Cornell University Cooperative Extension

Eastern NY Commercial Horticulture Program

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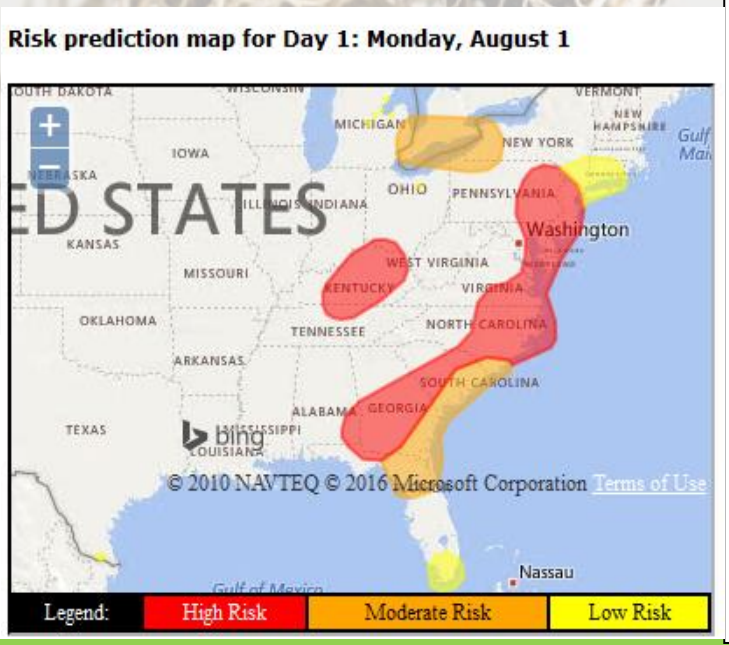
Vegetable News

Cucurbit Downy Mildew Update

Chuck Bornt, ENYCHP

No new reports of CDM in NY have been reported since last week and as you can see by the map, there is a moderate risk in Western NY this week and Long Island. Continue to scout hard for the disease and if you suspect CDM please call your local ENYCHP specialist for correct diagnosis. At this point I would continue to include CDM specific fungicides (see last week's newsletter for specific products) on cucumbers as well as with your powdery mildew fungicides on winter squash, pumpkins and other fall cucurbits. As I said last week, it's not if it will hit, but when will it hit and I suspect we can see it within the next week or so, especially with the recent rains and heavy, persistent dews the last couple of mornings!



HIGH Risk for cucurbits in the eastern FL panhandle, southeast AL, southwest and central GA, central SC, eastern NC, southeast VA, eastern MD, DE, NJ, eastern PA, central and eastern KY, and north-central TN. Moderate Risk in far southeast MI, southern ON, far western NY, northwest PA, northern FL, southeast GA, eastern SC, and far southeast NC. Low Risk for cucurbits in far southern FL, Long Island, southeast NY, and MA. Minimal Risk to cucurbits otherwise.

Early Potato Harvest Reminders

Chuck Bornt, ENYCHP

Early potatoes are being dug throughout the region and despite the lack of natural moisture for the better part of the spring and summer, yields are decent, but size is off a bit. However, with early potatoes size isn't as important as just having fresh dug new potatoes on your stand or in your market. However, now is about the time that I will start to get the call about potatoes that after they are washed are completely melting down. This isn't uncommon as we are in such a hurry to dig and market those potatoes we don't allow enough time for the field heat to leave them. And then we wash them in cold water and because the tubers are warm, the lenticels, which are pores that allow the tuber to exchange gases and water, are wide open. By putting that potato in water that is colder than the tuber it allows the cold water to get sucked into the tuber, taking it with all of the bacteria that might be in the dirt and debris on the potato skin into the potato tissue and within a day or so the potatoes will begin to develop soft rot. The greater the difference between the water tempera-

In this issue of Vegetable News:

ture (colder) and the potato core temperature (hotter) the more likely and severely this will happen. Do not put warm potatoes into wash water that is 10 degrees colder as this will increase bacterial breakdown. For that matter, you should follow this rule for all produce that is washed! If you can, harvest and wait until the potatoes have lost most of their field heat before you wash them (leaving them in a cool, dark barn overnight for example). If you need to cool them quickly, you could put them in a refrigerator or cooler, but you need to bring the temperature down gradually – cooling too quickly can create condensation and that moisture can also move into the tuber creating the same mess as mentioned above. Wash what you need and allow the rest to continue to cool down and certainly don't wash potatoes before putting them into storage.

