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# PENNSYLVANIA WEEKLY VEGETABLE DISEASE UPDATE

SEPTEMBER 4, 2008

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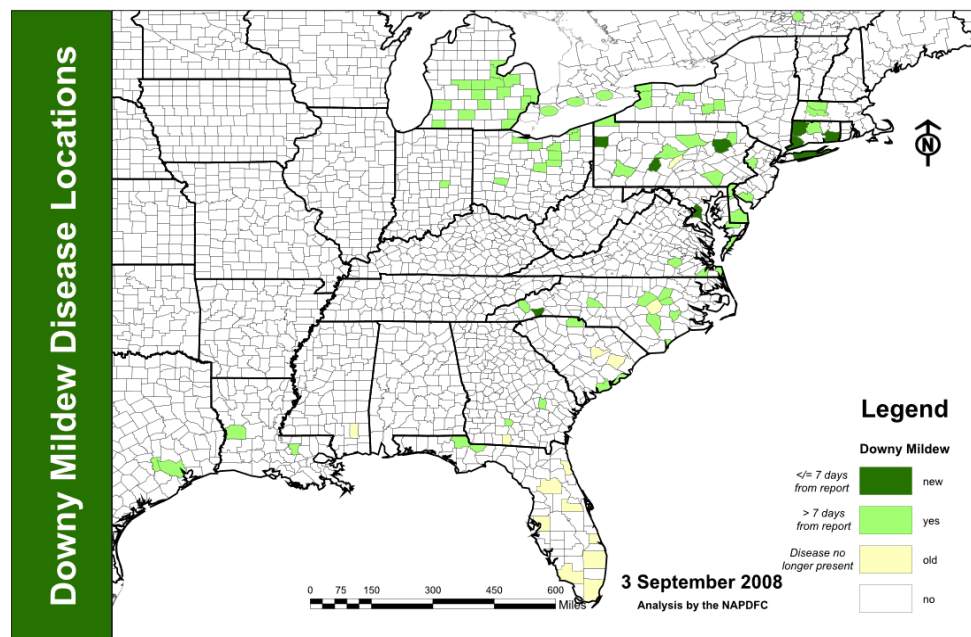
PENN STATE VEGETABLE PATHOLOGIST

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**NOTE:** This is the eleventh in a series of weekly disease updates that will be made over the remainder of the 2008 growing season. Please feel free to contact me at 814-865-7328 or [bkgugino@psu.edu](mailto:bkgugino@psu.edu) if you have any questions, concerns or suggestions. Please feel free to include this information in your various newsletters and outreach programming.

## UPDATE ON CUCURBIT DOWNY MILDEW

Downy mildew continues to be confirmed in additional cucumber fields in Pennsylvania. Today I confirmed downy mildew (as well as observed powdery mildew) on pumpkin in a field in Allegheny County, PA. This is the first report of downy mildew on pumpkin in Pennsylvania. The downy mildew lesions on pumpkin and winter squash crops are not as distinct as on cucumber. The lesions are not as angular and the purplish sporulation may not be as noticeable. Please scout your pumpkins and winter squash carefully. Aside from numerous reports on cucumber and several on muskmelon in the multi-state region, it has also recently been reported on butternut squash in Connecticut and on watermelon in Ohio.



*This map is from the NCSU downy mildew forecasting website as of 3 Sep 2008. The counties are shaded based on whether the outbreak is less than 7 days old (dark green), more than 7 days old (light green) or no longer present because the field was harvested or destroyed (yellow).*

The risk of downy mildew infection has again been very low over the past week due to the dry conditions however depending on the track of the various hurricane remnants that risk could quickly increase.

As stated in previous updates, remember to alternate between different modes of action (FRAC codes) for resistance management. The numbers and letters are used to distinguish the fungicide groups according to their cross resistance behavior. The numbers were assigned generally according to the time the product was introduced to the market (numbers 1 to 43, as of 2007).

The letters refer to P = host plant defense inducers (e.g. Actiguard), M = multi-site inhibitors (e.g. mancozeb), and U = unknown mode of action or unknown resistance risk.

Keep in mind that fungicides with mefenoxam (FRAC code 4) and QoI fungicides (FRAC code 11) are no longer recommended for downy mildew because of resistance. These products provided little to no control in recent university trials despite their previous performance. These products include Ridomil Gold Bravo, Ridomil Gold Copper, Quadris, Amistar, Cabrio, Flint, and Pristine. Copper also provides little to no control.

#### CUCURBIT DOWNY MILDEW FUNGICIDE TABLE

Trade name	Common name	FRAC code	PHI	Recommended rate/ A
Ranman	cyazofamid	21	0 day	2.1 to 2.75 fl. oz. 400SC
Presidio*	fluopicolide	43	2 days	3 to 4 fl. oz.
Previcur Flex	propamocarb	28	2 days	1.2 pt 6F
Curzate	cymoxanil	27	3 days	3.2 oz. 60DF
Tanos	cymoxanil	27	3 days	8 oz. 50WDG
Forum*	dimethomorph	40	0 days	6 fl. oz.
Revus*	mandipropamid	40	5 days	8 fl. oz.
Gavel **	mancozeb + zoxamide	M3 + 22	5 days	1.5 to 2 lb 75DF

\* Presidio and Revus received EPA registration in Feb 2008 so they are not listed in 2008 PA Vegetable Recommends. Forum is a new formulation replacing Acrobat.

\*\* Gavel already contains mancozeb so it does not need to be tank mixed for resistance management.

Please visit the Cucurbit Downy Mildew Forecasting website (<http://www.ces.ncsu.edu/depts/pp/cucurbit/>) for the latest list of disease outbreak locations and forecasts. This information is updated by the end of the day on Monday, Wednesday and Fridays.

