Cornell University ~ Cooperative Extension
Eastern NY Commercial Horticulture Program

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Weekly Vegetable Update

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Regional Updates

North Country – Clinton, Essex, northern Warren and Washington Counties:

Summer weather continued this week to bring along many crops that had been languishing. Growers who got a sidedressing of nitrogen on just before a rain event saw a huge improvement in plant vigor. One grower with leaf spot on his table beets reported improvements after a foliar application of boron, a nutrient beets are often lacking. The boron doesn't cure the disease but the beets responded with a surge of foliage growth.

Capital District – Albany, Fulton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, southern Warren and Washington Counties:

Warm, mostly dry weather in the Capital district has been pushing growth of warm season crops along really nicely, and seems to be keeping disease spread slow. Downy mildew continues to spread through cucumber plantings, but as not shown much advancement on other cucurbits. We have had just enough rain to keep powdery from really exploding in most areas. Pumpkins are sizing nicely, though in some places fruit set is a bit spotty.

Japanese beetles (Popillia japonica) adults are about half an inch long, with a metallic green head.

Potatoes seem to have sized quite nicely, though there were some yield decreases where leaf hoppers were not controlled. Late blight spread seems to have stopped for the moment, though we expect that another period of wet weather could change that, and advise growers to stay on guard.

Onions are looking good across the region, and garlic should have all been moved from drying areas into storage areas, which have cooler temps and dramatically slow the weight loss process. Shoot for temps below 75 and 70% RH to slow growth of surface molds.

Mid-Hudson Valley- Columbia, Dutchess, Greene, Orange, Putnam, and Ulster Counties:

Hot weather has continued to persist throughout the region with temperatures approaching record highs on a couple occasions. A large weather front delivered some much-needed rain showers, with many locations receiving an inch or more. Additional, localized showers followed in some areas. Over the past week I have seen a drastic

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Regional Updates, continued from last page

increase in onion thrips populations in some fields. Although onions can tolerate higher populations closer to harvest, yield reductions are still possible and so is transmission of the center rot pathogen. Leafminer adults are highly active in Orange County. On 8-18 many leafminer adults were sighted meaning that another round of larvae and damage is on the horizon. A slight bit earlier than predicted in the last newsletter but it has been warm. Refer to the article in the 8/13 issue, #17 for more information on this pest. Other issues have included the aphid-transmitted southern celery mosaic virus and powdery mildew on summer squash. Overall, disease and insect pressure remains fairly low. There have not been any reports of Late blight (other than the one from about a month ago in Ulster County) or Downy mildew in cucurbits in our region over the past week though we are at high risk for these serious diseases, so do not let your guard down! Japanese beetles remain active in some fields , beans are where I have noticed them especially heavy, so keep on the look out.

Powdery mildew on yellow crookneck squash. Photo: KB

Why Keep Records?

One of the most difficult aspects of food safety for most farms is record keeping. With the schedule as busy as it is and labor not always easy to hire, why spend extra time writing down what you're doing? The number one reason to keep records (of worker training, cooler temperatures, pick lists, etc.) is to reduce your liability as a business. Whether you want to get a GAPS certificate or not, the more records you have the better prepared you are in the event that there is a foodborne outbreak and you are investigated by the FDA. Keep in mind, there are several instances in which these kinds of records have actually cleared farms of blame. The more records you keep, the better you are able to prove what you did. The second best reason is for better functioning of your business. There have been cases where buyers call back saying that a shipment was of bad quality or went bad early and because of records the farm was able to show that it was the buyer who had the wrong lot. Many of the records such as harvesting records, irrigation and spray records, and field lot number records, can help you better understand what commodities are selling better at which markets and to which wholesale buyers. Most farmers feel that taking records is too time consuming, but once the system is in place it only takes a couple minutes per day, and the value it brings is well worth it. - ES

Fungicides That Can Be Applied In Tunnels

Many pesticides have a statement on the label prohibiting their use in greenhouses because it is an enclosed structure. Tunnels are similar structures but typically differ from greenhouses in an important way: they have sides that can be rolled up. If a tunnel has sides that can be opened most of the way up and these sides are open during an application and are left open through the duration of the REI, then pesticides permitted for use only in field-grown crops can be applied in the open tunnel.

