



Vegetable Crop Update

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

No. 27– August 16, 2015

In This Issue

Disease forecasting values for early blight and late blight
 Late blight updates
 Cucurbit downy mildew updates
 Onion Stemphylium
 Spotted Wing Drosophila updates
 Langlade County Airport Field Day Program

Calendar of Events

August 19 – UW-Arlington ARS Agronomy/Soils Field Day, 8AM, Arlington, WI
August 20 – UWEX Langlade County Airport Field Day, Antigo, WI
August 25-27 – Wisconsin Farm Tech. Days, Statz Bros., Inc. Farm, Sun Prairie, WI
September 1 – UW-Arlington ARS Organic Agriculture Field Day, Arlington, WI

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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 available. 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_2015.html

Location	Planting Date	50% Emergence	P-Day Cumulative	Disease Severity Value	Date of DSV Generation	Increase in DSV from 8/7
Antigo	Early 4/25	5/25	534	89	8/13	14
	Mid 5/5	6/1	534	89	8/13	14
	Late 5/15	6/15	436	63	8/13	14
Grand Marsh	Early 4/5	5/10	676	113	8/13	9
	Mid 4/15	5/15	665	112	8/13	9
	Late 5/1	5/21	632	110	8/13	9
Hancock	Early 4/10	5/15	602	84	8/7	1
	Mid 4/20	5/18	577	81	8/7	1
	Late 5/5	5/25	543	76	8/7	1
Plover	Early 4/15	5/20	682	110	8/13	15
	Mid 4/25	5/22	643	107	8/13	15
	Late 5/10	5/30	580	91	8/13	15

Potato Early Blight Preventive Management: P-Days have surpassed threshold of 300 in all potato plantings Wisconsin. Early blight pressure is especially heavy this year. We have noted primarily *Alternaria solani* (early blight) in field, with just minor findings of *Alternaria alternata* (brown spot). Continued control of this disease is important to limit yield and quality losses. On May 8th, I provided a summary of fungicides for control of early blight in conventional potato in this newsletter, please find the link to this information below.

<http://www.plantpath.wisc.edu/wivegdis/pdf/2015/May%2008,%202015.pdf>

Late Blight Updates: Late blight fired up again in some parts of central WI this past week after last weekend's rains. Additional detections were made in counties in the northwestern WI. Continued management of late blight is critical to maintain healthy potato tubers below ground.

In Wisconsin: Nine counties in Wisconsin have submitted samples which were confirmed for late blight in potato and/or tomato. While I don't maintain a comprehensive list of how many fields are infected by county, the disease has been detected in several fields within each of the counties I have listed below. In all cases in which we have tested, the *Phytophthora infestans* is of the US-23 genotype. Reports are listed below. The US-23 genotype is sensitive to conventional phenylamide fungicides such as mefenoxam and metalaxyl (ie: Ridomil Gold SL). The use of antisporent fungicides (ie: Forum, Previcur Flex, AgriTin, Revus Top, Zampro, Ridomil) is critical following first detection of late blight in a field. In organic systems, copper containing fungicides continue to prove most effective and provide greatest broad spectrum disease control in tomato and potato. EF-400 and BacStop (Anjon Ag) also provides control of late blight as seen in replicated open field trials in MI in recent years. While our previous lab and greenhouse investigations with Zonix indicated efficacy of the rhamnolipid for late blight control on tomato with a single inoculation, open field evaluations in PA and NC have not shown good control. Copper fungicides were, in most cases, 2X better at controlling late blight than the Zonix treatments (based on season-long disease or AUDPC).

Date of Confirmation	County (general location)	Host	Late blight pathogen genotype
23 June	Adams (northern)	Potato	US-23
8 July; 24 July; 29 July	Waushara (western)	Potato; Tomato	US-23
8 July; 28 July	Wood (southern, central)	Potato; Tomato	US-23
14 July	Marquette (central)	Potato	US-23
15 July; 28 July	Portage (central)	Potato	US-23
23 July	Columbia (north central)	Tomato	US-23
23 July	Fond du Lac (north central)	Tomato	US-23
4 August	Polk (southeastern)	Tomato	US-23
12 August	St. Croix	Tomato	US-23

Across the nation: There were new detections of late blight in ID (potato), NC (tomato), NY (tomato, US-23), and PA (tomato) as posted to www.usablight.org. To date, nationally, there have been confirmations of late blight in FL (US-23), CA (US-11), CT (US-23), ID (US-23), IN (US-23), NC (US-23), TX (not reported on usablight.org/strain not yet identified), WA (US-8), MD (US-23), ME (US-23), MI (US-23), NC, NJ (US-23), NY (US-23), ON and QC Canada, PA (US-23), VT, WI (US-23), and WV. See map below (blue counties are greater than 7 days old; red county indicates detection made in just the past 7 days). Screen shot grabbed at 8:06PM on 16 August, 2015.