Vine Killing and Handling New Potatoes: Although not always possible with early new potatoes because we still want the plant to grow, vine killing should really be considered to help reduce skinning of tubers when harvesting. Minimally vine killing should occur 2-3 weeks before harvest to ensure the tubers set their skin, making the tubers more resistant to skinning and bruising. Vine killing can be done many different ways including flail mowing, flaming and chemical desiccants (see Table 1 for a list of approved vine desiccants). When vine killing isn't possible and you are using a mechanical harvester, making sure to slow the speed of the chain down while keeping it full of dirt can help reduce some skinning by helping keep the potatoes from sliding down and bouncing around on the chain. Lastly, try to keep any falls the tubers might make less than 6" – this will also help reduce bruising and skinning.

Table 1: Labeled Potato Vine Killing Compounds for NYS

Product	Rate Per Acre	PHI (Days)	REI (Hours)	Notes
Aim EC	3.2—5.8 ounces if used alone 2 –5.8 if combined with another desiccant	7	12	Used for pre-harvest desiccation of potatoes. Apply in later stages of senescence. Will also desiccate late season susceptible broadleaf weeds. Adequate desiccation is achieved within 14 days after initial treatment. Two applications may be required if crop is in active vegetative growth when desiccation is initiated. Apply in a minimum of 20 gallons per acre and use a non-ionic surfactant (NIS), methylated seed oil (MSO) or crop oil concentrate (COC). Don not use more than 11.6 fluid ounces per acre per crop season
Reglone 2L	1 –2 pints per acre	7	24	Used for pre-harvest desiccation of potatoes. May make a second application, 5 days after the first if vine growth is particularly dense. Do not exceed a total of 4 pt/A. Drought at the time of application will decrease desiccation effectiveness. Apply in a minimum of 20 gallons of water per acre and use a non-ionic surfactant at 0.06-0.5% v/v (1/2-4 pt per 100 gal) of the finished spray volume.
Rely 280	21 ounces per acre	9	12	Not for use in Nassau and Suffolk Counties. Do not split application nor apply more than one application. Do not apply to potatoes grown for seed. Canola, corn, cotton, rice, soybean, and sugar beets may be planted at any time after the application. Do not plant treated areas to wheat, barley, buckwheat, millet, oats, rye, sorghum, and triticale until 30 or more days after an application as a potato vine desiccant. Do not plant treated areas to crops other than those listed in this use precautions section until 120 or more days after application.
VidaEC	5.5 fl oz if used alone 2.0 - 5.5 fl. oz. if combined with another desiccant	7	12	Make 1 to 2 applications with a minimum interval of 7 days. Do not exceed 2 applications or 11 fl. oz/A per crop season. Apply with either a non-ionic surfactant or crop oil concentrate in 20-50 gallons of water/acre. Use an approved buffering agent to obtain a pH of 5.0 or less if the water source has a pH greater than 7.5. See label for additional information.

This Week in Photos

Amy Ivy, ENYCHP

Heavy, pounding rain has caused this kind of damage to onion foliage in recent weeks. It looks like it could be disease or insect damage but this kind of spotting is from the impact of heavy rain or light hail. At first the damage is whitish, as in this picture, but within several days the fungal disease purple blotch may move in. Purple blotch is usually a secondary disease that invades damaged tissue. Many plantings have begun to lodge (fall over) prematurely after being whipped by strong wind as well. (*photo credit: Scott Lewins)*

Some growers try to maximize production space in their tunnels by interplanting two crops, such as the basil and indeterminate tomatoes here. In this picture the system is working because the tomatoes are heavily pruned to remove all the lower foliage which leaves room for the basil and still allows for good air circulation. In other tunnels the plants are too dense and crowded, so air flow is impeded, creating ideal conditions for fungal diseases. Providing enough nutrition and water for both crops is also important so one doesn't compete with the other.

You would think anything THIS large that causes THAT much damage would be easy to find in your tomato plants but you would be wrong. These tomato hornworms are remarkably clever at hiding right in plain sight. They lie right along the leaf petiole or main vein and manage to blend right in.

They do considerable damage, devouring the tops of tomato plants overnight and chomping into developing fruit. If you can find any, drop them into a bucket of water to drown. When you notice any of their large, black droppings on a leaf, look up and maybe you'll be able to find the culprit. But seeing them is not as easy as it seems. I recently found information on the web that says they glow green under a black light. My $10 UV flashlight arrived yesterday so I've only had one night to look, and so far no luck. But I'm going to keep trying and will report back if this method works. Has anyone else tried this?

