



Vegetable Crop Update

A newsletter for commercial potato and vegetable growers prepared by the University of Wisconsin-Madison vegetable research and extension specialists

No. 15 – July 26, 2014

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August 5 – Crops Diagnostic Workshop, Arlington Ag Research Station, Arlington, WI
August 12-14 – Farm Technology Days, Stevens Point, WI
August 21 – 1:00PM Antigo Field Day, Antigo, WI

Vegetable Disease Update – Amanda J. Gevens, Assistant Professor & Extension Vegetable Plant Pathologist, UW-Madison, Dept. of Plant Pathology, 608-890-3072 (office), Email: gevens@wisc.edu. Veg Pathology Webpage: <http://www.plantpath.wisc.edu/wivegdis/>



Late blight updates: I'm aware of no new late blight detections in WI other than that of Portage Co. reported on 18 July. The genotype/strain of the pathogen is US-8 (mefenoxam/metalaxyl resistant). Nationally, in the past week, there have been several new late blight reports from ME (potato), MI (potato), MA (potato & tomato), NY (potato), and PA (tomato). New/recent reports are indicated on map to the left in red, from [usablight.org](http://www.usablight.org). All *P. infestans* isolates that have been genotyped from field samples in 2014, thus far, have been of the US-23 genotype/strain (mefenoxam/metalaxyl sensitive), with the exception of Portage Co. WI with US-8. Reports from greater than one week ago are colored blue on the map, and include FL, IN, ME, NC, NY, PA, VA, and WI. Details can be found at <http://www.usablight.org/>. The website provides location (by county) of positive reports of late blight in the U.S. and further information on the disease.

Current P-Day (Early Blight) and Severity Value (Late Blight) Accumulations (R.V. James, UW-Plant Pathology/R.V. James Designs): A P-Day value of ≥ 300 indicates the threshold for early blight risk and triggers preventative fungicide application. A DSV of ≥ 18 indicates the threshold for late blight risk and triggers preventative fungicide application. Red text in table

below indicates threshold has been met/surpassed. NA indicates that information is not yet available as emergence has yet to occur. Blitecast and P-Day values for actual potato field weather from Grand Marsh, Hancock, Plover, and Antigo are now posted at the UW Veg Path website at the tab “P-Days and Severity Values.”

http://www.plantpath.wisc.edu/wivegdis/contents_pages/pday_sevval_2014.html

<i>Location</i>	Planting Date	50% Emergence	P-Day Cumulative	Disease Severity Value	Date of DSV Generation	Increase in DSV from last week (7/18)
<i>Antigo</i>	Early 5/20	6/9	358	46*	7/25	2
	Mid 5/27	6/16	310	46*	7/25	4
	Late 6/6	7/2	174	15	7/25	4
<i>Grand Marsh</i>	Early 4/20	5/19	528	76*	7/25	14 (from 7/6)
	Mid 5/4	6/1	441	73*	7/25	19 (from 7/6)
	Late 6/3	6/23	264	35*	7/25	16 (from 7/6)
<i>Hancock</i>	Early 4/24	5/20	551	40*	7/25	0
	Mid 5/8	6/2	452	37*	7/25	0
	Late 6/3	6/24	263	19	7/25	0
<i>Plover</i>	Early 4/21	5/20	495	79*	7/25	10
	Mid 5/5	6/1	411	76*	7/25	10
	Late 6/5	6/24	234	47*	7/25	10

Please note that we have surpassed the threshold for DSVs (18) in all monitored areas for all plantings of potatoes, with the exception of late planted potatoes in the Antigo area. This indicates that temperature and humidity have been favorable for the promotion of late blight. Please note: asterisks on the DSVs indicate that I have revised the value as displayed in the SureHarvest Blitecast daily output that is found at the UW-Vegetable Pathology website. In some cases, the number of hours of relative humidity above 90% was being issued as a value greater than 24 - giving unusually high DSVs for the individual day. I assigned a maximum DSV of 4 to such dates. We have overcome some of the Grand Marsh weather station problems, but did need to replace some missing data with information from the Hancock station.

Preventive fungicide application for late blight control may include base protectants such as chlorothalonil or mancozeb, or include a base protectant tank-mixed with one of the reduced risk fungicides with specific activity in controlling late blight. For further information on specific fungicide rates and activities, please find the 2014 updated list of potato fungicides for WI at the link below.

<http://www.plantpath.wisc.edu/wivegdis/pdf/2014/June%206%202014.pdf>

Further details on registered fungicides for WI vegetables can be found in the Univ. of WI Commercial Vegetable Production in WI Guide A3422,

<http://learningstore.uwex.edu/assets/pdfs/A3422.PDF>.

