Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

Vegetable News E-Alert ~ June 2, 2021

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Can I Replant into Holes Where Plants Got Eaten by Maggots?

by Crystal Stewart Courtens, CCE ENYCHP

The Capital District has been experiencing very high seedcorn maggot pressure in the last month, and many growers have lost both direct seeded and transplanted crops to these dastardly pests. The question on many folks' minds now is whether it's safe to replant transplants into the same holes. To find the answer we can look at growing degree day information for the area and match it to seedcorn maggot fly emergence.

At the beginning of May, at an arbitrary location in the capital district (Sprakers), we had accumulated 321 base 40 growing degree days. By May 31st, we had accumulated 789 growing degree days. The first flight happens at 354 growing degree days, so for most of the region peak flight was early to mid-May. At this point those larvae have either already pupated or are very close—the larvae we find now

are enormous and super gross! However, they are less damaging than their tiny, voracious counterparts that were killing off root systems and devouring seeds a couple weeks ago, since they are just about done eating.

The next flight will begin at 1080 growing degree days, which is going to be within the next couple weeks (estimates look like June 10-12). However, with so much plant material now available (including fields of corn and soybeans) seedcorn maggot pressure is generally lower on transplants than it was in the spring.

But wait, what about cabbage maggot? The good news is cabbage maggot only feeds on, you guessed it, brassicas, and we are past the emergence of the overwintered generation of these. The first real concern happens with the first spring flight, which is at around 1250 base 50 GDD (mid-late June). At that point growers will want to either use a systemic insecticide to protect transplants or cover them with rowcover at planting to prevent egg laying.

Take the Time and Do it Right

By Chuck Bornt, CCE ENYCHP

I know that sweet potato slips are being delivered shortly to many of you either later this week or early next week so it's time to remind ourselves how to get the most out of what we plant. I especially want to pay particular attention this year to number 4, the irrigation section, as it looks like we are going straight from early spring conditions to middle of the summer conditions early next week!

1) Fertility: sweet potatoes are not heavy nitrogen feeders and typically only require about 50 - 60 pounds of actual nitrogen – additional amounts can lead to more growth cracking and rough root appearances. Varieties such as Beauregard and Covington are less sensitive to the nitrogen levels, but still do not require much more than the recommended 50 lbs. They are however high potassium consumers requiring 150-200 pounds of actual potassium. Potassium helps ensure uniform roots and is essential for flavor and storability. Sweet potatoes require 60 pounds per acre of phosphorous, but these levels should be adjusted to your soil type and frequent soil nutrient testing.

2) Try to plant your slips as soon as you receive them—do not try to hold them for more than a couple of days. If you can't plant them right away, **do not put them in a cooler**—keep them in a cool, shady area. Coolers can be too cold and dry plants out resulting in the plants being injured. Do not leave them in the boxes in the sun either! If possible, open the boxes and spread your slips out if you can't get them planted right away.

3) **Do not "soak" your plants in water!** This does not help and usually only makes them slimy and encourages bacterial breakdown. If you need to hold your plants for more than 3 or 4 days, place them standing up in shallow trays filled with sand or potting mix and keep the media moist.

4) Make sure the beds you are planting in are moist and maintain good moisture for at least 7—10 days after planting to ensure the plants start to root well. This means running the drip if you use plastic or operating overhead sprinklers for several days after planting, especially if temperatures are going to be in the upper 80's -90's. Running the sprinklers for a couple hours a day, a couple times a day will reduce stress and allow plants to root quicker.

5) Planting is probably one of the most labor consuming issues with this crop. Personally, if you are planting on plastic mulch with a waterwheel, I think the standard spike leaves too large of a hole in plastic and is very slow. The slips don't necessarily need the water from the wheel if your beds are good and moist to begin with. I know if sounds crazy, but giving your crew a couple pieces of 3/8" – ½" rebar and letting them poke and plant is quicker and doesn't leave that huge hole in the plastic. To keep your spacing, you can attach a flag or piece of wood to the rebar and gauge it that way or eyeball it.

