



Cornell University  
Cooperative Extension

# Eastern NY Commercial Horticulture Program

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## Weekly Vegetable Update

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Tree Fruit & Grapes

### Regional Updates:

#### *North Country—Clinton, Essex, northern Warren and Washington counties*

Spring is arriving very slowly up here. We had hard frosts last weekend but some sunny days have really brought things along. We need rain for the new seedlings but nothing significant is in the forecast.

Winter greens are coming out and tomatoes are going into high tunnels this week. Growers who don't have any emergency heat are being cautious this year about setting out tomatoes in tunnels.

Onion seedlings and sets are planted, broccoli is out, peas will be coming up soon.

Two male adult leek moths were trapped in Clinton County last week; the traps use a pheromone so only males are attracted, but females were likely flying as well. Leek moths are poor fliers and don't travel far. They overwinter as adults, mate and lay eggs so damage won't begin until the first larvae hatch later in May. (A full article on this pest is coming in a future issue)

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#### *Capital District—Albany, Fulton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, southern Warren and Washington counties*

Pay attention to your seedling and transplant care, because the soil is unusually dry. Make sure you have your drip going, or use overhead irrigation to maintain levels of moisture. Remember to properly harden off transplants so they are not sun or wind-burned.

Planting of hardy crops and HT crops is in full swing. We are still behind last year in growing degree days, but we are near the longer-term average.

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#### *Mid-Hudson Valley—Columbia, Dutchess, Greene, Orange, Sullivan and Ulster counties*

Crops continue to go into field. Nighttime temperatures have been in the lower 30s throughout the week. Field conditions are on the dry side. Asparagus is ready for first harvest. In greenhouse, growers are harvesting lettuce, squash and cucumbers.

## Greenhouse and High-Tunnel Disease Update

This week we found Downy Mildew on densely planted lettuce in a high tunnel. The conditions in some locations have been quite favorable for disease development, so make sure to check any leaves which are yellowing or prematurely dying for issues so you can quickly gain control of any problems.

Downy mildew ( ) is caused by a water mold. It is particularly common where temperatures are low and leaves are wet for long periods. These conditions are common in cool season hoop house and greenhouse production. Downy mildew appears as light green to yellow lesions on the upper leaf surface with white growth containing spores on the underside of the spots. Lesions are angular and delineated by large veins (see images below). Older leaves are attacked first. Diseased leaves often become infected by secondary soft rot bacteria and fungi. Between crops, the organism survives as mycelia and oospores in the residue of infected plants. Downy mildew can also kill seedlings if the cotyledons are infected. Many varieties are resistant to this disease, however breeding resistant varieties is a continuing task since the fungus readily produces new races. Wild lettuce can carry the disease.

### Cultural Control:

1. Crop rotation is the first line of defense. Plow deeply to bury diseased crop residue.
2. Reduce the duration of leaf wetness by avoiding overhead irrigation, orienting the rows parallel with prevailing wind, using wide spacing within rows, controlling weeds, and minimizing crop debris at time of planting.



Powdery mildew on leaf surface.



Downy mildew on underside of lettuce leaf.

3. Do not use poorly drained fields for early or late plantings.
4. Manage greenhouse ventilation to avoid long periods of leaf wetness.
5. The most effective means of controlling downy mildew is to grow resistant varieties. However, resistance is strain-specific, so best results are realized by noting which resistant varieties do well in a given area.

This week we also found powdery mildew on zucchini in heated tunnels. This particular planting just began to bear fruit so control is necessary. Powdery mildew is a common disease on many types of plants. There are many different species of powdery mildew fungi and each species only attacks specific plants. For example, the powdery mildew that infects squash plants will infect other plants in the cucurbit family but will not infect roses. Powdery mildews generally do not require moist conditions to establish. Most powdery mildew fungi grow over the surface of the leaf. Symptoms generally begin as white circular spots first on crown leaves, shaded lower leaves, and leaf undersides. Eventually leaves yellow, turn brown, and die. Powdery mildews are favored by warm days and cool nights and moderate temperatures (68° to 86°F). At leaf temperatures above 90°F, some mildew spores and colonies (infections) are killed. Shade or low light intensities also favor powdery mildew fungi. Greenhouse conditions are often ideal for development of the disease. Check the Cornell IPM guidelines for management options.