P-Days and early blight management: P-Days are over the 300 threshold for potatoes of early and mid-planting dates at all locations. Late planted potatoes are still below threshold in all monitored locations. Recall, the P-Day 300 threshold is an indicator for timing the initial fungicide application for management of early blight. Early blight lesions are active now in lower canopies of earliest and some mid-planted potatoes in southern and central Wisconsin. We plan to offer our Potato Early Blight foliar fungicide trial up for visitors on Aug 18 (Mon) and Aug 19 (Tues) at the Hancock Agricultural Research Station. Please contact me if you're interested in visiting to view efficacy of new programs (gevens@wisc.edu).

Cucurbit downy mildew updates: No downy mildew has been identified on cucurbit crops in Wisconsin, to date. In the past week, AL, KY, MI, NC, and NJ reported cucurbit downy mildew, as depicted in red on the map below. In summary this year, AL, FL, GA, LA, MD, MI, NC, SC, and TX have reported cucurbit downy mildew across multiple cucurbit hosts. I will be keeping tabs on disease reports in the region and will provide updates in this newsletter. Based on the disease forecast system, there is no likelihood of spore movement from current sites of confirmation to WI. The website: <http://cdm.ipmpipe.org/> offers up to date reports of cucurbit downy mildew and disease forecasting information.

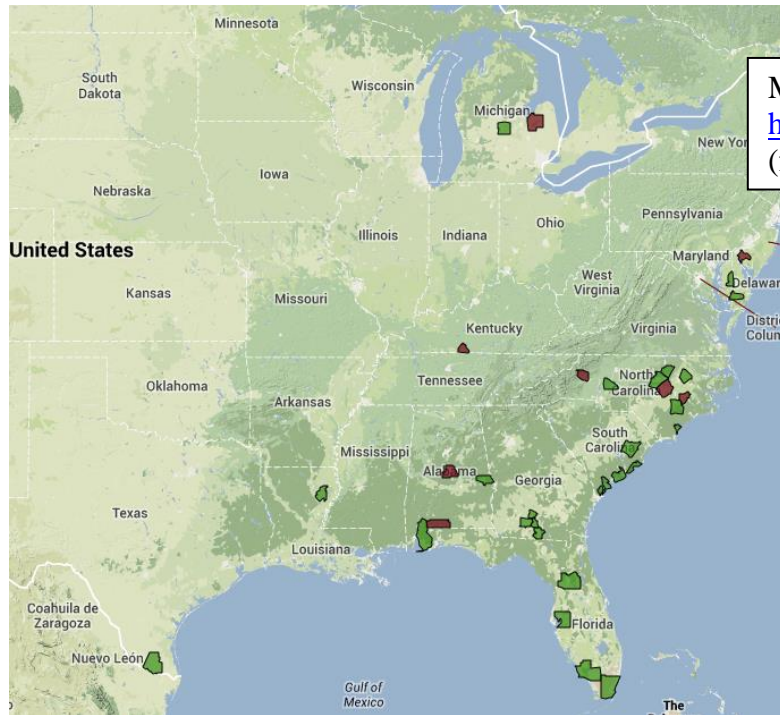
Angular leaf spot can easily be misdiagnosed as downy mildew. Lesions off angular leaf spot are confined between veins, much like downy mildew. Angular leaf spot is caused by a bacterial pathogen and can be common in cucurbit fields when conditions are humid and wet. Downy mildew is caused by a fungus-like pathogen that will produce profuse sporulation or spore masses on leaf undersides in the yellow lesion areas.

Information on angular leaf spot: <http://learningstore.uwex.edu/assets/pdfs/A3801.PDF>

Information on cucurbit downy mildew: <http://learningstore.uwex.edu/Assets/pdfs/A3978.pdf>



Photo courtesy: On left) Walt Stevenson, Prof. Emeritus UWEX; On right) Gerald Holmes, Cal Poly – Strawberry Sustainability Research and Education Center.



Map sourced from
<http://cdm.ipmpipe.org/scripts/map.php>
 (from 9:38AM July 26, 2014)

Management information for cucurbit downy mildew can be found in UW Vegetable Crop Updates – Disease Supplemental #8 from 2013:

<http://www.plantpath.wisc.edu/wivegdis/pdf/2013/Disease%20Supplement%208%20Aug%2013%202013.pdf>

Onion downy mildew detected in Michigan: Dr. Mary Hausbeck, Professor & Vegetable/Ornamental Pathologist at Michigan State University confirmed downy mildew in onions in Michigan this past week. Further information on this detection and management information from Michigan State University can be found at the website below.

http://msue.anr.msu.edu/news/downy_mildew_and_purple_blotch_are_here_in_michigan_onion_fields?utm_source=Vegetable+-+MSU+Extension+News+-+7-23-14&utm_campaign=Vegetables+7-23-14&utm_medium=email

Given the aggressiveness of this disease once present in a field, it is recommended that onion fields be carefully scouted for symptoms of downy mildew at this time. Preventative fungicide applications should be considered at this time to protect onions from downy mildew in southern and central Wisconsin.