6) Along with #5, the deeper the hole when you plant the better. The rebar allows you to make the holes nice and deep (and straight, not at an angle like the waterwheel)! Make sure your slips are

planted as deep as you can get them without burying the growing point. Each node along the stem is potential for more yield!

7) Spacing: everyone uses different spacing but research we conducted several years ago indicated that when using beds mulched with black plastic (30—36" wide), using a single row down the middle of the bed 12—15" apart or a double staggered row (like for peppers) at 18" apart in the row and 12" between the rows worked best.

8) And finally – don't worry about the foliage that your plants come with – if you are new to growing sweet potatoes, you will think they are all dead after you plant as the foliage that comes with the plants wilts, turns yellow and half the time falls off – these plants are truly amazing and will root quickly and send out new growth quickly if conditions are right!

Manage Tomato Bacterial Diseases Before They Show Up

By Teresa Rusinek, CCE ENYCHP

Bacterial diseases of tomato are difficult to manage and maybe misidentified as fungal diseases. It's important to identify disease symptoms them so you can contain the outbreak and minimize losses. Bacterial speck, spot and canker have been increasing in occurrence and severity in northeastern United States. Bacterial canker is presently the most serious disease in production systems. Those who've had these diseases in their fields in the past three years are at greater risk this year as the bacteria persist in soils, on stakes and in transplant production areas. Below are some tips on identification and management of these bacterial diseases.

Bacterial Speck on tomato fruit and leaves. Photo: T. Rusinek

Bacterial Canker. Note the marginal necrosis on the leaves and Bird's Eye spots on the fruit. Photo: T. Rusinek

Controlling Bacterial, Speck, Spot and Canker:

Tanos when tank-mixed with full rate of copper fungicide has some suppressive activity on Speck, Spot and Canker. Copper plus mancozeb or ManKocide (a premix of mancozeb + copper hydroxide) has shown similar activity. The addition of the mancozeb increases the effectiveness of the copper by

releasing more of the copper ions. Gavel is also labeled due to the mancozeb component of the material but must also be mixed with high rate of fixed copper. In an organic system the grower is limited to OMRI approved copper compounds such as Champ or Cueva, also approved are: BacStop, Double Nickel, Oxidate and Regalia.

Trials conducted at Cornell found Actigard, used at the 0.75 oz. /A applied at 100 gpa on a 7-day schedule, to provide excellent control of bacterial speck without a reduction in yield. It takes at least three days for Actigard to induce plant defenses, so it is necessary to begin applications *before* symptoms appear on the plant. Actigard is not approved for organic production. LifeGard which *is* approved for use in organic production, has a similar mode of action as Actigard. Both are plant activators that induce plant resistance.

Identifying and Controlling Botrytis in High Tunnel and Greenhouse Tomato Production

Source: Andy Wyenandt, Rutgers Cooperative Extension Plant & Pest Advisory,

May 25, 2021

Editor's note: I thought this article was timely as last week I was in one greenhouse and one high tunnel with tomatoes showing symptoms of Botrytis or gray mold. I have included a table below with the products that are labeled for botrytis control in greenhouse/high tunnels for NYS. There are other products listed in the Cornell Vegetable Guidelines, but many of those are for field use only. I also feel that it is important to note that botrytis gray mold has the potential to develop tolerance/resistance to fungicides very quickly. For that reason, it is important that you pay attention to the FRAC (Fungicide Resistance Action Committee) Codes not only in the table, but also on all fungicide labels. These codes are important in guiding chemistry rotation and modes of action in an effort to reduce the chance of developing resistance.

Botrytis, or gray mold, caused by the fungus, *Botrytis cinerea*, can cause significant losses in high tunnel and greenhouse tomato production if not controlled properly. The pathogen can rapidly spread during periods when structures are closed and when relative humidity remains high for long periods of time. This often occurs when outside weather remains cool and damp while heating is needed. Gray mold is favored by temperatures from 64° to 75°F and requires only high humidity (not leaf wetness) to become established. The pathogen has a large host range and once established in an enclosed structure it can be very difficult to control (UMASS). The fungus can survive/overwinter as mycelia or sclerotia in plant debris and in organic soil matter (NCSU).

