

VegNet Vol. 15, No. 8. June 23, 2008
Ohio State University Extension Vegetable Crops
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Cucurbit Downy Mildew Update June 23, 2008 by Sally Miller

Downy mildew was reported on cucumbers near Aylmer, in Elgin County, Ontario, Canada on June 20. ♦ This area is southeast of London in southern Ontario, across Lake Erie ♦ and north of Ashtabula, OH. ♦ There have been no reports so far of cucurbit downy mildew in Ohio, Michigan or other northern tier U.S. states. ♦ It has reported in Florida, Louisiana, Georgia and South Carolina.

Ohio cucumber growers in the Lake counties, particularly in NE Ohio, should take precautionary measures including stepped-up scouting and application of protectant fungicides. ♦ ♦ One of the following fungicides, tank mixed with Bravo (0 days PHI), Manzate ♦ or Dithane (5 days PHI), and applied on a 7-10 day schedule, will provide protectant activity (products must be alternated to avoid development of fungicide resistance): Gavel (5 days PHI), Previcur Flex (2 days PHI), Tanos (3 days PHI), Curzate (3 days PHI), Ranman (0 days PHI) or Presidio (2 days PHI). See detailed management recommendations below. ♦

Current weather conditions (cool and rainy) are favorable for downy mildew development. ♦ It is very important to take precautionary measures in cucumbers. ♦ Cucumber is the most susceptible of the cucurbits to downy mildew, and in the past we have not seen downy mildew on squash and pumpkins until several weeks after its appearance on cucumbers. ♦ However, growers should step up scouting of pumpkin and squash fields at this time and apply protectant fungicides if weather conditions continue to be favorable and particularly after the disease has been reported in nearby cucumbers.

The downy mildew pathogen does not overwinter outdoors in Ohio and other northern states. ♦ It is an obligate pathogen, which means that it cannot survive for long periods away from a living host. ♦ Downy mildew spores are sensitive to drying and UV irradiation; they do not survive long under dry, sunny conditions. ♦ However, they are protected by clouds and moisture in the atmosphere.

♦ Downy mildew symptoms include yellow spots on the upper surface of leaves that eventually turn brown and die. ♦ Entire leaves may also die if the disease is not controlled. ♦ In young lesions, a downy, sparse growth may be observed on the lower side of the lesion under dewy, foggy or humid conditions. ♦ Downy mildew symptoms can be confused with those of other diseases such as angular leaf spot (a bacterial disease), environmental damage and chemical burns. ♦

If you find what looks like downy mildew in cucurbit fields, bring or send a sample (overnight delivery) for confirmation to Sally Miller or Fulya Baysal-Gurel, Department of Plant Pathology, The Ohio State University, OARDC, 1680 Madison Ave., Wooster. OH ♦ 44691, ph. 330-263-3838, or to the C. Wayne Ellett Plant and Pest Diagnostic Clinic, OSU, Kottman Hall, 2021 Coffey Road, Columbus, OH 43210, ph. 614-292-5006 (c/o Nancy Taylor). ♦ We will examine the lesions

under the microscope to determine if the tell-tale spores characteristic of downy mildew are present.

Managing Downy Mildew

1. Use resistant or moderately resistant varieties (cucumber and melons).
2. Direct-seed or use locally produced transplants. ♦ Avoid transplants from greenhouses producing winter cucumbers or areas where downy mildew persists in the winter, e.g. the southern U.S.
3. Keep abreast of the movement of downy mildew by regularly checking the Cucurbit Downy Mildew Forecast website operated by North Carolina State University (<http://www.ces.ncsu.edu/depts/pp/cucurbit/>). ♦ This website is partially supported by your check-off dollars paid to the Ohio Vegetable and Small Fruit Research and Development Program.
4. Scout fields regularly for the first appearance of downy mildew symptoms. ♦ Downy mildew is favored by cool, moist conditions. ♦ Step up scouting under these conditions. ♦ Send samples to lab for confirmation if downy mildew has not been reported in the area.
6. Fungicide application:
 - ♦♦♦♦♦♦♦♦♦ Protection before disease appears: Apply one of the following fungicides on a 7–10 day schedule, tank mixed with Bravo, Manzate or Dithane: Gavel, Previcur Flex, Tanos, Ranman, Curzate or Presidio. ♦ Alternate products. ♦ The application interval can be lengthened under dry conditions. ♦ Use the shorter interval under cool, moist conditions.
 - ♦♦♦♦♦♦♦♦♦ Management after disease appears: Apply one of the following fungicides on a 5–7 day schedule, tank mixed with Bravo or Dithane: Previcur Flex, Tanos, Ranman or Presidio. ♦ Alternate products. ♦ The application interval can be lengthened under dry conditions. ♦ Use the shorter interval under cool, moist conditions.

