The weather has been perfect for Downy Mildew, so it is not surprising that it has been confirmed all around us including Erie and Yates counties in NY.

If you haven’t already, **BEGIN SPRAYING NOW TO PROTECT YOUR CROPS**. The top 5 fungicide choices to protect against Downy Mildew AND to use once the disease is present are Presidio 4FL, Previcur Flex 6SC, Ranman 3.6 SC, and Tanos 50WG. If you are also protecting your crops against Phytophthora, then you should choose Ranman over Previcur Flex because Ranman does a much better job on Phytophthora. Gavel 50WG can also be used as a protectant on all cucurbits except pumpkins or winter squash, but it is not preferred once the disease is present. Gavel also has a 5 day PHI which limits its effectiveness on cucumbers. All of these should be mixed with a protectant—usually Bravo, but Dithane, Manzate and Pencozeb could also be used.

If you have spent fields of cucumbers or summer squash, get rid of them or keep spraying them as they can harbor disease and make control almost impossible.

**Please call us if you think you have Downy Mildew.**

Spotted Winged Drosophila found in New Jersey and Pennsylvania

Spotted Winged Drosophila (SWD) is a fruit fly native to Southeast Asia, first detected in the western US in 2008, then in 2010 was found in Florida and Michigan and has been moving our way this season. Our biggest concern are late season fruit crops like blackberries, fall raspberries and blueberries, but grapes and other thin-skinned fruit can be affected. Unlike other vinegar or fruit flies that target overripe or damaged fruit, the SWD females will attack healthy fruit to lay eggs. Because SWD are not strong fliers, human-assisted transport is likely the cause of their rapid spread.

The flies are 2-3mm long with yellow-brown bodies and red eyes. Adult males have two distinctive dots on the wings and brown bands on the abdomen. The females look similar but do not have the wing dots or bands and have a large, distinctive, saw-like ovipositor for inserting eggs into fruit. SWD larvae are white, without a distinctive head and easier to detect against darker fruit, such as cherries.

To control SWD kill the flies before egg laying. Most insecticides labeled for other fruit flies, including apple maggot, cherry fruit flies and blueberry maggot, should also control SWD, but be aware of pre-harvest limitations.—LGM

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“Serving the research and educational needs of vegetable and small fruit growers in Albany, Columbia, Fulton, Greene, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, & Washington Counties”
**Tomato Pruning & Leaf Roll**

Tomatoes often exhibit an upward curling of the leaves that causes alarm with its sudden appearance. There is a virus of tomatoes called Tomato Leaf Curl Virus, which is totally unrelated to the disorder common to New York tomatoes at this time of year. To avoid confusion we will call the disorder simply ‘Leaf Roll’. This is not a disease caused by virus, fungi or bacteria, but rather a response to stress by the plant. A number of stresses are blamed for Leaf Roll, but pruning seems to be responsible most of the time here. The problem occurs in both field and greenhouse (or tunnel) production. Heirloom tomatoes that are pruned to a single leader (greenhouse style) display severe Leaf Curl (Fig. 1). One local grower decided to prune a row of tomatoes as he always does (2-4 suckers off the bottom), and leave an adjacent row unpruned. The photo (Fig. 2) tells the rest of story; the unpruned tomatoes did not exhibit Leaf Roll, whereas the pruned tomatoes did. So, to prevent Leaf Roll we could simply stop pruning. But, this may not be the best choice either. Pruning can ripen fruit earlier and is an important pest management tool. When we prune we remove disease spores, mites, thrips and otherwise senescent tissue. Furthermore in light to moderate cases of Leaf Curl there is no documented yield loss. Then what is the right approach? This depends on the tomato variety and growing environment.

- Field grown determinate tomatoes (such as Mtn. Fresh) should be pruned lightly (~2 suckers) and as early as possible. Suckers only, no leaves. These varieties are quite susceptible to Leaf Roll.

- Field grown indeterminate tomatoes (such as Big Beef) can be pruned more aggressively (~4 suckers plus several leaves), as this will help keep shoots within the trellis and the lush growth can compensate for any reduction in growing points.

- High tunnel or greenhouse determinate tomatoes (such as BHN 589) can be pruned (both leaves and shoots) up to the first strong fork. Start early and work gradually, taking no more than 1 leaf per week.

- High tunnel or greenhouse hybrid indeterminate tomatoes (such as Geronimo) can be pruned to a single leader removing all suckers weekly and up to 2 leaves per week. These varieties are the least susceptible to Leaf Roll.