Botrytis is ubiquitous (e.g., found everywhere) and prefers to attack senescing or injured plant tissue. *Botrytis cinerea* is an excellent saprophyte as well as a pathogen. This means that any dying or dead tissue on tomato plants (or any other plant in the structure) can easily become infected. The pathogen will attack flowers, fruit (at the stem end of infected fruit or by causing ghost spot), leaves, and stems; importantly, plants that have recently been suckered or pruned. Stem infections occur during periods of high humidity through leaf scars, cracks, and pruning wounds. Spores can remain dormant for up to 12 weeks within pruning leaf scars and are triggered to germinate during plant stress. Stem lesions may expand in concentric rings to girdle the entire stem causing wilting above the infection site (NCSU).
Botrytis can be controlled by management of environmental conditions, sound cultural practices, and fungicide applications.

As stated above, gray mold is favored by temperatures from 64° to 75°F and requires only high humidity (not leaf wetness) to become established. Keep relative humidity as low as possible by a combination of heating and venting in the evening, particularly when warm days are followed by cool nights. Maintain adequate air flow with horizontal fans. Avoid the overcrowding of plants. Maintain proper fertility programs. Run regular tissue tests. Gray mold is known to be favored by low calcium levels. In particular, calcium to phosphorus levels of less than 2:1 may make the tomato plant more susceptible to gray mold (UMASS). Keep floors and structure clean of any plant debris or organic

matter. All pruned plant material needs to be removed immediately. Do not work on wet plants, prune plants in the early afternoon allowing wounds to dry quickly (NCSU).

Control options
Controlling Botrytis begins with proactive cultural practices, recognizing conditions which are conducive for its development, and symptoms on infected plant materials. There are a number of conventional and organic fungicides labeled for its control in the greenhouse and high tunnel. (Editors note: The materials labeled in NYS can be found below in Table 1. This is not a comprehensive list. Please be sure to read the label before using). Additional biopesticides can be found in Cornell Plant Pathologist Margaret McGraths list at: https://www.vegetables.cornell.edu/ipm/diseases/biopesticides/biopesticides-for-managing-diseases-of-tomatoes-organically/

For images and more information visit these website:
Cornell: https://blogs.cornell.edu/livegpath/gallery/tomato/tomato-gray-mold/
NCSU – https://content.ces.ncsu.edu/botrytis-gray-mold-of-tomato
UMASS – https://ag.umass.edu/greenhouse-floriculture/photos/greenhouse-tomato-ghost-spot-botrytis
DEPI – AU – http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/plant-diseases/vegetable/tomato-diseases/grey-mould-botrytis-in-greenhouse-tomato-crops
Ingram and Meister, 2006 – Plant Health Progress: – https://www.plantmanagementnetwork.org/pub/php/research/2006/botrytis/

Table 1: Fungicides labeled on Tomatoes for Botrytis Gray Mold

Product Name	FRAC No.	Rate	REI/PHI
Scala SC (pyrimethanil)	9	7 fluid ounces/acre	12/1
Decree 50 WDG (fenhexamid)	17	1.5 lbs/acre	12/0
Luna Tranquility (pyrimethanil + fluopyram	9 & 7	11.2 fluid ounces/acre	12/1
Pageant Intrinsic (pyraclostrobin + boscalid)	11 & 7	23 ounces/acre	12/0
Emblem (fludioxonil)	12	5.5-7.0	12/0
Actinovate (*Streptomyces lydicus*) OMRI listed	BM02	3-12 ounces per acre (use spreader sticker)	4/0
Stargus (*Bacillus amyloliquefaciens*) OMRI listed	BM02	1-4 quarts per 100 gallons of water	4/0



Botrytis Gray Mold symptoms – the disease can infect any portion of the plant but is probably most noted on leaves, flowers and eventually fruit. (Source: https://blogs.cornell.edu/livegpath/gallery/tomato/tomato-gray-mold/)