(Photo credit: Lauren Fessler)

Bits-N-Pieces

Maire Ulrich, ENYCHP

Basil Downy Mildew is on the increase for sightings in the lower HV. For more information and pictures go here: http://vegetablemdonline.ppath.cornell.edu/NewsArticles/BasilDowny.html

Cracking on tomatoes is likely to be prevalent since the rains. High temperatures and dry conditions concentrate nutrients in the frit and then when water is plentiful the water goes where the salts are and pressure causes the fruit t burst. Certainly, there is no remedy but removing the cracked fruit as soon as possible to allow the plant to focus on the next round of fruit is probably the best course of action.

Onion harvest in OC has not really begin before or after the rains, yet. Onions that were fully mature (tops completely dry) should not be allowed to sit in the now moist soil for too long. IT's tempting to allow them to size up from the rains but too many days and they may begin a second growth and start putting on green tissue. Lifting or harvesting before too long would be the best action against this.

Why are Tomatoes Not Ripening?

Steve Reiners, Cornell University

With all of the hot weather we have experienced this summer, growers were expecting their tomatoes to ripen very quickly. Unfortunately, just the opposite is happening. Ripening seems very slow, almost like what we see in the autumn when temperatures are much cooler. So what's happening? It takes six to eight weeks from the time of pollination until tomato fruit reach full maturity. The length of time depends on the variety grown and of course, the weather conditions. The optimum temperature for ripening tomatoes is 70 to 75F. When temperatures exceed 85 to 90 F, the ripening process slows significantly or even stops. At these temperatures, lycopene and caro-tene, pigments responsible for giving the fruit their typical orange to red appearance cannot be produced. As a result, the fruit can stay in a mature green phase for quite some time. Light conditions have very little to do with ripening. Tomatoes do not require light to ripen and in fact, fruit ex-posed to direct sunlight will heat to levels that inhibit pigment synthesis. Direct sun can also lead to sunscald of fruit. Do not remove leaves in an effort to ripen fruit. Also, soil fertility doesn't play much of a role. We do know that high levels of magnesium and low levels of potassium can lead to conditions like blotchy or uneven ripening or yellow shoulder disorder. But the slowness to ripen is not likely due to soil conditions and adding additional fertilizer will do nothing to quicken ripening. If you absolutely cannot wait, some growers will remove fruit that are showing the first color changes. These fruit, in the mature green or later phase, could be stored at room temperature (70-75F) in the dark. A more enclosed environment would be best as ethylene gas, released from fruit as they ripen, will stimulate other fruit to ripen. If temperatures remain high outdoors, these picked fruit will ripen more quickly, perhaps by as much as five days. As far as flavor, the greener fruit should develop flavor and color similar to what you would get if field ripened. The key is picking them when they are showing the first signs of ripening (no earlier) and keeping them at room temperature. Do not refrigerate, as this will absolutely destroy their flavor.

Look for These Insects in your Tomato Plantings

Teresa Rusinek, ENYCHP

At this point in the season we are really focused on diseases in tomato crops. However, there are some insects and mite pests to keep an eye out for as well. In field tomatoes, I've seen one heavy infestation of hornworm in an organically managed field. Generally horn worms do not cause economically significant levels of damage. Midwest threshold recommendations for treatment are if more than 1 hornworm per plant are overserved. But consider the amount of defoliation and the potential for sun scalding of fruit. In small plantings hornworms can be picked off, if that is not possible there are a number of insecticides that will control hornworms including: Javelin (a Bt product), Radiant or Entrust, Baythroid and Warrior. Also look for signs of natural enemies at work. There are parasitic wasps that lay their eggs into the hornworms. Worms that have been parasitized stop feeding so you can leave those in the field to allow the wasps to finish developing in the white sacs the worms carry on their bodies. To scout for hornworms, look for defoliation on the upper portion of the tomato plant, fruit with feeding damage, and brown droppings from hornworms. Hornworms are great at camouflaging themselves on the plant so it may take a bit of looking before you spot them. Some other caterpillar or "worm " pests to look out for are fruit worms. These are actually the same caterpillars that attack corn (corn ear worm). Keep an eye on our weekly CEW trap counts to learn when moths have arrived in your region. Fruit worms and yellow striped armyworms usually show up in tomato fields in August. Fruit worm larvae often enter the fruit where it meets the stem (calyx end), they will burrow deep into the fruit and cause a wet rot. Yellow striped armyworm feed on both foliage and the surface of fruit. Management must take place early when larvae are small; once larvae become large they are difficult to control. Some insecticides will control multiple species of "worm " pests. Check the label and or the Cornell IPM Guidelines.