Please report any suspect cases of downy mildew in cucurbit fields and bring or send a sample (overnight delivery) for confirmation to Beth Gugino, Department of Plant Pathology, 219 Buckhout Lab, University Park, PA 16802. We will examine the sample under a microscope and look for the characteristic downy mildew spores.

#### TOMATO AND POTATO DISEASE UPDATE

##### LATE BLIGHT UPDATE

Late blight on potato was confirmed in another field in upstate New York this past week. A very low level of infection was observed in a commercial upland field of Snowden in Genesee Co. Over 2 inches of rain reportedly fell since the fungicide application was made 7 or 8 days ago prior to the confirmation made on 27 August.

Below are the recommended spray schedules for managing LATE BLIGHT as determined on September 2<sup>nd</sup> using the BLITECAST forecaster for 19 locations across the state of Pennsylvania (thanks to Ellen Hay – Penn State). These suggestions are run using site specific SKYBIT weather data provided by ZedX (Bellefonte, PA) and are based on the assumption that late blight inoculum is nearby. A shorter 5 to 7 day spray schedule is recommended for almost all locations which the exception of Fairview in Erie County. It is important to scout for late blight and take action if you suspect the disease is present. Destroy hot spots by either discing in the crop or vine-killing the infected plants. Make sure to then apply systemic fungicides to all the tomato and potato fields on your farm.

Town	County	7 day rainfall total (26 Aug to 2 Sep)	Blightcast spray message*
Fairview	Erie	0.28	Spray if none Aug 24
Corry	Erie	0.98	since..... Aug 26
Sweden Valley	Potter	1.10	Aug 26
Butler	Butler	0.52	Aug 28
Finleyville	Washington	1.86	Aug 28
Loretto	Cambria	1.26	Aug 28
Rock Springs	Centre	0.43	Aug 28
Jersey Shore	Lycoming	1.01	Aug 28
Montandon	Northumberland	0.79	Aug 28
Clarks Summit	Lackawanna	0.01	Aug 28
Wyoming Valley	Luzerne	0.42	Aug 28
Germansville	Lehigh	0.95	Aug 28
Kutztown	Berks	0.76	Aug 28
Ringtown	Schuylkill	0.40	Aug 26
Gratz	Dauphin	0.37	Aug 28
Maddensville	Huntingdon	1.29	Aug 28
Waynesboro	Franklin	1.14	Aug 28
Leola	Lancaster	0.66	Aug 28
Mt. Joy	Lancaster	0.81	Aug 28

\*As a general rule of thumb, if you have not applied a fungicide in the past 14 days then one needs to be applied to protect the new vegetative growth especially wherever there is a history of late blight.

### EARLY BLIGHT UPDATE

Once again, the conditions have been less favorable for early blight development across Pennsylvania therefore the early blight forecaster, FAST, only recommended a fungicide application for locations again similar to Germansville in Lehigh County which are on a shorter 5 day fungicide spray schedule. For all other locations the spray message is the same as last week. However, early blight is now a common site in tomato fields and could spread quickly depending on the track of the hurricane remnants so maintaining a regular fungicide spray program is advisable in fields with ripening fruit. If you had trouble with early blight this year, make sure to rotate away from potatoes and tomatoes for at least 2 years and implement practices that reduce leaf wetness and minimize soil splashing.

Keep in mind that this model is run using site specific weather data provided by ZedX. Since environment varies, sometimes within relatively short distances, the spray recommendation information should be considered in combination with your local environmental conditions. One way to evaluate how well this forecast information is likely to apply to your farm, is to record daily rainfall at the local site of interest and compare it to the nearest forecasted site (see late blight table for rainfall amounts). If the rainfall is similar to rainfall reported for a nearby weather-forecaster site, then the forecast could be quite accurate for use on the farm. When farm rainfall is higher than at the nearby weather-forecaster site, disease conditions could be more severe than reported, and more sprays could be necessary. Likewise, if farm rainfall is lower, farm disease conditions could be less severe, and fewer sprays could be possible.

Town	County	Tom-FAST spray message*	
Fairview	Erie	Spray if none	July 23
Corry	Erie	since.....	Aug 1
Sweden Valley	Potter		Aug 5
Butler	Butler		July 16
Finleyville	Washington		July 20
Loretto	Cambria		July 30
Rock Springs	Centre		July 31
Jersey Shore	Lycoming		July 27
Montandon	Northumberland		July 23
Clarks Summit	Lackawanna		July 22
Wyoming Valley	Luzerne		July 20
Germansville	Lehigh		Aug 28
Kutztown	Berks		July 30
Ringtown	Schuylkill		July 28
Gratz	Dauphin		July 30
Maddensville	Huntingdon		Aug 1
Waynesboro	Franklin		Aug 2
Leola	Lancaster		Aug 2
Mt. Joy	Lancaster		July 23

\*As a general rule of thumb, if you have not applied a fungicide in the past 14 days then one needs to be applied to protect the new vegetative growth especially where there is a history of early blight.

\*For tomatoes, once any fruit start to ripen, regular fungicide applications may be warranted.

If you hear of any reports of early or late blight on tomato or potato in Pennsylvania or in the region, please report it to Beth Gugino at 814-865-7328 or [bkgugino@psu.edu](mailto:bkgugino@psu.edu). Tomato and potato disease updates will also be updated weekly and also available via the 1-800-PENN-IPM hotline.

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Information provided is intended for consideration by the user, but is not intended to be a recommendation. Production decisions should be based on consideration of many types of information (scientific, experimental, economic, legal, etc.) available to the user.

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