Considerations for Using Foliar Fertilizers in Vegetable Crops

By Ethan Grundberg, CCE ENYCHP and Dr. Gordon Johnson, University of Delaware

The variable spring weather combined with recent heavy rains in much of the southern portion of the Eastern NY region has some growers concerned about nutrient availability to their vegetable crops. Foliar fertilizers, especially nitrogen fertilizers, have their limitations, but can help stressed crops dealing with saturated soils rebound and thrive. Dr. Gordon Johnson of the University of Delaware has authored a great resource covering the considerations and constraints of foliar fertilizer applications for vegetable crops; check it out at https://sites.udel.edu/weeklycropupdate/?p=8837. Here are a few key points from his article:

- "The waxy [leaf] cuticle serves to control water loss from leaf surfaces, it does contain very small pores that allows some water and small solute molecules to enter into the underlying leaf cells. These pores are lined with negative charges. Fertilizer nutrients in cation form or with neutral charges enter most readily through these channels: this includes ammonium, potassium, magnesium, and urea ($NH4+$, $K+$, $Mg++$, CH_4N_2O respectively). In contrast, negatively charged nutrients (phosphate-P, sulfate-S, molybdate-Mo) are much slower to move through the cuticle (they must be paired with a cation)."

- "Tightly held nutrients include Calcium, Manganese, Iron, Zinc, and Copper ($Ca++$, $Mn++$, $Fe++$, $Zn++$, $Cu++$). Therefore, when applied as foliar fertilizers, calcium does not move much once it enters plant tissue, the negatively charged nutrients such as phosphorus and sulfur are very slow to enter the plant, and iron, manganese, copper, and zinc are slow entering and do not mobilize once in the plant."

- "Foliar applications of nitrogen (N) can benefit most vegetables if the plant is low in N. Urea forms of N are the most effective; methylene ureas and triazones are effective with less injury potential; and ammonium sulfate is also effective. Recommended rates are 1-10 lbs per acre."

Are 17-Year Cicadas a Risk to NY Fruit and Vegetable Farms This Year? Not Likely

By Elisabeth Hodgdon, CCE ENYCHP

Insects don't often take the spotlight in the na onal news, but cicadas are a hot topic this summer. Brood X (the X is a Roman numeral "ten") cicadas are emerging this spring in the Eastern U.S. These insects last emerged in great numbers in 2004. The emergence is occurring mainly in the Midwest (IL, IN, MI, and OH), Mid-Atlan c (Washington DC, DE, MD, NJ, PA, WV, and VA), and in the South (GA, KY, and TN). While Long Island used to host emergences of this brood, their 2004 appearance was small, sugges ng that there will be few, if any, this year. It is unlikely that the ENYCHP region will see any of these cicadas.

Readers south of the ENYCHP region may need to protect their fruit crops if they are situated in an emergence area. Cicadas lay their eggs into slender woody branches. Branches of fruit trees, blueberries, brambles, and other woody fruit crops can be weakened and killed from this ac vity. Vegetable growers do not need to worry—cicadas do not pose a risk to these crops. Netting or insec cide (such as pyrethroid) applica on may be needed to protect young suscep ble trees. Consult the product label before applying any insec cide.

For more informa on:
NY Missing Out on Emergence of Billions of Cicadas, by R. Karlin, Olean Times Herald. Apr. 19, 2021.
Tree Fruit Insect Pest – Periodical Cicada, by G. Krawczyk, Penn State Extension.

Producers with Crop Insurance to Receive Premium Benefit for Cover Crops

New Pandemic Cover Crop Program Helps Producers Continue Cover Crop Systems

WASHINGTON, June 1, 2021 – Agricultural producers who have coverage under most crop insurance policies are eligible for a premium benefit from the U.S. Department of Agriculture (USDA) if they planted cover crops during this crop year. The Pandemic Cover Crop Program (PCCP), offered by USDA's Risk Management Agency (RMA), helps farmers maintain their cover crop systems, despite the financial challenges posed by the pandemic.

The PCCP is part of USDA's Pandemic Assistance for Producers initiative, a bundle of programs to bring financial assistance to farmers, ranchers and producers who felt the impact of COVID-19 market disruptions.