NYS DEC interprets an open tunnel to not fit the definition of greenhouse under the WPS. Worker safety is one reason that pesticides are not permitted used in greenhouses: the spray cannot readily dissipate in an enclosed structure. Concern about resistance development in pathogens is the main reason for prohibiting use of many targeted fungicides with high risk for resistance to develop, which is more likely to occur in a population that is isolated by being in a greenhouse. (Source LI Fruit and Veg Update No,20 August 13, 2015)

When to Spray?

When rains come heavy and strong winds accompany them, the damage that can be caused often has growers wondering whether they should spray fungicides & bacteriostats before or after the events. Here are a few details and suggestions to help make that decision be more effective.

Fungicides come in 2 basic categories, preventative and curative. Preventatives are designed to control immediately on the leaf surface by either killing or prevent from infecting and reproducing. The fungicide acts as a protective barrier and prevents infection from occurring. This is preventative in that it does not cease any infection that may have already started in the plant it can only prevent new infections. Most preventative fungicides are contact as described above but some are some level of systemic in that they can prevent infections other than where the droplet of fungicide contacted the leaf surface. Systemic fungicides travel through the cells of the plant to provide protection elsewhere. It can be close, just neighboring cells, or it can spread through the whole plant. This depends on the specific chemical.

Curative fungicides are not REALLY curative. They can, unlike preventative fungicides, slow or stop if colonization has already started for a disease. However, the window for control is still fairly small, up to 72 hours after infection has started. These fungicides, too, are most effective if applied before the infection occurs. A curative fungicide tends to be more likely systemic and will have a longer efficacy time in the plant; some up to 2 weeks.

Then we have copper. Copper formulations are adequate as fungicides for some diseases but, usually, compared to conventional fungicides are not effective when used alone. However, because there are so few chemicals in the tool-box for bacteria control, they are often the "go-to" to add to a mix when bacterial infections are occurring/likely to occur. For most crops and bacterial pathogens copper control can be ineffective also, but it is all we have. So for the section below, even though copper is used as a fungicide, I will refer to it separately, mostly with regard to bacterial disease control.

General Suggestions:

Fungicides should be applied BEFORE rain events, especially if it has exceeded the recommended spray interval for the chemical/crop/disease. Exception: you expect more than 1" of rain in the event. If possible, apply the fungicides immediately after the rain event. This is where the complex decision-making comes in to play only you know how 1", 2", 3" of rain will impact field conditions to actually be able to go out and spray following the predicted event. If you will not be able to spray within 24 hours of the event, go back to considering spraying BEFORE the event.

If more than 1" of rain has fallen, even if spreaders/stickers were used, consider fungicides "washed-off" and that the spray interval begins again.

Copper should, when used as a bacteriostat, be applied before the rain event as well. The idea here is to decrease the bacterial load on the plant before the improved conditions for reproduction and spread/splashing occur with the moisture. Of course, not all times is this possible so, especially when wounding has happened such as during a hail event, it is critical to apply the copper as soon as possible to keep bacteria from gaining entry.

Of course the biggest factor in all of this is the weather immediately after the rain. If humidity and temperatures decline significantly after the event, "good drying weather " , it will decrease the ability of the disease to develop. -MU

USDA Agriculture Marketing Service Organic Cost Share

Program - Deadline Sept. 30:

If you are a certified organic farmer or rancher in the Northeast, you are eligible to receive a 2015 organic certification cost share reimbursement. Funded by the 2014 Farm Bill, these programs provide cost share assistance to USDA certified organic producers and handlers, covering as much as 75 percent of an individual applicant's certification costs, up to a maximum of $750 annually per certification scope.

To receive cost share assistance, certified organic producers and handlers should contact their appropriate state agencies via the contact information on the National Organic Program's (NOP) cost share website: http://www.ams.usda.gov/services/grants/occsp. Each state has its own guidelines and requirements for reimbursement, and NOP assists states to successfully implement the programs.

Calendar of Events

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TONIGHT! Thursday, August 20th - Tomato Variety and Disease Twilight Meeting at the Hudson Valley Farm Hub, 1875 Hurley Mountain Road, Hurley, NY 12443. 5:30– 7:00 pm.