- High tunnel or greenhouse heirloom tomatoes (such as Cherokee Purple) should be pruned to multiple leaders (~2-4) removing all other suckers weekly and perhaps 1 leaf per week, based on plant nutritional status. The-

**Spider Mites in Eggplant**

Last week we started to see damage from two-spotted spider mite in eggplant. While it is difficult to see the actual mites, damage is fairly easy to spot. Look for plants that show yellowing or stippling of the upper leaf surface during early or light infections, or bronzing of the leaf surface during heavy infections. Flip the leaf over, and you may be able to see webbing and tiny (1/50 of a mm) insects. They are easily visible with a 10X magnification hand lens.

Heavy infestations of spider mite can cause yield losses by stressing and defoliating the plant. Populations can increase rapidly under favorable conditions, to the tune of 20 generations per year! Hot, dry, dusty weather is ideal for spider mites, whereas rain may suppress populations by washing mites off the leaves. In fact, heavy rain or overhead irrigation is a moderately good cultural control in many cases.

There are no recommended thresholds for spider mites, but if conditions are favorable and populations seem to be growing unchecked (IE predatory mites or other insects aren’t moving in), spraying to control mites is a good idea. Options for control are Agri-Mek 0.15EC, Acramite 50WS, Brigade 2EC or OLF, Hero, Vendex50WP and Vydate L. Generally two applications of miticide specific products like Agri-Mek 5-7 days apart will give good control, because you will get adults and then any eggs that have hatched since the initial application. Note that only one application of Acramite is allowed per season.

If you seem to have trouble with spider mites every year consider making some cultural changes that might reduce issues. Don’t over-fertilize eggplant, and avoid applications of broad-spectrum insecticide which might kill of predatory insects but will not kill spider mites. And check transplants carefully to ensure you aren’t bringing in mites with your plants. -CLS
White mold (Sclerotinia sclerotiorum) generally appears on tomato plants as they begin to flower. You will first see water-soaked areas on the flowers and places where the infected flowers may have fallen and gotten lodged – like the stem joints. The infection quickly kills stems, which become dry and corky. Lesions may also appear right at the soil line if there is plant debris touching the stem. Infections will show white, cottony mycelium that produces large, irregularly shaped, black sclerotia. These sclerotia survive in the upper surface of the soil, and from them fruiting bodies called apothecia will germinate. Millions of spores will be produced from a single apothecia, and since one sclerotia can produce 5-6 apothecia you can see that this disease can become a problem quickly. High soil moisture and temperatures of 49° to 59°F favor apothecial production. Infection and disease spread are determined by the weather. White mold is favored by cool (59° to 70°F, 15° to 21°C), moist (16 to 72 hours of continuous wetness) conditions. Disease is most severe in low-lying parts of the field.

White mold is generally a minor disease of tomato and specific control measures are usually not warranted. This disease can be difficult to control because infection is caused by both airborne ascospores and soilborne sclerotia. White mold also has a very wide host range, making it difficult to use crop rotation effectively, but deep plowing may help reduce sclerotia. Since most infections are initiated by airborne ascospores, sanitation methods do not provide effective white mold control. In years with severe white mold infections, sclerotia in the soil have the potential to create a long-term White mold resistance does not exist in tomatoes. Decreased planting densities may create a drier environment and reduce white mold infection. Burying your drip line helps reduce the soil wetting at the surface, so this cultural practice may actually have more impact on the long-term control of white mold than anything else mentioned.

### Sweet Corn Insect Trap Counts for the Capital District

<table>
<thead>
<tr>
<th>Location</th>
<th>ECB Z-Race</th>
<th>ECB E-Race</th>
<th>Corn Earworm</th>
<th>Fall Armyworm</th>
<th>W. Bean Cutworm</th>
</tr>
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<tbody>
<tr>
<td>Northern Washington</td>
<td>35</td>
<td>4</td>
<td>0</td>
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</tr>
<tr>
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<td>Northern Rensselaer</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Central Saratoga</td>
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<tr>
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</table>
Editors Note: Late Blight was confirmed in Jericho Vermont this week, and is in several locations in Maine. We will continue to follow the disease incidence and report to you each week. Please continue to contact us with your concerns, we have had several calls from growers that have Zonal Leaf Spot and also have seen Necrotic Pith disease, both of which look very similar to Late Blight on tomatoes. (LGM)

