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Ohio State University Extension Vegetable Crops On
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Ohio Cucurbit Downy Mildew Update by Sally
Miller, State Extension Specialist, Ohio State University
Vegetable Pathology, July 9, 2007

Downy mildew has now been confirmed on cucumbers in Erie, Medina and Lorraine Counties and on cantaloupe in Holmes County. It is difficult to determine how widespread the disease has become on cucumbers or other cucurbits throughout the state, since outbreaks are not all reported. However, the risk is considered high throughout northern Ohio. While hot, dry weather does not favor disease development, cool nights, heavy dews and occasional rainstorms appear to be enough to allow outbreaks when the pathogen is present. Cucumbers throughout the state should be scouted often and protected with fungicides. Melon, squash and pumpkin growers should also scout and protect these crops with fungicides now that we are seeing the disease on cantaloupe, which is less susceptible to downy mildew than cucumber. Fungicides available for downy mildew management are Ranman, Previcur Flex,

Tanos and Gavel, which must be tank-mixed with Bravo or Dithane (or other formulations of chlorothalanyl or mancozeb) and alternated (see table below for pre-harvest intervals). Organic growers should apply OMRI-approved, copper-based fungicides on a weekly basis.

Product	PHI (days)
Bravo Weather Stik	0
Ranman	0
Previcur Flex	2
Tanos	3
Dithane	5
Gavel	5

The downy mildew forecast from the North Carolina State University Cucurbit Downy Mildew website (<http://www.ces.ncsu.edu/depts/pp/cucurbit/forecasts/c070621.php>), published on Thursday July 5, is shown below. The forecast will be updated tomorrow (Tuesday, July 10).

Trajectories from the other (more northern) sources move generally east throughout the forecast period. Conditions are favorable for survivable transport and deposition early in the

period and then become unfavorable then mixed for the duration. High Risk to cucurbits in central and western NY, western MA, northeastern OH, southern Ontario, Canada, PA and MD on Thursday. Strongly Moderate Risk to cucurbits in northwestern OH, the DelMarVa peninsula and southern NJ. Moderate Risk to cucurbits in northern CT and northern RI, northern MD and northern DE. Low Risk beyond on Thursday. Friday...Moderate Risk to cucurbits in south central and southeastern NY and the northeastern corner of PA. Weakly Moderate Risk to cucurbits in northern NJ and Long Island, NY, as well as northwestern PA and western NY. Low Risk to cucurbits beyond. Saturday...Weakly Moderate Risk to cucurbits in central NY. Low Risk to cucurbits beyond. Weakly Moderate Risk to cucurbits in eastern NY, VT and NH on Sunday. Low Risk to cucurbits beyond. Monday...Moderate Risk to cucurbits in western and central NY, southeastern MI, southwestern Ontario, Canada, northern OH and PA. Weakly Moderate Risk to cucurbits in southern NH and southern VT, MA, northern CT and northern RI and southeastern OH. Low Risk to cucurbits beyond on Monday.

Some confusion with powdery mildew We have received a number of cucurbit samples with yellow spots on the top of the leaves and sporulation underneath (see image below), that were thought to be downy mildew. However, on closer inspection, the fungus sporulating under the lesions is the pathogen causing powdery mildew. Growers and scouts are used to looking for powdery mildew on the upper leaf surface first, and don't always associate it with yellow spots. However, this can happen and we are seeing more of it than usual this year. Powdery mildew sporulation is whiter and more diffuse and flat in appearance than that of downy mildew.

Upper surface (pumpkin) Lower surface



Cucurbit Powdery Mildew by Sally Miller, State Extension Specialist, Ohio State University Vegetable Pathology, July 9, 2007

Powdery mildew has been observed on cucurbit crops throughout the state during the past week or two. This is a bit early for powdery mildew, but hot, dry weather favors disease development. Symptoms may be confusing (see downy mildew, above), since in some cases sporulation of the fungus is first seen on the undersides of leaves, with

diffuse chlorotic (yellow) spots on top. The predominant powdery mildew species causing the disease is aggressive at high temperatures and cucurbits crops need to be treated preventatively – as soon as powdery mildew symptoms and signs appear in the crop. According to Tony Keinath, Clemson plant pathologist, Look at 50 leaves on the bottom half of at least 10 plants per field (5 leaves per plant). If any powdery mildew is found, spray immediately.

