enych.cce.cornell.edu/event.php?id=1488
Jan 19: https://enych.cce.cornell.edu/event.php?id=1490
Jan 26: https://enych.cce.cornell.edu/event.php?id=1491

Good Agricultural Practices (GAPs) Training and Farm Food Safety Plan Writing Workshop
Jan 27 & 28, 2021
Interested in learning more about the GAPs certification process? Do you need help writing your farm food safety plan?

Join CCE educators for a day long workshop on Day 1 delving into what is required to pass a GAPs audit, including worker hygiene, wash/pack sanitation, water quality, record keeping, and more. On the second day, we will split into small groups on Zoom to discuss the different parts of a farm food safety plan required for GAPs, some schools and other buyers, and recommended for FSMA. Educators will be accompanied by NYS Dept. of Agriculture and Markets representatives on Day 2 to help address questions on audits from participants. Participants will work on their plans concurrently within their groups and will have ample opportunity to ask questions and seek advice.

Previous attendance at a GAPs or Produce Alliance Grower Training course, as well as access to a computer with Microsoft Word or familiarity with using Google docs is required for Day 2 participation. Additionally, a microphone is recommended to facilitate interaction with instructors during plan writing on Day 2.

Link to register: https://pub.cce.cornell.edu/event_registration/main/events_landing.cfm?event=gapstrainingfoodsafetyplan_203

Questions? Contact Laura Biasillo (lw257@cornell.edu) or Elisabeth Hodgdon (eh528@cornell.edu / 518-650-5323) for more details.