Managing Late Blight In Potatoes During Late Season
Efficacy of fungicides for late blight can be affected by crop growth stage and temperature. As potato plants senesce there is no new growth to protect, leaves become less suitable for late blight development, and protection of stems becomes of primary importance. It is important to manage stem infections because pathogen spores that form on stems can be moved by rain or irrigation down the stem, into the soil to the tubers resulting in tuber infection. Ranman, Revus and SuperTin are good choices of fungicides to use at this time. When day temperatures are in the 70s, Curzate is also a good choice. SuperTin should not be applied with another pesticide that is an EC formulation or with a spreader sticker as this could burn leaves. Also, as specified on the SuperTin label, the field needs to be posted and the applicator needs to be in a closed cab. Ranman plus SuperTin is considered a good combination. -M. McGrath, Long Island Fruit and Vegetable Update

<table>
<thead>
<tr>
<th>Crop</th>
<th>Seeding Rate</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Ryegrass</td>
<td>10-30 lbs/acre</td>
<td>Nitrogen Scavenger  &lt;br&gt;                   Stabilizes Soil aggregates &lt;br&gt; Reduced Soil Erosion &lt;br&gt; Plant in Late August – Early September</td>
</tr>
<tr>
<td>Medium Red Clover</td>
<td>10 lb/acre</td>
<td>Fixes Nitrogen Well &lt;br&gt; Reduces weed pressure &lt;br&gt; Reduces soil compaction &lt;br&gt; Attracts beneficial Insects &lt;br&gt; Best with a nurse crop &lt;br&gt; Plant in early August</td>
</tr>
<tr>
<td>Hairy Vetch</td>
<td>15-30 lbs/acre</td>
<td>Good Nitrogen Fixer &lt;br&gt; Reduces weeds &lt;br&gt; Helps reduce surface hardness &lt;br&gt; Stabalizes soil aggregates &lt;br&gt; Best if used along with a nurse crop &lt;br&gt; Plant in Late August through September</td>
</tr>
<tr>
<td>Forage Turnip/ Rape</td>
<td>5-12 lbs/acre</td>
<td>Provides weed control &lt;br&gt; Reduces surface hardness &lt;br&gt; Good nitrogen scavenger &lt;br&gt; Slow to establish, requires weed free seed bed &lt;br&gt; May suppress following cucurbit crops** &lt;br&gt; Plant in August</td>
</tr>
</tbody>
</table>

Pumpkins and winter squash: start with Quintec at 4 –6 oz/acre. Remember to add a protectant like chloro-thalonil (Bravo, Initiate, etc.). Another material that both organic and conventional growers can use is sulfur. Sulfur is unique in that it not only acts as a protectant, but has some vapor action as well that can help reduce PM from getting a good start. I would recommend Microthiol Dis-perss (OMRI listed) at 2 –10 lbs per acre, but I would lean towards the 3 – 5 lb rate. However, do not use sulfurs when temperatures are above 90o F, especially when humidity levels are going to be high. The label also recommends that you avoid applying it under intense sun-shine, so evening applications may be required. If you start with Quintec, the following week you should rotate to Procure (8 oz/acre) or Rally (5.0 oz/acre) mixed again with a protectant. Then in week 3 go back to Quintec plus a protectant and continue to rotate these materials.

Edible skinned cucurbits like summer squash—do NOT use Quintec. Instead, go with Procure at the highest labeled rate (8 fl oz). As with other products, resistance management is important, so make sure to alternate products with a different mode of action and tank mix a protectant into formulations that don’t include one already. —CDB
se varieties, in this environment, are the most susceptible to Leaf Roll. (Source: Judson Reid, Cornell Vegetable Program VegEdge Weekly Update, July 27, 2011; Vol. 7, Issue 18)

Hornworms have arrived in tomato fields. These large caterpillars typically appear in small numbers and cause their impressive feeding damage to just a few leaves or plants. Larvae consume large amounts of foliage on peppers, tomatoes, eggplant, potatoes, and related solanaceous weeds. Now is the time to scout, by searching leaves for damage, frass or larvae. They are very well camouflaged. Often you’ll find defoliated stalks or pellet-like dark-green droppings before the caterpillar is located.

**Tomato Hornworm**

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**Description:** There is one generation per year in northern areas. The adults are large moths, predominately gray or gray-brown with lighter markings. They are commonly referred to as sphinx, hawk, or hummingbird moths. The adult tomato hornworm (Manduca quinquemaculata) is known as the five-spotted hawk moth. The wingspread may reach five inches and the hairy, robust abdomen has yellow spots. They emerge from overwintered pupae in the soil in late spring or early summer. The moths are commonly seen at dusk, hovering hummingbird-like over beds of petunias and other flowers with long corollas. Nectar is extracted through their long, coiled, tube-like mouthparts. The spherical greenish-yellow eggs are deposited singly on the undersides of host plant leaves. The eggs hatch in approximately one week and larvae begin feeding on foliage. Larvae feed for 3-4 weeks, molt five times, and may reach four inches in length and 1/2 inch in width when full grown. They are green with a distinct “horn” on the top of the tail end. The sides of the tomato hornworm are marked with a series of white marks resembling a “v” laying on its side and pointing toward the head and the tip of the horn is black. Full-grown larvae burrow 3-4 inches into the soil and form dark brown, two-inch long pupae. A sheath for the mouthparts projects from the head of the pupa and curves downward, resembling the handle of a pitcher.

