

Cornell University ~ Cooperative Extension Eastern NY Commercial Horticulture Program

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Weekly Vegetable Update

Note from the Editor: As the season begins to wind down, the Veg Update will be sent every other week for the months of September and October. If anything urgent comes up in the weeks between, we'll send out alerts. Wishing all a successful harvest!

Regional Updates

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

We are in a long stretch of ideal growing conditions and crops are thriving. Last week was sunny, dry and warm, and this coming week is forecast to be sunny, dry and hot. Crops are getting dry so irrigation will really help the fruits, which are mostly water, to size up. Eggplant and peppers are doing especially well now. **Imported cabbageworm** is having a very good year in all the **brassicas**, the adult stage is that white butterfly flitting around the crop. Swede midge has ruined some Brussels sprouts plantings and is also damaging fall kale and broccoli. This pest is new to our region, please let Amy know if you suspect you have it. The dry weather has also slowed some diseases and we still have no confirmed cases of late blight in Clinton or Essex Counties.

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

I don't think I have to remind everyone that we are entering September this week which means that the days are getting shorter and so is the 2015 season! It's hard to believe but it's true as the days become shorter and we begin to see the harvest begin of pumpkins, winter squash and apples! The word for this week again is dry, dry and drier. As much as many of you want to probably stop watering, if you have late tomatoes, peppers and other fruiting crops you need to continue to water to maximize their production. The fruit has probably already been set, now it's just time to finish sizing them up and preventing environmental disorders like blossom end rot and sun scald. It's also probably time to think about cleaning out storages and making sure that coolers are up to operating speed if you are storing any crops like potatoes, winter squash and onions.

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

Abnormally hot and dry weather continues to persist in our region, causing irrigation to run overtime. Harvest of seeded **onions** is just beginning to pick up and will be in full swing in the coming weeks. Early harvests of winter squash, including butternut and kabocha, is also underway. Corn earworm numbers are at fairly high levels in Orange County and recommendations suggest following a 4-day spray schedule.

I have also seen damping-off affecting some **spinach plantings** in the area. In spinach, damping off is typically caused by the water mold *Pythium* or the fungus

Continued on next page

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

Regional Updates, continued from last page

Rhizoctonia and is characterized by seedling death before or shortly after emergence from the soil. Although favored by cool and moist conditions, damping-off can occur in the presence of warm weather with frequent irrigation. Replanting spinach several times in the same field throughout the season can also lead to damping-off issues. For control, consider using treated seed and applying a fungicide at, or prior to planting. For control in organic

production systems, *Trichoderma harzianum* strain T-22 (RootShield) has shown efficacy in reducing damping-off through competitive exclusion and mycoparasitism.

In tomatoes we've seen stink bug and fruit worm damage in a number of plantings. Tomato fruitworm is actually the same critter as corn earworm (CEW), Helicoverpa Zea, so watch the CEW trap counts in the Sweet Corn Pest Trap Chart in our newsletters to find out if the moths are flying in your area. Insecticide sprays can be tricky now as harvest is in full swing. Check the Pre- Harvest Interval (PHI). Baythriod XL is one example of a pyrethriod labeled for both stink bugs and fruit worm, it has a 0 day PHI and 12 hour Re-entry Interval. Pyrethriods generally don't

provide much residual activity particularly

during hot weather so watch for successive populations that may need additional control measures. Bt products such as DiPel Df and Javelin are also labeled for fruitworm but will only control the small ones. See the following article on Brown Marmorated Stink Bug for more information.

Cucurbit Downy Mildew is in the area, it's been found in cucumber and squash. All cucurbits, except for watermelon, are highly susceptible to this disease.



Credit: Daniel Gilrein Long Island Horticultural Research & Extension Center

The Brown Marmorated Stink Bug Update

Up until this point, we've been seeing mostly green and brown stink bugs in tomato, but over the past week, Brown Marmorated Stink Bug (BMSB) has been noted in tomato crops and edible soybean (edamame). At this time, BMSB are present in the lower and mid-Hudson Valley in low to moderate populations, but this can change quickly and some fields may be hot spots. Over the course of the season the overwintering BMSB adults have given rise to a 'summer' 1st generation, which are producing eggs and nymphs. This past week we have been seeing an increase in nymph activity in veg crops. They prefer corn, tomato and pepper as well as most tree fruit, especially peach, pear and apple. Conventionally managed sweet corn using applications at a 4-5 day schedule in a pyrethroid program are at very low risk for BMSB feeding injury. However ,organic crops are at higher risk moving toward harvest.