## Onion Bulb Mites

With the cooler temperatures and visible spotty mite activity over the past few springs, it is probable there will be some damage appearing in the next couple of weeks in onions. Look for the following signs to help identify mite damage:

- Look for patches of missing or wilted seedlings. Damage often appears as a circular spot. Damage can be difficult to find amongst the windbreak.
  - This most often occurs in loop or 7s stage since roots are few and plants are easily weakened or killed with just a small amount of feeding.

The following steps will help you to then find and identify the mites:

1. Look for the next healthiest onion at the edge of the damaged area
2. Dig up entire plant with soil around the roots and carefully remove soil
3. Look for root pruning/holes/infected areas. It is likely a magnifying lens will be needed (at least 10X).
4. Look for mites. Adult females are the easiest to spot as shiny and translucent pearls with legs and head. She is often surrounded by several smaller, juvenile mites.

If mites are positive, you may have to consider destroying and replanting the field, depending on the damage. Any greater than 25-30% damage usually should be disked in. Remember, a 5% field can become a 50% field in just a couple of days.

Mites do not only infect seeded onions but have been seen on bare-root transplants as well as sets.



Adult mites.



Mite infestation in layers of onion.

## Sweet Corn Growers: Do You Have Any “Alachlor” Containing Herbicides Left?

The NYSDEC has recently approved the registration of the following herbicides containing the new active ingredient acetochlor: Degree Xtra Herbicide (active ingredients are acetochlor and atrazine), Harness Herbicide (active ingredient is acetochlor), Harness Xtra and Harness Xtra 5.6L Herbicides (active ingredients are acetochlor and atrazine), Keystone Herbicide (active ingredients are acetochlor and atrazine) and Surpass EC (active ingredient is acetochlor). These products are labeled for **pre-emergence** (both sweet corn and weeds) applications for the control of annual broadleaf, grass and yellow nutsedge with the following precautions: 1.) All are restricted-use pesticides. 2.) All products are prohibited from use on Long Island and 3.) All products have specific setback requirements to protect water resources. These products should not be used on sweet corn as “post emergent” applications as serious injury will occur.

The catch with these new registrations is that in order for NYS DEC to label these new materials, they requested that

all herbicides containing the older active ingredient called (Lasso, Micro-Tech, Bullet, Intro and Lariat) be cancelled. **“Registrations for these products are to end after the upcoming growing season. Growers or custom applicators who have stocks of alachlor-containing herbicides on hand will need to use them up during this year’s growing season. After December 31, 2013, the Monsanto herbicide brands Bullet®, MicroTech®, Lariat® and Intro® will no longer be allowed for sale, distribution, or use in New York State. Monsanto will immediately cease any additional direct sales to distributors and retailers in New York of these four product brands.”** Any unused quantities of these herbicides must be used this season or taken to an approved NYS DEC disposal/collection event.

Copies of the approved labels for the new products containing the new active ingredient acetochlor are available

**2013 Potato Seed Piece Fungicide Review:** Below is a list of Potato Seed Piece treatments available for direct use on seed or applied as an in-furrow treatment for both conventional and organic production. A healthy contingent of biological products are registered in the state (OMRI listed), and although I have not tested all of them, I suspect all will perform well for Rhizoctonia, black scurf, stem canker and Fusarium dry rot if that is a factor on whole or cut seed. All fungicides perform the best when application methods allow for uniform coverage and in the case of the in-furrow treatments, that the application spray pattern needs to contact the seed piece as it lies in the furrow and the surrounding soil.

**2013 Potato Seed Piece Fungicides Arranged by Chemical Groups – T. A. Zitter, Dept. of Plant Pathology, Cornell University**