What are the white cocoons all over hornworm caterpillars? A parasitic wasp, Cotesia congregatus, is an important and fairly common natural enemy of the hornworms. The wasps lay their eggs inside the body of the caterpillars. After feeding within the caterpillar body, the larvae of the wasps eat out through the skin and spin the cocoons on the caterpillar surface. The adult wasps later cut out circular lids and escape from the cocoons to attack other hornworms. If one is hand-picking hornworms, those with cocoons of parasitic wasps on their back should not be killed.

**Controls.** There is no set economic threshold for this pest in tomato. Where damage is unacceptable, or if there are high numbers, foliar sprays can be used. Use a selective material that will conserve beneficial insects, because those predators and parasites are very likely keeping your aphid populations under control. Insecticides which are specific for caterpillars include Bacillus thuringiensis (Bt) kurstaki or aizawai strain (Dipel DF, Agree, or Xentari, etc.), indoxycarb (Avaunt), tebufenozide (Confirm 2F), spinosad (Entrust), spinetoram (Radiant), or Coragen. Several synthetic pyrethroids are also labeled (note: these could result in aphid outbreaks). Although Bt usually works best on small larvae, in this case it will work very well even against large hornworms. In peppers, any controls used for European corn borer should control hornworms. -R. Hazzard, UMass Vegetable Notes, Volume 22 No 14.
### Weekly and Seasonal Weather Information

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<tr>
<th>Site</th>
<th>Growing Degree Information Base 50°F</th>
<th>Rainfall Accumulations</th>
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<td>Glens Falls</td>
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<td>Guilderland</td>
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<td>Granville</td>
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<tr>
<td>Valatie</td>
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</tr>
</tbody>
</table>

NA¹—The Granville weather station was established this year (2011) so there will be no 2010 data reported as we have no records.

² The Hudson site has been removed from the NEWA network. No more data will be reported for this site.

### Summer Meeting Schedule

**Thursday, August 25 - Raspberry High Tunnel Open House**, 2 to 6 PM. NYSAES Geneva, Lucy-Robbins Farm. The Open House is free and open to the public. Registration is requested for logistics and planning. Please register with Lou Ann Rago at (315) 787-2394 or lar38@cornell.edu. If you are interested in attending this event, please contact Laura McDermott. If there is enough interest, we might be able to get a van and ride together.

**August 30-31 - Bejo Seeds Field Days**—Beginning at 10:00 am, at the Bejo Research and Demonstration Farm on the intersection of Pre-Emption Road and Healey Road in Geneva, NY. Starting at 10 am. The Field Days will feature vegetables for Northeastern Vegetable Growers, from Asparagus to Zucchini and everything in between, in both conventional and organic seed. For more information, driving directions and to reserve a spot for lunch call BEJO SEEDS at 315-789-4155.

**Thursday, Sept. 8—Vegetable Meeting for Beginning Farmers** Are you thinking of growing vegetables to sell? This meeting is designed to introduce you to some key considerations in making the decision. 7:00 to 9:00 P.M. at Mike and Kris O'Brien's residence, 876 Pearse Rd. Niskayuna, NY 12309-2910. Mike and Kris O'Brien will share their thoughts about starting a vegetable farm. The O'Briens started their farm within the last few years and have learned much about the process of growing vegetables to sell. Extension Educators Laura McDermott, Crystal Stewart and Chuck Bornt will discuss the steps necessary to start a successful vegetable farm. Extension Educator Stephen Hadcock will share ideas on market analysis.

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**Websites of Interest**

- Diagnose pest and disease problems using color pictures: [http://vegetablemdonline.ppath.cornell.edu/](http://vegetablemdonline.ppath.cornell.edu/)
- Cornell Guidelines for fruit and vegetables: [http://www.nysaes.cornell.edu/recommends/](http://www.nysaes.cornell.edu/recommends/)
- USDA Fruit and Vegetable Market News: [www.marketnews.usda.gov/portal/fv](http://www.marketnews.usda.gov/portal/fv)

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