This is a critical time to check fields for BMSB, especially if you know



Stink Bug Update, continued from last page

they are in your area. Fruit are now susceptible to BMSB injury as these late season populations feed intensively prior to moving to overwintering sites. I would check all crops as I've seen BMSB feed on all sorts of fruits and vegetables including: green beans, tomatillos, even leafy greens (rib feeding on swiss chard for example). In the past few seasons significant damage has been noted on jalapeno peppers and tomatoes.

Pay close attention to field edges that are bordered by trees or brush/weeds. The highest populations are 90 ft. in from field edges bordered by Tree of Heaven (Ailanthus altissima), Black Walnut, Catalpa, Maple and Ash. Damage typically begins along those field edges. Scouting along wooded borders should be conducted frequently in the cool of early morning as the insects tend to be a bit slower in their movement. Inspect fruit for damage and confirm the presence of stink bugs by searching the undersides of foliage, and fruits for eggs and nymphs. BMSB are elusive and not easily observed in low numbers. No specific thresholds have been established. If found, treatment may be necessary to reduce feeding and injury. Several insecticides are labeled for stink bug control on peppers and tomato and can be found in the Cornell ICPM Guidelines for Commercial Vegetable Production. Management of BMSB in organic production is very challenging. Peter Jentsch, Entomologist at the Hudson Valley Lab is currently evaluating efficacy of several organic materials. If you have any questions please feel free to email me at tr28@cornell.edu or call 845 389-3562. If you do see BMSB in your veg plantings, I would appreciate you letting me know as we are monitoring distri-

bution and population levels.-TR Sources: Cornell ICPM Guidelines for Commercial Veg Production Peter Jentsch, Senior Extension Associate - Entomology



Light yellow blotches result from BMSB feeding sites. Photos by Teresa Rusinek

Pesticide Updates

The New York State Department of Environmental Conservation recently approved BioCeres WP (EPA Reg. No. 89600-2) for use in New York State. This product contains the active ingredient *Beauveria bassiana* strain ANT-03. This is the first product registered in New York State containing this active ingredient. BioCeres is a contact biological insecticide labeled for control or suppression of many foliar feeding insect pests including aphids, white flies, thrips, plant bugs, beetles, and weevils. It is registered for use on numerous vegetable crops, berry crops, field crops, grapes, greenhouse vegetables and ornamentals, herbs and spices, hops, tree fruits and nuts, and shade and ornamental trees. Also recently approved were the registrations of Dominus (EPA Reg. No. 89285-2) and Dominus 100 (EPA Reg. No. 89285-3). These two biopesticides contain the active ingredient allyl isothiocyanate (a major component of natural mustard oil). They're labeled to control various fungi, nematodes, weeds, and insects in agricultural, nursery, turf, ornamental, greenhouse, seed, and transplant soils.

A copies of the NYS labels will be available soon on the Cornell PIMS (Product, Ingredient and Manufacturers System) site. To search for the label visit the PIMS website at http://pims.psur.cornell.edu/index.php

What's Going on in the Field: Amy Ivy's observations

Basil Downy Mildew:

Look for off color leaves. Turn leaves over and look for brown fuzz, sporulation, on the underside of the leaves. Basil downy mildew is different from the downy mildew that gets on lettuce, which is different from cucurbit downy mildew.



Beets:

Cercospora is the most common leaf spot disease beets but on a recent visit to the northern part of our region Sarah Pethybridge found the less common Phoma leaf spot as well. There are no resistant varieties of beets and both diseases are treated the same.

In this photo Cercospora is on the left side and has distinct



Tomato Hornworms:

Watch out for these hungry devils. Overnight they can devour the tops of healthy tomato plants and green fruit. Look for this characteristic damage (left) then keep hunting through the canopy until you find the culprit (right). These caterpillars are huge, up to 4" long and as thick as your finger, but are very well hidden. Look along the underside of a leaf, just below the damaged area.

Tomato fruitworms and armyworms will also feed on tomato fruits, ruining them for sale. There are a variety of spray options, but few list the armyworm. Bt is only effective on the very young caterpillars so by the time they are large enough to notice, it's too late to use Bt.