<b>Chemical Group and Group No., Common name - Trade Name</b>	<b>Formulation, Application means</b>	<b>Dosage &amp; REI (hrs.)</b>	<b>Comments</b>
			<b>Pathogens controlled or suppressed; special labeling need requirements.</b>
<b>Strobilurins – Grp 11 (QoI)</b>	Resistance known in various fungal species; cross resistance between all members of this QoI group.		
- <sup>11</sup> <b>Dynasty</b> <sup>0</sup> (9.6%)	Liquid, for seed	0.10-3.75 fl oz/ cwt; <b>4hrs</b>	Suppression of Rhizoctonia, seedborne black dot, protection from silver scurf
<sup>11</sup> <b>Quadris F</b> <sup>0</sup> (22.9%)	In-Furrow trt.	0.40-0.80 fl oz/1000 ft; <b>4hrs</b>	Rhizoctonia, Silver scurf and Black dot
<b>Headline SC</b> (23.3%)	In-Furrow trt.	0.4-0.8 fl oz/1000 ft; <b>12hrs</b>	Rate depends on row spacing; For Rhizoctonia control
<b>Phenylpyrroles – Grp 12</b>	Resistance management is required due to fungicide resistance occurring sporadically for this group.		
- <sup>12</sup> <b>Maxim 4FS</b> <sup>0</sup> (40.3%)	Liquid, specific coverage	0.08 fl. oz./cwt; <b>12hrs</b>	Fusarium, Rhizoctonia and Helminthosporium control. <u>If seed grower</u> , then also use mancozeb dust or IF strobbly after Maxim (see label).
- <sup>12</sup> <b>Maxim Potato seed protectant</b> <sup>0</sup> or <sup>12</sup> <b>Maxim PSP</b> <sup>0</sup> (both 0.5%)	Dust, provide uniform coverage	0.50 lbs./cwt; <b>12hrs</b>	<u>Not for use on crops planted for seed production</u> ; see above for fungi on label.
- <sup>12</sup> <b>Spirato</b> <sup>0</sup> <b>480FS</b> (40.3%)	Liquid, specific coverage	0.08 fl. oz./cwt; <b>12 hrs.</b>	For Fusarium, Rhizoctonia and Helminthosporium control. <u>If seed grower</u> , also use mz dust or IF strobbly after Spirato.
<sup>12+M3</sup> <b>Maxim MZ</b> (0.50% + 5.7%)	Dust, uniform coverage	0.5 lb/cwt; <b>24hrs</b>	Use for Fusarium, Rhizoctonia and Helminthosporium control. MZ portion reduces seed to seed transmission of Late blight.
+ Insect <sup>12</sup> <b>CruiserMaxx Potato</b> <sup>0</sup> (7%)	Liquid, fine spray	Varies by seeding rate; <b>12hrs</b>	Includes systemic insect control; For Fusarium dry rot, Rhizoctonia and seedborne Silver scurf <b>(Not for use on L. I.)</b>
<b>Dithio-carbamates – Grp M3</b>	are a low risk for fungicide resistance occurrence because of multisite activity		
only – ex of formulations (% varies) <sup>M3</sup> <b>Dithane DF, Manzate Pro-Stick, Penncozeb 75DF, Roper DF, Koverall</b>	Liquid for creating slurry	1.25 lb/50 gal water; <b>all 24hrs</b>	Mostly for Fusarium dry rot, Rhizoctonia stem canker and Silver scurf (Helminthosporium). Also available are <b>Potato Seed Treater PS</b> and <b>6%</b> products.
<sup>M3 +</sup> Insect <b>Gauche MZ Pot. S-P Trt.</b> <sup>0</sup>	Dust	0.5-0.75lb/cwt; <b>24hrs</b>	Aids in the control of insects and Fusarium dry rot.
<b>Phenyl-benzamides – Grp 7</b>	Resistance management required for flutolanil fungicides		
- <sup>7</sup> <b>Moncut 70DF</b> <sup>0</sup> (70%) <b>(Not for use on L.I.)</b>	In-furrow as 4-8” band over seed & soil	0.74-1.11oz/k ft; <b>12hrs</b>	Rate for 1,000 ft @ 34” row spacing; For Rhizoctonia black scurf and suppression of Powdery Scab.
+ <sup>7+</sup> <sup>M3</sup> <b>Moncoat MZ</b> <sup>0</sup> (1.5% + 6%)	Dust, seed trt.	0.75-1 lb/cwt; <b>24hrs</b>	For suppression of seedborne Fusarium dry rot, Black scurf and canker, and Silver scurf.
<b>Thiophanates – Grp 1</b>	Resistance is common in many fungal species		
+ mancozeb - <sup>1+M3</sup> <b>Tops MZ</b> (2.5 + 6.0%)	Dust, seed trt.	0.75-1 lb/cwt; <b>24hrs</b>	For suppression of Fusarium dry rot, Rhizoctonia (black scurf and stem canker), Silver scurf, and helps to reduce the spread of LB.

