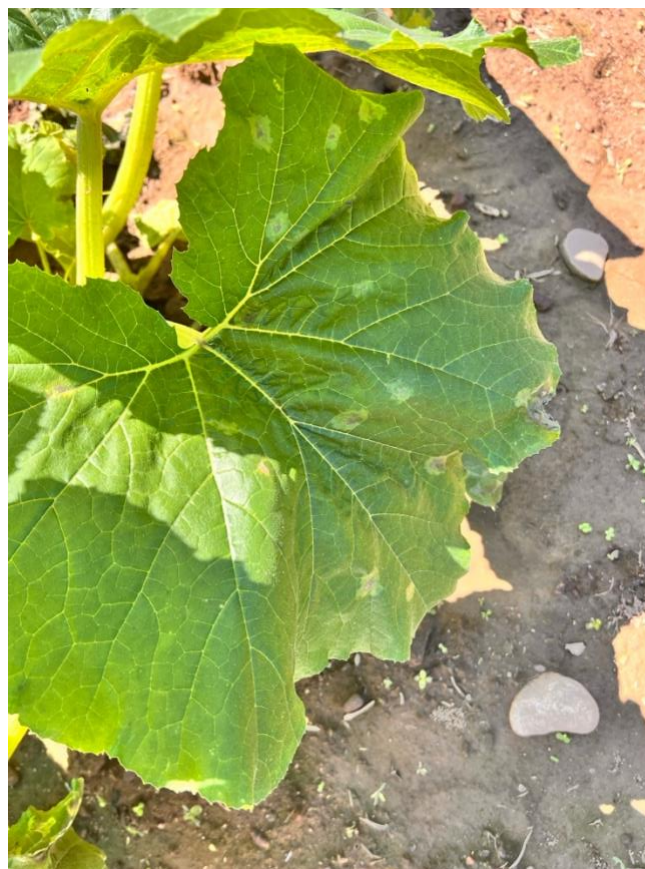


July 12, 2024

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### What to be on the lookout for...

#### Phytophthora blight in cucurbits



When contaminated soils are saturated for several hours and temperatures are relatively warm, 75°F to 85°F range, *Phytophthora capsici*, oomycete/water mold thrives and spreads quickly. So, be on the lookout for this disease.

*P. capsici* cannot be managed by fungicide applications alone; successful disease control is achieved only by a season-long effort to manage water and other cultural practices. The single most effective way to control this disease is to prevent its movement into clean fields by

equipment, humans, or infested water. Plant susceptible crops (tomatoes, peppers, eggplant, and all cucurbit species) in fields that have no history of this disease and are well-drained. Plant non-vining crops on raised beds, avoid planting in low areas where water puddles, and improve drainage by sub-soiling after heavy rain events. Promptly disk under small areas where the disease appears along with a border of healthy appearing plants. Avoid working in wet fields and compacting the soil. Biofumigate the infested field with mustard cover crop.

A preventive application schedule is needed to ensure effective control in known infested fields. Alternate among targeted fungicides to manage resistance. Spray options here: <https://nevegetable.org/crops/disease-control-7>

### **Cucurbit downy mildew**

The nearest locations from us where CDM has been reported are Salem County in New Jersey (June 19) and Cattaraugus County in New York (June 29). This [CDM map](#) gets updated as new CDM cases are reported.



Cucurbit downy mildew on upperside and underside of cucumber leaf

Growers should consider putting down a preventive spray such as chlorothalonil (Bravo) and mancozeb (Dithane F45). For organic growers, Copper and Zonix are options. If infection does occur, symptoms will start to appear as soon as 5 days afterwards.

Thanks to Margaret McGrath at Cornell University detailed information about downy mildew and its management for conventional and organic systems:

[\*\*Biopesticides for Managing Cucurbit Downy Mildew Organically\*\*](#)  
[\*\*Mobile Fungicides for Managing Three Major Cucurbit Diseases\*\*](#)

#### **If it arrives to your farm:**

Mobile fungicides are needed to effectively manage downy mildew on the underside of leaves but are at risk for resistance development. For pesticide resistance management, alternate among chemical classes and apply these products with protectant fungicides; note that this is a label requirement for some products. Orondis Ultra, Ranman, Zing! or Gavel, and Omega, are considered the most effective choices.