The adult hornworm is a fascinating moth called the sphinx moth, hawk moth, clearwing moth or hummingbird moth. The latter name refers to the moth's ability to hover in front of a flower similar to a hummingbird as it feeds on nectar.



Swede Midge in Brussels Sprouts Check any of the brassicas for feeding injury from Swede



WEEKLY VEGETABLE UPDATE

Continued on next page

Whats going on in the field, continued from last page

midge and please let us know if you find any. This pest has 4-6 generations a year and the larvae feed primarily on the growing points and newly expanding tissue, such as the margins of leaves as they expand.

We are curious to know where Swede midge is showing up in the Eastern NY region so please let us know if you notice any suspicious damage. For more pictures and information about this new pest visit <u>http://web.entomology.cornell.edu/shelton/swede-midge/</u>

Leek Moth Damage to Leeks:

True to their name, leek moths love leeks. Check the newest growth on fall leeks and let us know if you find any of this characteristic damage. For more information and pictures on this pest visit <u>http://web.entomology.cornell.edu/</u><u>shelton/leek-moth/</u>

(All photos by Amy Ivy)



Pumpkins

Every year at this time we start to get the following question: "I have a bunch of green pumpkins in my field. Do you think they will turn orange in time to pick them?". This is a pretty loaded question as there are quite a few factors to consider including the weather, amount of disease in the field and not to mention what kind of market is out there (too many, too few), all play a key role in determining an answer for this question. Luckily, I ran across this short article that might also help shed some like on this question. -CB

How Late is Too Late for Pumpkins to Color?

Gordon Johnson, Extension Vegetable & Fruit Specialist at the University of Delaware

Delayed fruit set in pumpkin can be caused by many factors

including late planting, heat and water stress, poor pollination and excess fertility (too much N). When set is delayed until August, the question is will the pumpkin develop and color in time for sales.

Under favorable summer growing conditions pumpkins will start to color about 4 weeks after fruit set and will be completely colored by 7 weeks after set. If fruit set is delayed until August, reduced day lengths and cooler temperatures may increase the time for full color development. Varietal differences in days to maturity also come into play.

In research at Purdue University, pumpkins that set in August were tagged and then evaluated for maturity in October. They found that for flowers that opened between August 10 and August 21, at least 70% produced pumpkins that were either turning or fully orange by October 2 and 10, respectively. The remaining 20 to 30% either never set a fruit, or the fruit was still immature at the time of harvest.

This indicates that pumpkins set in mid-August will be ready for October sales. In fields with delayed set, it will be critical to keep vines healthy through September. This will mean additional fungicide sprays through the month with special attention being paid to powdery mildew and downy mildew." (Source: Weekly Crop Update, University of Delaware Cooperative Extension, Vol.23, Issue 23, August 28, 2015).

Needless to say, many of the fields I have been in the last couple weeks have shown nice color but also need a bit more time. Therefore, a couple more fungicide applications for Powdery Mildew and Downy Mildew might be necessary if you have a fair amount of green fruit and also especially if the weather continues to be hot and sunny because loss of vine cover exposes the fruit to the sun and increases the potential for sun scalding!

Consider Postharvest Cover Cropping

Now that many vegetable fields have been harvested for the final time this season, it is a good time to think about planting a late summer or fall cover crop. Growers in temperate climates often find it difficult or impossible to skip an entire season to grow cover crops in a particular field due to the limited time we have here for crop production. However, many fields are left bare for a couple months after harvest but before heavy frosts begin. This period constitutes an opportune time to plant cover crops, which can impart the following benefits upon the soil:

- Prevention of nutrient loss through the scavenging of remaining nutrients in the soil
- ♦ Reduction of weed pressure by outcompeting would-be

weeds that, left unchecked, could produce weed seed for germination the following spring

- $\diamond \quad \mbox{Prevention of soil erosion} \\$
- ♦ Enhancement of nutrient cycling
- ◊ Addition of active organic matter
- Reduction of soil compaction and improvement of soil structure/aggregate stability

The table below details three groups of cover crops that can be planted in the fall following the harvest of vegetable crops.