2013 Potato Seed Piece Fungicides Arranged by **Chemical Groups** – T. A. Zitter, Dept. of Plant Pathology, Cornell University

<b>Chemical Group</b> and Group No., <i>Common name - Trade Name</i>	<b>Formulation,</b> <b>Application</b> <b>means</b>	<b>Dosage &amp; REI (hrs.)</b>	<b>Comments</b> <b>Pathogens controlled or suppressed; special labeling need</b> <b>requirements.</b>
<b>Thiophanates Continued</b>	Resistance is common in many fungal species		
1 + M3 + Insect <b>Tops-MZ-Gaucho</b> <sup>0</sup> (2.5 + 6 + 1.25%)	Dust, seed trt.	0.75 lb/cwt; <b>24hrs</b>	For aid in the control of insects and Fusarium dry rot and Rhizoctonia black scurf and stem canker, Silver Scurf, and reduces the spread of Late blight during cutting process.
1 + M3 + 27 <b>Evolve</b> <sup>0</sup>	Dust, seed trt.	0.75 lb/cwt; <b>24hrs</b>	Aids in preventing the spread of Late blight during cutting and planting that appear to be free of LB; also for Fusarium dry rot, Rhizoctonia, Silver scurf.
<b>Cyanoacetamide-oxime – Grp 27</b>	Low to medium risk of fungicide resistance	Low to medium risk of fungicide resistance	Low to medium risk of fungicide resistance
– <sup>27</sup> <b>Curzate 60DF</b> <sup>0</sup>	Liquid, cut seed	0.25-1.0 oz/cwt; <b>12hrs</b>	Selected for Late blight control carried on seed.
<b>Biologicals – Some as Grp 44</b>	Resistance is not known to exist; OMRI listed for organic use		
<sup>44</sup> <b>Double Nickel 55</b> Strain D747 <sup>0</sup> (25%) <b>OMRI</b>	In-furrowF	0.3-1.0 oz/1000 row ft; <b>4hrs</b>	For Rhizoctonia and potential other soilborne pathogens; use for 34” row spacing
<i>Bacillus subtilis</i> <sup>44</sup> <b>Serenade Soil</b> <sup>0</sup> (1.34%) <b>OMRI</b>	<b>Soil drench; In-furrow</b>	<b>2-6 qt/A; 2.2-13.2 fl oz/k row ft; 4hrs</b>	<b>Primarily for Rhizoctonia, but others are listed; suppression of Common Scab.</b>
<sup>Bio</sup> <i>Actinoyate AG</i> <sup>0</sup> (0.0371%) <b>OMRI</b>	In-furrow as a soil drench	3-12 oz/A; <b>1hr</b>	For Fusarium and Rhizoctonia and potentially for Pythium and Phytophthora
<sup>Bio</sup> <i>Bio-Tam</i> <sup>0</sup> (2% each) <b>OMRI</b>	In-furrow	1.5-3 oz/1,000 row feet; <b>1hr</b>	See In-Furrow Application Rate table on label; Potentially best for Fusarium and Rhizoctonia
<sup>Bio</sup> <b>T-</b> <sup>0</sup> (1.15%) <b>OMRI</b>	Dust or aqueous	0.5-2 oz/cwt; <b>0hrs</b>	Rhizoctonia black scurf and stem canker
<sup>Bio</sup> <b>Root Shield Plus WP</b> <sup>0</sup> (1.15 + 0.61%) <b>OMRI</b>	Dust or In-furrow trt.	0.03-3lb/cwt; 16.0-32oz/A; <b>4hrs</b>	For whole or cut seed as Dip or Dust or IF spray; Fusarium and Rhizoctonia control. Consider 34” row spacing. See label
Other <b>OMRI</b> products to consider: <u>MeloCon WG</u> (nematodes), <u>Mycostop</u> , <u>Prestop</u> , <u>Taegro</u> .			

on the Product, Ingredient and Manufacturer System or PIMS website: <http://pims.psur.cornell.edu>.