Thrips are sneaky little critters to find. If your vision isn't perfect, I suggest you get yourself a 10 or 20 X handlens to actually see thrips on your plants. I will often look on the undersides of leaves for the yellowish larvae. They are tiny, cigar shaped, and about the length of a pen point. Adults are slightly larger and a dark brown color. Most of the time I'm looking in greenhouses for thrips but occasionally they will be a problem in field tomatoes, particularly during hot, dry spells. Earlier this week I was called out to a farm where the lower leaves on a late planting of tomatoes were bronzed, distorted and dried up. The grower was surprised to learn it was thrips causing the damage. Thrips have raspy mouthparts and they suck the juices out of the leaves and fruits leaving a dried up, rough look to them. Thrips can also transmit a very serious virus to tomatoes and other

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veg species. Initial virus transmission usually happens while they are transplants growing in the greenhouse. Radiant, Entrust and Assail, are all labeled for Western Flower thrips control. And since I'm talking about sneaky, tiny creatures, I should mention spider mites. If you are growing tomatoes in a high tunnel you will want to keep on the lookout for spider mites. High tunnels are where I usually find high populations of mites. Damage from spider mites is similar to thrips damage. You can usually find them on the undersides of leaves and notice white stippling on the upper leaf surface. When populations are very high you will see webbing. Note that these are mites, so if you are applying insecticides *for insects*, you will not likely see any control of mites. Also if you are applying a pesticide in a high tunnel make sure it is labeled for use in a high tunnel for example Acramite is for field grown tomatoes only.

Stink bugs and tarnished plant bugs are out there. Based on my observations I will say that these tend to be a bigger problem in fields that are weedy. Stink bug damage appears as a pin prick surrounded by a cloudy irregularly shaped spot. Spots may coalesce when feeding is heavy. Spots tend to be yellowish to green on ripe fruit and whitish on green fruit. Below the surface, the flesh of the tomato will turn whitish and have a spongy texture. The stink bug damages the fruit when it inserts its needlelike proboscis into the fruit to feed on the sap. The feeding may also introduce pathogens into the fruit that can cause decay. I have observed several types of stink bugs in the mid-Hudson Valley, one of them being the Brown Marmorated stink bug; we also have green and brown stink bugs.

Please always read pesticide labels thoroughly and make sure you are following resistance management practices by rotating classes of materials you use. Also note the pre-harvest interval (PHI) when applying any insecticides, this includes organic insecticides such as Entrust that has a 1 day PHI. And as always, feel free to call one of the vegetable production specialists if you have any questions.

Photo- University of Georgia

Corn earworm (A.K.A fruitworm) feeding and damage on tomato and pepper fruits (bottom).
Photo courtesy Missouri Botanical Garden

Above: Brown Marmorated Stink Bug Nymphs (immatures) Feeding on Tomato. Photo Courtesy Virginia Tech.

Below: Dimples on green tomato fruit caused by Tarnished plant bug feeding. Photo- University of Maryland

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Right: Thrips Damage on Tomato fruit

Left: Thrips feeding damage on tomato leaf , University of Maine

Stink Bug

Tarnished Plant Bug (Nymph)

Yellow striped AW and feeding damage on tomato

Photo courtesy of University of Delaware Cooperative Extension

Average Weekly Farmers' Market Prices

Product (NC = nonconventional)	Unit	Mid-Hudson	Capital	Saratoga - Lake George	Northern
Beeftsteak Tomatoes	1 lbs.		$3.00	$2.95	
Beeftsteak Tomatoes NC	1 lbs.	$3.00	$4.00	$3.50	
Blueberries	pint	$4.00	$4.50	$4.69	$3.19
Blueberries NC	pint	$5.50	$5.00	$4.83	$4.00
Carrots	bunch		$2.50	$3.00	$2.58
Carrots NC	bunch	$3.19	$3.00	$3.50	
Cherry Tomatoes	1 lbs.	$3.50	$3.79	$3.06	$3.25
Cherry Tomatoes NC	1 lbs.	$4.04	$5.00	$4.19	$4.00
Heirloom Tomatoes	1 lbs.		$3.00	$4.50	
Heirloom Tomatoes NC	1 lbs.	$4.25	$4.25	$4.17	
Honey	1 lbs.		$9.13	$8.00	$6.25
Honey NC	1 lbs.			$6.00	
Raspberries	1/2 pint		$5.67	$5.00	
Raspberries NC	1/2 pint	$4.00			
Red Potatoes	1 lbs.	$1.50	$3.50	$3.19	$4.00
Red Potatoes NC	1 lbs.	$2.00	$4.00	$4.00	
Russet Potatoes	1 lbs.		$4.00		
Russet Potatoes NC	1 lbs.			$3.00	
Salad Mix	1/2 lbs.				
Salad Mix NC	1/2 lbs.	$6.50	$7.00	$5.16	
Shelled Peas	pint				
Shelled Peas NC	pint				
Strawberries	pint		$3.25	$5.00	
Strawberries NC	pint		$3.00	$6.00	
Sugar Snap Peas	pint				$3.00
Sugar Snap Peas NC	pint				
Sweet Corn	dozen	$5.40	$7.04	$6.28	$5.00
Sweet Corn NC	dozen	$8.00	$9.00	$8.75	
Yellow Potatoes	1 lbs.		$4.38		$4.00
Yellow Potatoes NC	1 lbs.	$2.00		$5.00	

Save the Date!