Additional information on cover crops, including seed supplies, management, and control can be found at: <u>http://</u> <u>covercrops.cals.cornell.edu/</u> -*KB*

Сгор	Oats	Rye	Wheat, Spelt, Triticale			
Seeding Rate	80-140 lb/A	60-200 lb/A	70-200 lb/A			
Seeding Dates	Mid-April through mid- May and again August- September	Sept. 15 - Oct 10 for winter cover. Oct 15- for spring cover. April 15 as nurse crop for clover.	Mid-late September			
Time Until Control	4-6 weeks	When growth resumes in spring (3-6 inches; April). For mulched no- till, roll at heading (mid to late May)	When growth resumes (early May)			
Management Goals	Reduce weeds (fall), sta- bilize soil aggregates, summer erosion protec- tion, winter erosion pro- tection	Winter manure applica- tion, winter erosion pro- tection	Reduce weeds, reduce root rot, stabilize soil aggregates, nitrogen scavenging, winter erosion protection			
Management Tricks	Plant with legumes such as field peas.	Control on time, leave 2- 3 weeks between incor- poration and replanting.	Drill if possible. If broadcasting increase the rate by 30%. For weed suppression, increase the rate 30%.			
Unavoidable Problems	Soil crusting from heavy rain can stop emergence	Can suppress following crop	Excess growth in warm, damp spring.			
Avoidable Problems	Use clean seed if buying from farm	Becomes too big and fibrous if left too long. Rainy spring may prevent timely control.				
Classic Uses	Classic Uses Nurse crop with peas and vetch. With legumes for R forage. Killed winter op cover for early planting.		Winter cover for spring plow down. Green manure and weed control.			

WEEKLY VEGETABLE UPDATE

Sweet Corn

This week we saw nearly all of our reporting locations trapping some significant number of Corn Earworms which means silking corn needs to be treated with insecticides based on the table below. Remember that pyrethroids are less effective when temperatures are in the mid to upper 80's which is exactly what the weatherman is calling for the rest of this week into the weekend so consider using other

materials like Lannate, Coragen or the spinosids (Radiant etc.). If you are using materials like Coragen or pre-mix materials containing the active ingredient in Coragen (chlorantraniliprole) you will get a longer residual out of those materials (10 days).

This week I found Norther Corn Leaf Blight for the first time this season, however I suspect that it has been floating around out there for the last couple of weeks, especially with the heavy dews on crops in the morning. Northern Corn Leaf Blight affects both sweet corn and field corn and is a disease that should not be taken lightly as it can both affect ear quality (discolors the husk leaves) and can essentially defoliate a plant. Look for long, gravish cigar shaped lesions on the lower leaves first. I have heard of sweet corn being rejected by buyers because of low levels of NCLB on the flag leaves of the ears.

The first line of defense for sweet corn is selecting varieties that have NCLB tolerance or resistance. This information is generally noted in the seed cata-



Average Corn Earworm Pheromone Catch

Per Day	Per Five Days	Per Week	Days Between Sprays
<0.2	<1.0	<1.4	No Spray (for CEW)
0.2- 0.5	1.0- 2.5	1.4-3.5	6 days
0.5- 1.0	2.5- 5.0	3.5-7.0	5 days
1-13	5-65	7-91	4 days
over 13	over 65	over 91	3 days

logs, or you can ask your seed salesperson. The second line of defense is a fungicide. There are several recommended materials that can be used, including those in Group 11 FRAC fungicides: Headline and Quadris, or those in Group 3: PropiMax and Tilt. Quilt or Quilt Excel are premixes of both the active ingredients in Quadris and PropiMax and Tilt. The recommendation is to alternate between Headline

and PropiMax or Tilt plus a protective material like Bravo or mancozeb (Dithane). However, pay attention to the pre-harvest interval of these materials as they range from 7 days to 14 days. Stratego is also labeled and is a a premix of propiconazole (FRAC Group 3) and another active ingredient called trifloxystrobin (Group 11), has been labeled in NY and has a preharvest interval of 0 days with a 12 hour re-entry period. You need to rotate between the Group 3 and 11 fungicide groups for fungicide resistance management. Please be aware if you are applying premixes that contain both groups or only a single active ingredient as this will determine your fungicide schedule.