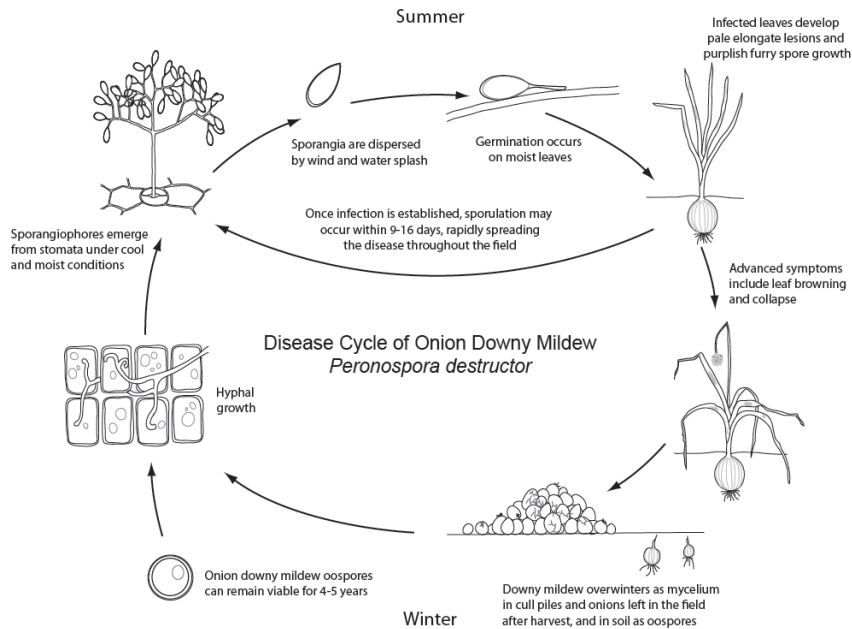
Onion downy mildew can be very problematic in onion fields. This foliar disease is caused by a fungus-like pathogen called *Peronospora destructor*. Infection is favored by temperatures less than 72°F and high humidity and leaf wetness. The pathogen can overwinter in volunteer onion, culls, and wild Allium weed species if the pathogen was present in your location in previous years. Symptoms include pale or white elongated patches on leaves that start off small and can elongate and produce a purple-gray sporulation which appears “downy.” Leaves can bend over and eventually die due to severe downy mildew infection. Please refer to pictures below. This disease can impact bulb size, quality, and storability. Management recommendations include

practicing a 3+ year rotation to non-hosts such as small grains and corn, eliminating culls and volunteers, avoiding dense planting, avoiding excess N and overhead irrigation, and orienting rows parallel to prevailing wind to avoid prolonged leaf wetness. Additionally, there are fungicides that can be effective for the management of onion downy mildew. Effective fungicides for Downy mildew control include azoxystrobin (Quadris, Amistar), pyraclostrobin (Cabrio), pyraclostrobin & boscalid (Pristine), cymoxanil + famoxadone (Tanos), dimethomorph (Forum), fluopicolide (Presidio), mandipropamid (Revus), fenamidone (Reason), azoxystrobin + propiconazole (Quilt Excel), fluazinam (Omega), mefenoxam (Ridomil Gold), phosetyl-aluminum (Aliette), fenamidone (Reason), mancozeb (Dithane, Manzate) and copper hydroxide (Kocide, Champ). Although labeled for onion downy mildew, coppers and chlorothalonil are not very effective for disease control, and coppers can be phytotoxic to onions. Please see the 2014 Wisconsin Vegetable Production Guide A3422 for further details on application rates and specifications. If you suspect you have Downy mildew in your onions, please get a sample and contact your county agent, our disease diagnostic clinic, or myself for confirmation.



For further information on any fungicides that may be mentioned in this newsletter, please see the 2014 Commercial Vegetable Production in Wisconsin Guide A3422. An online pdf can be found at the link below or a hard copy can be ordered through the UWEX Learning Store.

<http://learningstore.uwex.edu/assets/pdfs/A3422.PDF>



UW-Extension/Madison Plant Disease Diagnostic Clinic (PDDC) Update: *Brian Hudelson, Ann Joy, Joyce Wu, Tom Hinsenkamp, and Catherine Wendt, Plant Disease Diagnostics Clinic*

The PDDC receives samples of many plant and soil samples from around the state. The following diseases/disorders have been identified at the PDDC from July 19, 2014 through July 25, 2014.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
VEGETABLES			
Beet	Cercospora Leaf Spot	<i>Cercospora beticola</i>	Fond du Lac
Cabbage	Black Rot	<i>Xanthomonas campestris</i>	Outagamie
Garlic	Fusarium Basal Plate Rot	<i>Fusarium oxysporum</i>	Jackson
Onion	Fusarium Basal Plate Rot	<i>Fusarium oxysporum</i>	Jackson
	Stemphylium Leaf Blight	<i>Stemphylium</i> sp.	Green Lake
Tomato	Septoria Leaf Spot	<i>Septoria lycopersici</i>	Dane

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.