When: August 15, 2016, 9:00 – 4:15
Where: Cornell Cooperative Extension Albany County, Voorheesville, NY

With all the talk about climate change you might be wondering how it will affect food production, pests, and even landscapes - and what you can do about it. The Second Annual NYS Integrated Pest Management conference can help!

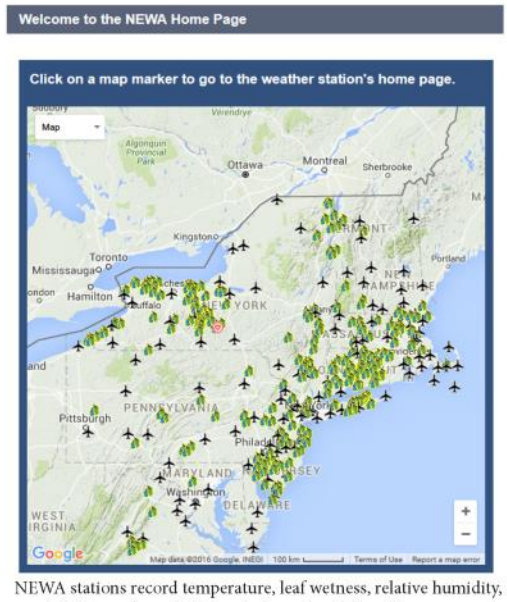
A wide variety of speakers from NYS and the Northeast will provide information on the current state of knowledge on climate change, changes in our weather patterns, and how collecting climate and weather data can help us predict and manage pests. Join us to learn and discuss!

$45 includes materials, lunch, and breaks.

The draft agenda, registration information, and map can be found at:
tinyurl.com/hq8tbm2

If you have questions, please contact Amanda Grace at arw245@cornell.edu or 315-787-2208.

New York State Integrated Pest Management Program



NEWA stations record temperature, leaf wetness, relative humidity, precipitation, solar radiation, wind speed and direction.

Site	2016 Weekly Total 7/27-8/2	2016 Season Total 3/1-8/2	2015 Season Total 3/1-8/2	2016 Weekly Rainfall (inches) 7/27-8/2	2016 Total Rainfall (inches) 3/1-8/2	2015 Total Rainfall (inches) 3/1-8/2
Albany	161.7	1758.4	1829.5	4.52	14.57	14.53
Castleton	159.1	1701.0	1716.6	3.21	15.92	15.02
Glens Falls	153.6	1573.0	1562.0	1.09	20.86	15.13
Griffiss	151.6	1450.5	1450.5	1.09	21.57	22.99
Guilderland	146.5	1582.5	1582.5	2.84	17.25	20.37
Highland	168.0	1862.0	1862.0	2.93	16.68	18.04
Hudson	165.2	1837.7	1837.7	5.64	22.45	17.99
Marlboro	162.4	1772.6	1772.6	3.28	16.79	14.07
Montgomery	170.9	1781.1	1781.1	4.86	16.22	15.75
Peru	140.7	1454.1	1454.1	0.25	9.25	18.15
Red Hook	159.8	1747.5	1747.5	2.13	13.67	15.30
Willsboro	140.4	1431.3	1431.3	0.96	12.58	22.26
N. Adams, MA	140.8	1408.0	1408.0	2.93	16.26	16.96

2016 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.

Sweet Corn Pest Chart (week ending 8/3)

Location	CEW	ECBZ	ECBE	FAW	WBC
C. Clinton	0	2	0	1	64
S. Clinton	0	0	0	0	2
N. Washington	0	0	3	0	24
S. Washington	0	0	6	47	27
Albany					
Rensselaer	0	1	2	1	9
Saratoga	NA	0	2	NA	6
Fulton	NA	0	0	NA	NA
Schoharie	NA	NA	NA	NA	NA
Greene	NA	2	2	1	3
Orange					
N. Ulster	0	1	6	0	0
S. Ulster	0	0	2	0	7
Dutchess					

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