This also leads me to another thought—lots of times we will get questions in regards to a container of pesticide that was left in the back corner of a storage and the grower wants to know if it is still labeled and legal to use. Usually the first thing we need to do is make sure there is a label on the container or at least the product name and, if possible, an EPA Registration number. After that, it’s a matter of visiting the PIMS website that we mentioned above (<http://pims.psur.cornell.edu>) and doing a search to see if the product still has a valid label in NY. The site is pretty simple to use, but the thing to remember when searching for a product that might be pretty old is to search “all” under the “Registrations” menu. The default is “Current” so if your material has an expired registration, it will not be displayed

in the results. Once you found the right product you’re searching for and click on it, a general “Label Information” page will be displayed. Most of the time this is as far as you will need to go as you will be able to see if the product has a current registration or if it has expired. If all else fails, give one of the educators listed on the front of this publication a call for some assistance.

The other reason to “bookmark” the PIMS site is because every year we have products that are granted “Special Use Labels” by NYS DEC. In order for you to use these products they will require you to have a copy of the label in your possession. The PIMS site is a great source for these labels.

As with any pesticide product, always read and follow label directions.

## Meetings and Notices

None this week—enjoy the good weather!

<b>Weekly and Seasonal Weather Information</b>						
	<b>Growing Degree Information Base 50<sup>o</sup> F</b>			<b>Rainfall Accumulations</b>		
<b>Site</b>	<b>2013 Weekly Total 4/23—4/29</b>	<b>2013 Season Total 3/1 - 4/29</b>	<b>2012 Total 3/1—4/29</b>	<b>2013 Weekly Rainfall 4/23—4/29 (inches)</b>	<b>2013 Season Rainfall 3/1—4/29 (inches)</b>	<b>2012 Total Rainfall 3/1—4/29 (inches)</b>
<b>Albany</b>	<b>15.3</b>	<b>37.3</b>	<b>172.0</b>	<b>0.06</b>	<b>4.76</b>	<b>5.79</b>
<b>Castleton</b>	<b>14.4</b>	<b>43.6</b>	<b>175.9</b>	<b>0.0</b>	<b>0.90</b>	<b>5.82</b>
<b>Chazy</b>	<b>14.1</b>	<b>25.7</b>	<b>137.5</b>	<b>0.02</b>	<b>2.95</b>	<b>5.15</b>
<b>Clifton Park</b>	<b>11.3</b>	<b>24.5</b>	<b>164.0</b>	<b>0.03</b>	<b>4.71</b>	<b>6.66</b>
<b>Clintondale</b>	<b>23.3</b>	<b>67.8</b>	<b>149.0</b>	<b>0.01</b>	<b>4.37</b>	<b>4.17</b>
<b>Glens Falls</b>	<b>8.6</b>	<b>24.0</b>	<b>105.0</b>	<b>0.07</b>	<b>5.61</b>	<b>4.48</b>
<b>Granville</b>	<b>8.0</b>	<b>22.0</b>	<b>124.5</b>	<b>0.04</b>	<b>5.39</b>	<b>6.83</b>
<b>Guilderland</b>	<b>8.5</b>	<b>25.5</b>	<b>145.0</b>	<b>0.01</b>	<b>0.53</b>	<b>4.36</b>
<b>Highland</b>	<b>23.5</b>	<b>73.8</b>	<b>215.5</b>	<b>0.01</b>	<b>2.16</b>	<b>4.32</b>
<b>Lake Placid</b>	<b>0.0</b>	<b>3.0</b>	<b>NA</b>	<b>0.26</b>	<b>3.59</b>	<b>NA</b>
<b>Montgomery</b>	<b>9.5</b>	<b>59.0</b>	<b>170.5</b>	<b>0.14</b>	<b>4.08</b>	<b>3.22</b>
<b>Monticello</b>	<b>5.4</b>	<b>36.5</b>	<b>118.5</b>	<b>0.0</b>	<b>0.06</b>	<b>0.62</b>
<b>Redhook</b>	<b>13.6</b>	<b>48.4</b>	<b>185.0</b>	<b>0.11</b>	<b>3.16</b>	<b>4.52</b>

Cornell Cooperative Extension and the staff assume no liability for the effectiveness of results of any chemicals for pesticide use. No endorsement of any products is made or implied. Every effort has been made to provide correct, complete, and current pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly and human errors are still possible. These recommendations are not substitutes for pesticide labeling. Please read the label before applying any pesticide. Where trade names are used, no discrimination is intended and no endorsement is implied by Cornell Cooperative Extension.

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