See product labels for fungicide rates.

Note that the fungicides recommended above have different preharvest intervals (PHI). ♦ Keep this in mind as fungicides are applied after harvesting begins.

Product	PHI (days)
Bravo Weather Stik	0
Ranman	0
Previcur Flex	2
Tanos	3
Dithane or Manzate*	5
Gavel*	5
Presidio	2
Curzate	3

*labeled for cucumbers, melons, summer squash, watermelon (NOT pumpkin)

Crop Reports by Hal Kneen and Brad Bergefurd

Southeast Ohio report June 11, 2008

Heavy rains June 4 and 5 dumped four to eight inches of rain on fields. Some wash outs of newly planted fields. Some sweet corn fields had a couple of feet of water standing on them, good news, the seedling still

came up by Sunday June 8th. Fertilizing crops especially tomatoes, peppers and melons. Worried about weed control after heavy rains.

Tomatoes first fruit set dime to silver dollar size and second set is pea size or flowering. Some early blight is being spotting from Lawrence County through Meigs county. Keep applying fungicide applications on a routine basis. Timber Rot (*Sclerotinia sclerotiorum*) found in two tomato fields, whitish fungal growth along stem and black sclerotia (black pellet-like bodies, like mice turds) found in or near stem. Form under moderate temperatures but high humidity. Remember to rotate crops and avoid other susceptible crops like alfalfa, celery, lettuce, cabbage, beans (including soybeans), eggplant, peppers, or tomatoes. Dr. Sally Miller suggests that Topsin M is the fungicide of choice. Remove dead plants from field to reduce spread of sclerotia. Some potato beetle problems on tomatoes and potatoes.

Sweet Corn-- First corn earworm trapped in Meigs County, four moths trapped between June 4-9. With temperatures over 80 + each day Celeste Welty suggests spraying every four days(see page 251 in 2008 Ohio Vegetable Guide). Sweet corn grown using plastic mulch is tasselling and ear length is 3-5 inches. expect first corn around June 23rd.

Peppers, melons off to a slow start however warmer night temperatures have improved their leaf color and growth this past week.

Pumpkin transplants and seed are being planted

Harvested cabbage and broccoli for local markets.

June 23, 2008 Update. A hail storm hit part of the region on June 16, 2008 causing damage to many fruiting vegetables especially tomatoes. Catfacing and open locules on tomato fruit reported at several locations caused by cold weather at time of flower initiation.

Pictures (by Hal Kneen) of sweet corn grown using clear plastic for 2008 crop and Applause tomato field and fruit,



Sweet corn as of June 11, 2008



Picture from June 11, 2008. Sweet corn harvest began last Friday in southeast OH on June 20, 2008



Applause tomatoes on plastic and drip irrigation. June 11, 2008



Close up view as of June 11, 2008

South West OH June 20, 2008

Some storms blew across the southern Ohio area on Friday night and Sunday night dropping anywhere from 1 to 2 inches of rain on the area. Some crops were totaled out from a hail storm on Monday afternoon in Pickaway and Fayette county growing areas. These areas received severe thunderstorms with ping pong ball sized hailstones, damaging many vegetable and melon plantings to the point of having to be replanted.

Harvest of strawberries continues but the season is winding down or is complete for many growers. Sweet corn early planted is in full tassel and silking with first harvest expected for the 4th of July. Harvest of summer squash, cabbage, snap and sugar peas, snap beans, spring broccoli and cauliflower, sweet onions, bunching onions, red beets, radish, greens and lettuce continues. Seeding of fall cauliflower and broccoli continues. Harvest of high tunnel tomatoes is in full swing with beautiful fruit quality being reported. Melons are about the size of softballs or larger and should be into harvest by the 4th of July.

Growers continue to sidedress nitrogen on sweet corn and pumpkins. Planting of pumpkins and winter squash continues. Some irrigation is being applied to newly transplanted vegetable and melon fields.