Fungicides are critical for protection of potato and tomato crops in organic and conventional systems at this time.

There is not one recommended fungicide program for all late blight susceptible potato (and tomato) fields in Wisconsin. Fungicide selections may vary based on type of inoculum introduction, proximity to infected fields, crop stage, late blight strain, and other diseases that may be in need of management. Please see UWEX Veg Crop Updates article on fungicide selections from June 5 at link below. Fungicides for organic systems and home garden fungicides can also be found at my website.

<http://www.plantpath.wisc.edu/wivegdis/pdf/2015/June%205,%202015.pdf> or a listing of 2015

WI potato late blight fungicides:

<http://www.plantpath.wisc.edu/wivegdis/pdf/2015/Potato%20Late%20Blight%20Fungicides%202015.pdf>

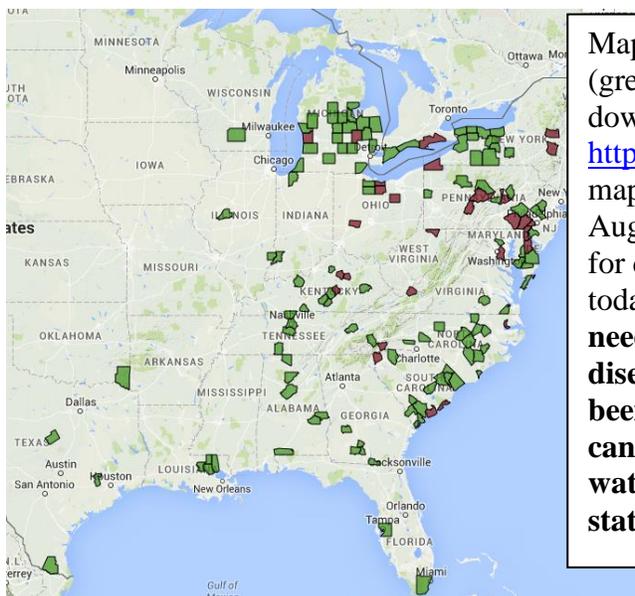
If you suspect/detect late blight, have the disease confirmed (free diagnostics through my lab and the UWEX Plant Disease Diagnostic Clinic) and we can genotype for further information on the nature of the pathogen.

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>.

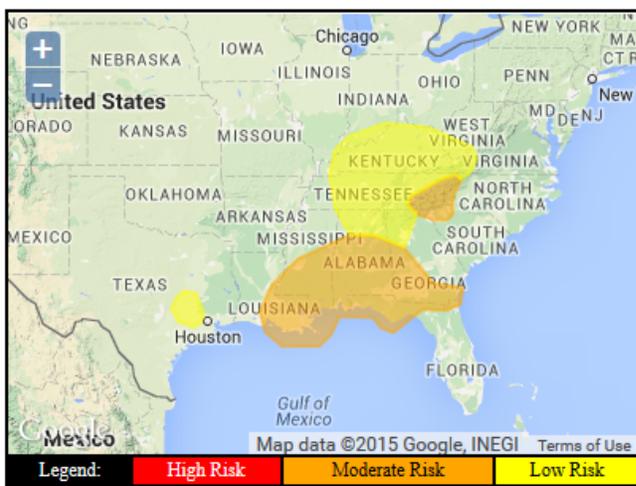
Cucurbit downy mildew updates: No new reports of downy mildew on cucurbits here in WI. Recall there was a detection on July 20 in cucumber and cantaloupe from Dane County. At that time, few lesions were identified on cucumber and cantaloupe in Dane County on a few plants that have been treated with fungicide. In the past week, downy mildew was confirmed in IL, IN, KY, MD, MI, NC, NY, PA, QC, TN, and VA. Prior reports of the disease have been confirmed in AL, DE, FL, GA, IL, KY, LA, MD, MI, NC, NJ, NY, OH, ON Canada, PA, QC Canada, SC, TN, TX, VA, and WI. For more information, visit:

<http://learningstore.uwex.edu/Assets/pdfs/A3978.pdf>



Map of recent (red counties) and past (green counties) reporting cucurbit downy mildew in the U.S. through the <http://cdm.ipmpipe.org/> website. The map was sourced at 8:17PM on August 16, 2015. There is low risk for disease spread in Wisconsin for today (see forecast map below). **We need to keep an eye out for this disease on all cucurbits as it has been identified on cucumber, cantaloupe, pumpkin, and watermelon in upper Midwestern states.**

Risk prediction map for Day 3: Sunday, August 16



Moderate Risk to cucurbits in southeast LA, southern MS, central and southern AL, southern GA, and the NC / SC mountains. Low Risk near the southeast TX source, in northern AL and northern GA, TN except the far west, KY, southern WV, and southwest VA. Minimal Risk to cucurbits otherwise.

