



Vegetable Crop Update

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

No. 13 – July 11, 2014

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July 15 – Crops Diagnostic Workshop, Arlington Ag Research Station, Arlington, WI
July 18 – UW Potato Breeding Station Tour, Rhinelander Ag Research Station
July 22 – UW-Hancock Agricultural Research Station Field Day, Hancock, WI
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

Potato update: With cool weather last week and forecast for more we are vulnerable to brown center in Atlantic, Lamoka, Canela, Norkotah CO8 and TX296, and Burbank. Temperatures below 50 can trigger brown center in tubers less than 2" in size. Uneven growth after brown center develops can trigger hollow heart. Therefore it is critical we stay above 80% of field capacity in fields with these varieties to avoid growth fluctuations and hollow heart. Tubers can recover from brown center but not hollow heart.

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: No late blight has been detected in Wisconsin at this time. Nationally, in just the last few days, there have been several new late blight reports from IN (potato), ME (potato), NC (tomato), and NY (tomato). New/recent reports are indicated on map to the left in red, from 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). Reports from greater than one week ago are colored blue on the map, and include PA, NC, NY, and FL. 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 disease characteristics and management.

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
<i>Antigo</i>	Early 5/20	6/9	256	40*	7/11
	Mid 5/27	6/16	208	40*	7/11
	Late 6/6	7/2	72	9	7/11
<i>Grand Marsh</i>	Early 4/20	5/19	378	60*	7/6
	Mid 5/4	6/1	290	54*	7/6
	Late 6/3	6/23	113	19*	7/6
<i>Hancock</i>	Early 4/24	5/20	439	37*	7/11
	Mid 5/8	6/2	340	34*	7/11
	Late 6/3	6/24	151	16	7/11
<i>Plover</i>	Early 4/21	5/20	397	63*	7/11
	Mid 5/5	6/1	312	60*	7/11
	Late 6/5	6/24	135	30*	7/11

Please note that we have surpassed the threshold for DSVs (18) in all monitored areas for early and mid-planted potatoes in all monitored locations. And, we have surpassed the threshold for late planted potatoes in Grand Marsh and Plover areas. 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 continue to have some problems with data communication at our Grand Marsh station. We will address this next week and aim to provide updated forecast values no later than Fri of next week.

Early 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>.

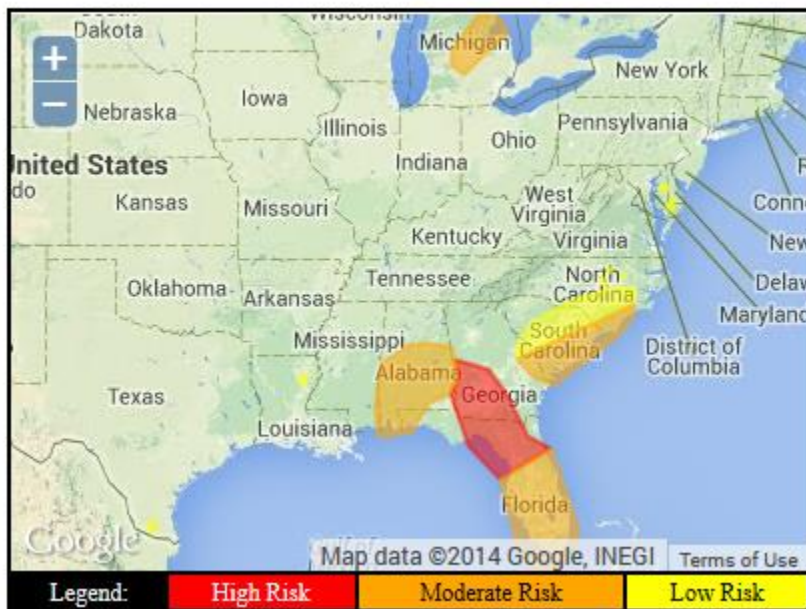
P-Days and early blight management: P-Days are over the 300 threshold for early planted potatoes in the Grand Marsh, Hancock, and Plover areas. And, we have surpassed the threshold in mid-planted potatoes in Hancock and Plover areas. Recall, the P-Day 300 threshold is an indicator for timing the initial fungicide application for management of early blight. Early blight lesions are developing now in lower canopies of earliest and some mid-planted potatoes in southern Wisconsin. Interestingly, this season we are seeing (and hearing about) more brown spot (*Alternaria alternata*) in lower plant canopies than noted before in previous years.