Efficacy recently in some research plots and commercial fields has been substantially reduced compared to when first available for several fungicides, including Revus, Forum, Presidio, Previcur Flex, Curzate, and Tanos. These changes are likely due to resistance having developed. Revus has exhibited variable control across crop types; efficacy has been poor on cucumber and excellent on pumpkin. Curzate and Tanos have limited residual activity, which partly explains poor control when applied on a weekly schedule. Phosphorous acid fungicides are not as effective for this DM as for others. Ridomil Gold, and the QoI fungicides (Quadris F, Quadris Opti, Flint Extra, Cabrio, Pristine, and Reason are no longer recommended because of resistance. (Source: 2024 Cornell Integrated Crop and Pest Management Guidelines, Cornell Cooperative Ext Publication)

### **Verticillium wilt in eggplant and tomatoes**

It can also infect pepper, cucurbit, and many other plants. A yellowing of lower leaves followed by wilting is the first sign of disease. Lesions have a characteristic V-shaped pattern which is widest at the leaf margin. Symptoms can appear on one side of the plant or on one side of a leaf, more prevalent in eggplant and tomatoes. When the stems of infected plants are cut lengthwise, the vascular tissue exhibits a brown discoloration. *Verticillium* species can persist in the soil for many years in the absence of susceptible plants. Follow a 4- to 5-year crop rotation with non-solanaceous and non-cucurbit crops to reduce inoculum levels in fields. Include grain crops in the rotation. Control weeds as many weeds are susceptible to *Verticillium*. Remove and destroy infected plant material after harvest. There are no effective chemical controls.



### **Tomato Spotted Wilt Virus (TSWV)**

TSWV causes black, small, irregularly shaped lesions on tomato foliage. Stems and shoots may exhibit black streaks. Severely affected plants may wilt and become stunted. Fruit develops chlorotic rings, patches, or lesions. Numerous landscape plants, greenhouse ornamentals, and weeds may be reservoirs of the virus. Thrips transfer the virus in a persistent manner. The virus is not seed-borne.

There is no cure or chemical treatment for plant viruses. Discard affected plants. Eradicate weeds that may be hosts. Control thrips populations. Inspect plant material at

arrival. Do not grow vegetable transplants and ornamental bedding plants in the same greenhouse.



TSWV causes black, small, irregularly shaped lesions on tomato foliage

### **Bacterial canker in tomatoes**

Bacterial canker is one of the most devastating bacterial pathogens of tomato. The pathogen enters the tomato through natural openings, wounds (roots, stem, or fruits), or from infected seeds. Once inside a plant, this bacterium multiplies in the cells of plants that are responsible for water transport. A slimy biofilm is produced by the bacteria, which aids in pathogen colonization and movement. If conditions are favorable (77-86 °F), disease symptoms can develop in approximately a week.



Bacterial canker of tomato often causes brown and yellow margins on leaves and stem canker and pith necrosis develop as a result of bacterial canker.

- Recommendations for next season would be, buy hot-water treated seed or seed certified to be free of bacteria. Hot water seed treatment can be done at home. Treat seed for 25 minutes at 122°F. Use copper or streptomycin on plants before transplanting.
- Disinfect stakes before reusing.
- Plow under infected field debris or remove the crop debris and rotate out of tomato or pepper for a minimum of 3 years.
- *Bacillus subtilis* strain QST 713 (Serenade ASO) is labeled for both field and greenhouse use. Also, Copper-based products can help protect healthy plants.
- See [New England Vegetable Management Guide](#) for labeled pesticides.

## Corn earworm

Trap capture was 0.66 moths/night this week in a farm in Berlin; 0.3 moths/night in Shelton, 0 moth in South Windsor.

Table. Spray Intervals for Corn Earworm based on moth captures in Heliiothis net traps.

Moths/Night	Moths/Week	Spray Interval
0 - 0.2	0 - 1.4	no spray
0.2 - 0.5	1.4 - 3.5	6 days
0.5 - 1	3.5 - 7	5 days
1 - 13	7 - 91	4 days
Over 13	Over 91	3 days

## European corn borers

ECB are continuing to be trapped, but in low numbers (4 moths/trap/week in Berlin; 6 in Glastonbury). Corn with newly emerging tassels should be scouted weekly for the presence of ECB larvae by inspecting the tassels of 50 to 100 plants, in groups of 5 to 20 plants throughout the field. Treat if more than 15% of the plants have one or more larvae present. Use of selective products to control ECB will conserve natural enemies of aphids and ECB.

### Continue to be othe lookout for

- Bacterial leaf spots on pepper
- Pepper maggot
- Leaf mold in tunnel tomatoes
- Early blight of tomatoes
- Hornworms
- Onion thrips
- Squah vine borers (17 moths/week captured in North Stonington; 4/week in Glastonbury; 10/week in Berlin)
- Cucurbit powdery mildew
- Bacterial wilt of cucurbits
- Squash bugs
- Striped cucumber beetles
- Mexican bean beetles
- Potato leaf hopper

***Thanks for reading!***

This report was prepared by Shuresh Ghimire, UConn Extension. All photos in this publication are credited to Shuresh Ghimire unless otherwise noted.

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**Contact us with any  
vegetable production  
related questions!**

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