



The Ohio State University Extension Vegetable Crops

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Downy Mildew on Cucumbers in More Northern Ohio Counties - *Sally Miller, OSU Department of Plant Pathology*

Downy mildew was confirmed in cucumbers in Huron County on July 8 and Geauga County on July 9. Our sentinel plots in Fremont and Piketon are still negative. Northern Ohio cucumber and melon growers should commence preventative fungicide programs if not already started. See recommendations below. Please note that I have updated the recommendation for Zampro – a new oomycete fungicide.

For immediate reports on downy mildew outbreaks, follow me on Twitter @OhioVeggieDoc.

SUGGESTED DOWNY MILDEW MANAGEMENT PROGRAMS FOR CUCUMBERS AND MELONS:

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: Presidio, Ranman, Previcur Flex, Tanos, Curzate or Gavel (Gavel already contains mancozeb). 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: Presidio, Ranman, Previcur Flex, or Tanos. 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.

Always tank mix targeted fungicides with a protectant fungicide and alternate targeted fungicides with different modes of action (see FRAC Codes below). Note that the fungicides recommended above have different pre-harvest intervals (PHI). Keep this in mind when fungicides are applied after harvesting begins.

Product	PHI (days)	FRAC Code	Comments
Chlorothalanil e.g. Bravo Weather Stik	0	M5	Protectant; tank mix with targeted fungicides below
Mancozeb e.g. Dithane or Manzate	5	M3	Protectant; tank mix with targeted fungicides below
Ranman	0	21	
Previcur Flex	2	28	Reduced activity suspected in some Ohio counties
Tanos	3	11 + 27	Up to 2 days curative activity but low residual (3-5 days); use in program with protectants, alternating with effective fungicides with a different mode of action
Gavel	5	22	Contains mancozeb; see label for worker safety requirements
Presidio	2	43	Possible resistance in CDM populations in Eastern US but not documented in Midwest
Curzate	3	27	Up to 2 days curative activity but low residual (3-5 days)
Zampro	0	40 + 45	No Ohio data; use in program with protectants, alternating with effective fungicides with a different mode of action

Rain, Rain and More Rain – What Diseases Can Be Expected On Tomatoes? - Sally Miller, OSU Department of Plant Pathology

We have been receiving more than the usual amount of tomato samples in our diagnostic lab with symptoms of bacterial diseases and Septoria leaf spot. These diseases are much more severe under rainy than dry conditions. Bacterial leaf spot can be mistaken for Septoria and *vice versa* because the leaf symptoms are somewhat similar. Both cause the leaves to become yellow and drop. But Septoria lesions develop a whitish center that contains tiny, pinpoint sized dots that can be seen with the aid of a hand lens. These dots are actually tiny flask-like structures called pycnidia that contain thousands of spores. When water hits the pycnidia, the spores are released and move to more leaves on the plant. Septoria never causes lesions on tomato fruits. On the other hand, bacterial spot often causes raised crusty lesions on fruit. As the disease advances, leaves may become somewhat tattered, and marginal necrosis is often observed.

Late blight has not been reported in Ohio yet, but it is present in several Eastern states. This is another disease favored by rainy weather, especially if at least the nights are cool. Lesions can be found on leaves, stems and fruit.

Under rainy conditions, bacterial leaf spot and other bacterial diseases of tomatoes cannot be managed effectively once established in the field. Preventative applications of the plant activator Actigard, as well as copper bactericides alone or mixed with mancozeb or other EBDC fungicides, can be made on a 5-14 day schedule after transplants are placed in the field. On the other hand, Septoria leaf spot can be managed even after it is observed in the field (if at low incidence) by including a strobilurin fungicide such as Quadris, Cabrio, Flint or Tanos in the fungicide program. Remember to always alternate strobilurin fungicides with others with a different mode of action. Under cool rainy or humid conditions, it is advisable to scout for late blight regularly and protect tomatoes with Bravo or other chlorothanil-based product.

For quick updates on vegetable disease outbreaks, follow me on Twitter @OhioVeggieDoc.



Tomato late blight



Bacterial leaf spot



Septoria leaf spot

Disclaimer Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions. Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to race, color, religion, sex, age, national origin, sexual orientation, gender identity or expression, disability, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA. Keith L. Smith, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension and Gist Chair in Extension Education and Leadership. TDD No. 800-589-8292 (Ohio only) or 614-292-1868.