"Cultivating cover crops requires a sustained, long-term investment, and the economic challenges of the pandemic made it financially challenging for many producers to maintain cover crop systems," said RMA Acting Administrator Richard Flournoy. "Producers use cover crops to improve soil health and gain other agronomic benefits, and this program will reduce producers' overall premium bill to help ensure producers can continue this climates-smart agricultural practice."

About the Premium Benefit

PCCP provides premium support to producers who insured their spring crop with most insurance policies and planted a qualifying cover crop during the 2021 crop year. The premium support is $5 per acre, but no more than the full premium owed.

All cover crops reportable to FSA are eligible and include cereals and other grasses, legumes, brassicas and other non-legume broadleaves, and mixtures of two or more cover crop species planted at the same time.

To receive the benefit for this program, producers must file a Report of Acreage form (FSA-578) for cover crops with USDA's Farm Service Agency (FSA) by June 15, 2021, which is distinct from the normal acreage reporting date. The normal acreage reporting deadline with FSA has not changed, but to receive the premium benefit, producers must file by June 15. The cover crop fields reported on the Report of Acreage form must match what the producer reported to their insurance company for crop insurance policies. To file the form, producers must contact and make an appointment with their local USDA Service Center.

Program Details
Certain policies are not eligible because they have underlying coverage, which would already receive the benefit or are not designed to be reported in a manner consistent with the Report of Acreage form (FSA-578).

PCCP does not change acreage reporting dates, reporting requirements, or any other terms of the crop insurance policy.

More Information
A Notice of Funding Availability was posted on the *Federal Register* today. Additional information on PCCP, including frequently asked questions, can be found at farmers.gov/pandemic-assistance/cover-crops.

Reminder: Farmers' Market Promotion Program Applications are Due June 21! Webinar on June 7

By Elizabeth Higgins, CCE ENYCHP

The USDA Farmers Market Promotion Program Grant can do much more than fund farmers markets. Agritourism initiatives, CSAs, roadside stands, and online sales are all eligible. The key is direct to consumer sales. If you have any questions, contact Elizabeth Higgins emh56@cornell.edu. I will hold an evening webinar on Monday June 7th at 6:30 to go over the program and answer questions you may have on it. I have reviewed proposals for this program in the past and can help you

determine if your project could be competitive. To register go to: https://cornell.zoom.us/webinar/register/WN_WttL5lDhRgOrX09f2km6cQ

The Farmers Market Promotion Program (FMPP) funds projects that develop, coordinate and expand direct producer-to-consumer markets to help increase access to and availability of locally and regionally produced agricultural products by developing, coordinating, expanding, and providing outreach, training, and technical assistance to domestic farmers markets, roadside stands, community-supported agriculture programs, agritourism activities, online sales or other direct producer-to-consumer (including direct producer-to-retail, direct producer-to-restaurant and direct producer-to-institutional marketing) market opportunities.

Entities that are eligible to apply include:

- Agricultural businesses and cooperatives
- Community Supported Agriculture (CSA) networks and associations
- Food Councils
- Economic development corporations
- Local governments
- Nonprofit and public benefit corporations
- Producer networks or associations
- Regional farmers' market authorities
- Tribal governments

Additional Information
The deadline for submitting applications for the 2021 Request for Applications is June 21, 2021 at 11:59 p.m. Eastern time. See https://www.ams.usda.gov/services/grants/fmpp (usda.gov) for more information.

Farmers' Markets in Need of Products

Port Jervis Farmers' Market is looking for beef/pork
June 5th. Saturdays, 10-1
pjfarmersmarket@gmail.com
Common Ground – Newburgh is looking for produce
June 12, Saturdays, 9am-2pm
845-231-4424, market@commongroundfarm.org

Corn Trap Counts

County	ECB-E	ECB-Z	FAW	WBC	CEW
Albany	0	0	0	0	N/A
Clinton 1	0	0	0	0	0
Clinton 2	0	0	0	0	0
Dutchess	0	0	N/A	N/A	0
Essex	0	0	0	0	0
Orange	0	0	N/A	N/A	0
Ulster 1	0	0	N/A	N/A	0

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