Cucurbit downy mildew updates (A.J. Gevens): No downy mildew has been identified on cucurbit crops in Wisconsin, to date. **In the past week, several states reported cucurbit downy mildew including, AL, MD, MI, and NC – 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 (see map below for Jul 12). MI reports forecast movement of pathogen to the east. The website: <http://cdm.ipmpipe.org/> offers up to date reports of cucurbit downy mildew and disease forecasting information.



Map sourced from
<http://cdm.ipmpipe.org/scripts/map.php>
(from 9:22PM July 11, 2014)

Risk prediction map for Day 2: Saturday, July 12



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>

Wisconsin Summer Hop Update – July 2014 (Michelle Marks, Graduate Research Assistant with Amanda Gevens, UW-Plant Pathology)

As we head deeper into the summer, it is time for another hop update. Hops have topped-off throughout the state and many varieties have started burring. The first cones are developing in southern Wisconsin on cultivars such as Perle and Tettnanger.

Downy mildew has been positively identified in three counties thus far: Jefferson, Dane, and Portage. The first basal spike samples were collected in mid-May. Currently, aerial spikes can be found higher on the trained bines and show similar symptoms to basal spikes with chlorotic downturned leaves, shortened internodes, and gray/black sporulation on leaf undersides. Many of our grower collaborators have begun regular fungicide programs to control downy mildew. See Vegetable Newsletter #3, which can be found at the link below for additional information regarding fungicide programs.



Image 1: Hop leaf showing chlorotic pattern indicative of viral infection.

<http://www.plantpath.wisc.edu/wivegdis/pdf/2014/April%2028%202014.pdf>

Apple Mosaic Virus (ApMV) has been identified in Jefferson County on the variety Nugget. Virus symptoms are characterized by chlorotic ringspots which can merge or become necrotic (Image 1). Infection by ApMV can reduce cone weight and alpha-acid content, but these losses vary greatly based on cultivar, location, and season. The virus can be transmitted via the plant sap through wounds or mechanical damage, or through root grafting. Once infected, there is no cure for hop plants.

Leafhoppers are showing up with regularity in several areas of the state, including Jefferson, Marathon, and Pepin counties. Feeding on hops can cause “hopper burn” which is characterized by necrosis (tissue death) of the outer edges and tips of leaves, leaving a distinctive “V” pattern (Image 2). There is currently no economic threshold set for leafhoppers in hops. Michigan State University Extension recently published a great page with additional information about leafhoppers and other pests: http://msue.anr.msu.edu/news/michigan_hop_update_july_8_2014 I have seen several beneficials as well, including lady beetles, spiders, and the eggs of green lacewings. Healthy populations of these natural predators will help keep pest numbers low and may reduce the number of pesticide applications necessary for control.

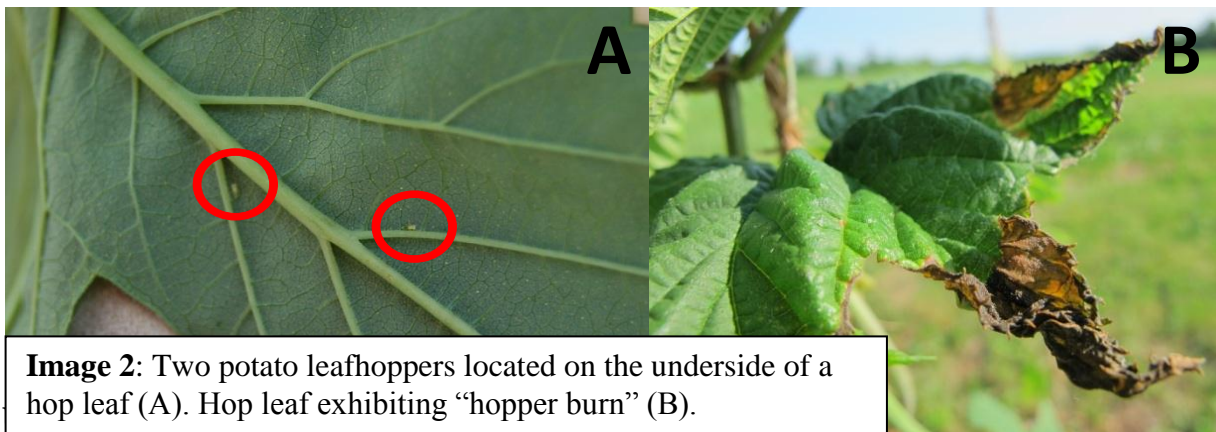


Image 2: Two potato leafhoppers located on the underside of a hop leaf (A). Hop leaf exhibiting “hopper burn” (B).