Once corn is harvested, corn residue should be destroyed as soon as possible in order to reduce the amount of inoculum and further infection of later plantings. You should also try to rotate out of corn in those fields infected with leaf blight for at least one year or better yet two years, if possible. -*CDB*

WEEKLY VEGETABLE UPDATE

Allium School and Grower Discussion

Join Extension specialists and researchers from Cornell University, University of Vermont, and Cornell Cooperative Extension in a grower discussion and production update covering onions, garlic and leeks. The program will include information on harvest and post-harvest handling of these crops as well as pest and disease management for organic and conventional growers. The discussion will include research updates and grower feedback about leek moth, a new invasive species that damages all members of the Allium family. Each participant will receive a Leek Moth pocket guide to aid in identifying and managing this new pest.

Speakers include Masanori Seto (Cornell University); Amy Ivy and Crystal Stewart (Eastern NY Commercial Horticulture Program); Christine Hoepting (Cornell Vegetable Program); Scott Lewins (St. Michael's College) and Vic Izzo (University of Vermont).

> Two locations and dates- choose the one most convenient for you Both programs run 6:00-8:30 pm Free, buffet dinner provided.

- Monday, Sept. 14 at the Holiday Inn-232 Broadway, Saratoga Springs, NY
- Tuesday, Sept. 15 at the Double Tree by Hilton, -1117 Williston Rd. Burlington, Vt

For planning purposes, please respond by September 8. To register, or for more information contact Amy Ivy at <u>adi2@cornell.edu</u> or call 518-570-5991.

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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
Orange County	3	0	0	3	14	12	11	19	12	9
Central Ulster	2	0	N/A	N/A	7	14	11	14	1	0
Northern Ulster	7	5	1	0	4	0	N/A	N/A	N/A	N/A
Northern Washing- ton	1	5	16	0	14	7	2	3	1	0
Southern Washing- ton	1	0	0	3	3	3	0	0	0	0
Albany County	1	0	1	1	5	14	2	8	0	1
Fulton County	1	0	0	0	0	15	0	5	0	0
Schoharie County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Northern Columbia	1	0	2	2	0	108	40	34	2	0

Sweet Corn Pest Trap Catches (Last Week ending 8/24 This Week ending 8/31/15)

PAGE 9

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 De	gree Informati	on Base 50 ^o F	Rainfall Accumulations				
Site	2015 Weekly Total 8/24- 8/31	2015 Season Total 3/1 - 8/31	2014 Season Total 3/1 - 8/31	2015 Weekly Rainfall (inches) 8/24 - 8/31	2015 Total Rainfall (inches) 3/1 - 8/31	2014 Total Rainfall (inches) 3/1-8/31		
Albany	142.2	2500.5	2253.5	0.32	17.38	19.57		
Castleton	134.3	2997.2	2132.7	0.0	18.24	19.66		
Clifton Park	138.9	2403.3	2045.7	0.05	15.28	20.62		
Fishkill	137.7	2384.7	Na ¹	0.03	6.11	Na ¹		
Glens Falls	129.0	2159.1	2018.0	0.0	14.87	24.10		
Griffiss	110.1	2000.8	1896.0	0.21	22.33	26.92		
Guilderland	233.2	2269.7	2060.5	0.32	15.90	Na ²		
Highland	145.7	2510.2	2268.9	0.70	17.83	22.75		
Hudson	144.2	2499.4	2275.4	0.01	16.06	26.10		
Marlboro	144.2	2418.0	2183.2	0.43	15.19	21.45		
Montgomery	141.2	2458.6	2215.0	0.16	17.36	19.02		
Monticello	107.1	1924.6	1735.0	0.01	13.92	8.46		
Peru	123.5	2045.9	1931.0	0.0	17.28	20.75		
Red Hook	135.5	2382.9	2214.3	0.18	17.73	12.00 ³		
Wilsboro	121.9	1999.8	1869.5	0.0	21.30	11.06		
South Hero, VT	135.9	2143.4	2026.1	0.0	19.90	21.52		
N. Adams, MA	110.7	1949.0	1801.5	0.28	18.40	20.31		
Danbury, CT	137.9	2295.5	2058.5	0.25	18.25	22.34		

Na1: The Fishkill site is new for 2015 so there is no historical data to report.

Na2: The Guilderland weather station was not properly reporting precipitation data in 2014 so no data will be shown for this site. Na3: Data for this week is only up to 8/7/2015

Na4: Precipitation data for this site did not start until May of 2014

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