There are a number of fungicides that can be used for powdery mildew management, including sulfurs (e.g. Microthiol), chlorothalanil (e.g. Bravo), myclobutanil (Nova) and triflumizole (Procure). Quintec (quinoxifen) is a very effective powdery mildew fungicide but is labeled for melons only. Since Nova and Procure are the same type of fungicide, only one of them should be used and alternated with products with a different mode of action. Tank-mixing products such as Quintec, Nova or Procure with a sulfur fungicide will provide broad-spectrum protection, although it should be noted that sulfur can be phytotoxic to melon under certain conditions. Insensitivity of the powdery mildew fungus to strobilurin fungicides such as Quadris and Pristine have been reported, so if one of these fungicides is included in the program, particularly to manage other diseases, it must be alternated with a fungicide with a different mode of action and tank mixed with a contact fungicide such as sulfur or chlorothalanil.

Crop Reports by Ron Becker Matt Hofelich, Mark Koenig and Hal Kneen

July 4th Northern Ohio Vegetable Crop Report

Insects

Flea beetle infestations have been observed in cole crops. Japanese beetles are starting to emerge and silk clipping activity has been noted. European corn bore trapping has resulted minimal catches

Corn Ear worm trapping has also resulted with minimal catches

Stripped Cucumber Beetle activity at present is nearly non-existent

Diseases

Downy Mildew continues to be the major disease of concern at present in cucurbits. Growers are continuing to scout fields and are on a very tight spray schedules. The North Central Station has been receiving and submitting cucurbit leaf samples to Sally Millers lab for diagnosis. There have been some reports of Black Rot in cabbage. Tomato disease pressure at the present is minimal.

Crops

Sweet Corn harvest has begun for corn grown under plastic. Prices on early locally grown corn was \$5.00 / dozen ears were small but overall quality good. Green

beans, beets, peas and summer squash harvest has begun. Commercial pickle harvest began in the area on July 1. Melons are in blossom with some set being observed. We have received reports of blossom drop on tomatoes.

Irrigation

Irrigation continues because of extremely dry conditions. Much of the northern Ohio area has recorded less than 1 inch of precipitation since June 1. All types of irrigation can be observed in the area as growers continue to hope for rain. The North Central Station has been irrigating since June 1 due to dry conditions.

Walking the Fields Tour

August 8, OSU Extension and the North Central Ag Research Station will again sponsor the Walking the Field Tour. The tour will originate for the North Central Station starting at 6:00 PM. The focus this year will be on types of irrigation, vegetable crops and new transplant planting technology.

Wayne County IPM weekly vegetable crop report – 7/07/2007

Diseases – Downy Mildew continues to be a problem in the West Salem area. Recent rains may widen the area of infestation as environmental conditions become more suitable for fungal growth. Most cucumber and cantaloupe plantings are on a spray schedule that includes

both protective and curative sprays. Early blight is being found in about half of the area tomato fields with growers using a 10–14 day fungicide spray program . Bacterial canker was found in a tomato planting in Medina County. Powdery mildew has now been found in both cucumbers and pumpkins. Verticillium wilt is starting to show up in area eggplant fields.

Insects and other notes – Sweet corn harvest should start approximately 7/10/07 from fields that were grown under plastic. Threshold levels of corn borer are being found in several fields ranging from pre-tassel to silking, with corn borers ranging from 1st to 4th instar and ECB moths still being seen in the fields (though very few are being caught in traps). Ear damage by corn borer is generally less than 5%. Japanese beetle and rootworm adults have started to emerge, though silk clipping has been light so far. Squash bug eggs are being found on summer squash, winter squash and pumpkin plants. Squash vine borer moths have also been found in the area. Moths of the hornworms have been seen in the area, however no larvae have yet been found on tomato plants.

Meigs County Report From July 5, 2007

Insect report for past three weeks:

June 13– 21	0 corn ear worm moth, 1 Beet army worm moth
June 21–27	1 corn ear worm moth, 3 Beet army worm moth

June 27–July 4th 4 corn ear worm moth, 1 Beet
armyworm moth

Two storms came through area on evening of June 27 and again on July 4th from the southwest US.

Harvesting tomatoes, sweet corn, peppers, cabbage, cucumbers, green beans. Recent rains of June 27 and July 4th helping growers to supplement irrigation. Sweet corn and melon vines have jumped in size due to extra water. Some problems with high winds and rain as soil and moisture have increased disease problems. Seeing some early blight in tomatoes.

Sweet corn has been clean with occasional corn ear worm and European corn borer found in a few ears (one in one hundred). Farmers having to spray on a routine basis due to high temperatures, though moth counts are low. Have seen a few tassels bent over due to European corn borer injury.

Heavy wind and torrential rains caused some low lying areas to become flooded. With the high temperatures and wet root systems some phytophthora found in pepper and tomato fields.