Join Eastern NY Commercial Horticulture Vegetable specialists and Margaret McGrath from the Cornell LI Research Extension Center to tour the tomato disease resistance trial at the Farm Hub. Help us evaluate 10 new tomato varieties being developed by Cornell University plant breeder Dr. Martha Mutschler. We will tour the variety trial, taste tomatoes, and discuss tomato diseases and management. Registration is not required. There is no fee for this program. This meeting will be held rain or shine. 1.5 DEC pesticide applicator credits are available to those attending the full 1.5 hours of the program. For more information contact Teresa Rusinek at 845-389-3562 or tr28@cornell.edu

Tuesday, September 29—Root Crops Twilight Meeting at the Hudson Valley Farm Hub, 1875 Hurley Mountain Road, Hurley, NY 12443. 5:00– 7:00 pm.

This program includes: demonstrations of growing methods in raised beds and ridged cultivation; variety selection for beets, carrots, and parsnips, with 25 varieties of carrots and 15 varieties of beets. Registration is not required and there is no fee for this program. This meeting will be held rain or shine. 1.5 DEC pesticide applicator credits are available to those attending the full 2 hours. For more information, contact Crystal Stewart at 518 775-0018 or cls263@cornell.edu

Sweet Corn Pest Trap Catches

(Last Week ending 8/10 This Week ending 8/17/15)

Location	ECB-E Last Week	ECB-E This Week	ECB-Z Last Week	ECB-Z This Week	CEW Last Week	CEW This Week	FAW Last Week	FAW This Week	WBC Last Week	WBC This Week
Central Clinton	3	N/A	0	N/A	0	N/A	0	N/A	36	N/A
South Clinton	0	0	0	0	0	0	0	0	17	23
Orange County	0	0	0	0	0	0	7	0	5	0
Central Ulster	2	1	0	0	0	3	18	4	9	1
Northern Ulster	30	68	0	0	1	0	N/A	N/A	N/A	
Northern Washington	2	19	0	2	0	1	1	0	0	2
Southern Washington	0	4	1	2	0	0	N/A	N/A	N/A	N/A
Albany County	4	2	0	0	0	0	5	0	0	9
Fulton County	0	0	0	0	0	0	N/A	N/A	N/A	N/A
Schoharie County	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Northern Columbia	0	1	0	1	0	0	4	20	58	3

2015 Weather Table—The weather information contained in this chart is compiled using the data collected by Network for Environment and Weather Applications (NEWA) weather stations and is available for free for all to use. For more information about NEWA and a list of sites, please visit http://newa.cornell.edu/ This site has information not only on weather, but insect and disease forecasting tools that are free to use.

2015 Weekly and Seasonal Weather Information

	Growing Degree Information Base 50^{O} F			Rainfall Accumulations		
Site	2015 Weekly Total 8/10 - 8/17	2015 Season Total 3/1 - 8/17	2014 Season Total 3/1 - 8/17	2015 Weekly Rainfall (inches) 8/10 - 8/17	2015 Total Rainfall (inches) 3/1 - 8/17	2014 Total Rainfall (inches) 3/1-8/17
Albany	169.6	2175.2	1830.7	2.47	16.2	18.85
Castleton	346.8	2689.2	1870.9	1.29	17.45	18.7
Clifton Park	164.0	2085.2	1799.1	1.47	14.42	19.18
Fishkill	160.7	2078.0	Na[1]	0.05	5.24	Na[1]
Glens Falls	149.5	1863.1	1779.0	1.34	14.53	22.22
Griffiss	149.0	1743.2	1657.5	1.35	21.14	24.94
Guilderland	156.5	1956.5	1811.5	0.98	15.53	Na[2]
Highland	166.5	2193.2	1992.5	1.55	16.06	22.27
Hudson	169.3	2178.9	2000.1	1.71	15.04	25.41
Marlboro	164.2	2105.4	1915.8	1.04	13.65	21.14
Montgomery	166.6	2150.8	1948.0	0.38	16.14	18.51
Monticello	132.3	1681.6	1531.6	0.13	13.05	8.29
Peru	141.0	1756.3	1698.8	0.82	16.88	20.47
Red Hook	162.1	2075.2	1956.5	1.16	16.4	11.75[3]
Wilsboro	140.8	1713.1	1637.3	0.64	21.3	11.05
South Hero, VT	150.2	1830.8	1764.0	1.24	19.35	21.45
N. Adams, MA	143.5	1688.1	1590.0	2.21	17.53	19.47
Danbury, CT	158.6	1987.1	1803.5	0.94	17.76	21.19

Na[1]: The Fishkill site is new for 2015 so there is no historical data to report.
Na[2]: The Guilderland weather station was not properly reporting precipitation data in 2014 so no data will be shown for this site.
Na[3]: Precipitation data for this site did not start until May of 2014.