Forecaster: TK at NCSU for the Cucurbit ipmPIPE - 2015

Fungicides are critical to maintain control of cucurbit downy mildew. Based on replicated research conducted by Dr. Mary Hausbeck of Michigan State University, a 7-day interval fungicide program is recommended for cucumber crops before disease is confirmed. The program should tighten up to a 5-day program after disease is confirmed. In other vine crops (cantaloupe, melon, zucchini, squash, pumpkin, and gourd), a 7 to 10 day program is recommended before disease, with a tightening up of the program to a 7-day interval after disease is confirmed. Fungicide selections should include Gavel 75WG (5 day PHI), Tanos 50WG (3 day PHI), Zampro 4.4SC (0 day PHI), Ranman 3.6SC (0 day PHI), and Zing! (0 day PHI). Previcur Flex 6SC (2 day PHI) and Presidio 4FL (2 day PHI) have also demonstrated

efficacy in past years in trials. The previously listed fungicides should be alternated and tank-mixed with either mancozeb or chlorothalonil (unless one of these protectants is in a pre-mix formulation such as Zing! or Gavel).

Growers and researchers in the southeastern US, as well as in Michigan (in 2014 trials) have noted some resistance in the downy mildew pathogen population to Presidio and Previcur fungicides. As such, these fungicides should be tank-mixed with another downy mildew-specific fungicide as well as a base protectant of mancozeb or chlorothalonil. The cucurbit downy mildew that has been in MI over the past several years has also shown resistance to mefenoxam (ie: Ridomil), strobilurins (ie: Quadris, Cabrio), and mandipropamid (Revus). More information from Dr. Mary Hausbeck at Michigan State University on cucurbit downy mildew can be found at the link below.

http://msue.anr.msu.edu/news/cucumber_downy_mildew_makes_an_early_appearance_in_michigan?utm_source=Vegetable+-+MSU+Extension+News+-+06-23-15&utm_campaign=Vegetables+06-23-15&utm_medium=email

Stemphylium on Onions: This disease has become more common and problematic in commercial onion fields of Ontario, Michigan, and now Wisconsin. In recent years, *Stemphylium* infections have been detected in Wisconsin, however, in 2015, we are finding significant levels of this disease in several commercial onion fields. *Stemphylium* leaf blight is a foliar disease of onions caused by the fungus *Stemphylium vesicarium*. Symptoms begin as small yellow-tan, water-soaked lesions that elongate into lesions that turn dark olive brown to black due to spore production. Leaves can become completely diseased and necrotic when lesions coalesce. See pictures, below, of symptoms of *Stemphylium*. Symptoms are not easily distinguished until the spore production phase occurs. *Stemphylium*, as well as purple blotch and *Alternaria*, can prematurely defoliate the crop causing reduced bulb quality and increased susceptibility to secondary bacterial diseases that may cause storage rots.



Stemphylium most often infects dead or dying onion leaves when temperatures are warm (64 – 77°F) and humid, with periods of leaf wetness (16+ hours). Since the pathogen infects onions that have been physically damaged or infected by other diseases, it is important to maintain healthy plant stands and control other common foliar diseases of onions such as purple blotch, downy mildew and *Botrytis* leaf blight.

The same cultural methods of control that are used to manage other foliar onion disease should be employed for *Stemphylium*. Fungicides registered for the control of purple blotch can be effective on *stemphylium* leaf blight; however, it seems to be harder to control *Stemphylium* with fungicides that are highly effective on purple blotch. In our preliminary trials on onions in Wisconsin this summer, we see that most programs look similar in disease control performance with the exception of programs with Quadris Top and Luna Tranquility (not currently registered for onions in WI). Note that Luna Tranquility contains two active ingredients. One is Scala and the second is a fungicide in FRAC group 7. Endura is also a group 7 fungicide with registration on onion in WI. We will continue to provide updates on this trial throughout the production season, with the final report to come during winter grower education conferences.

Spotted Wing Drosophila: Mid-Season Update

Thank you all for your support in the state-wide monitoring project. As of August 4th, Spotted Wing Drosophila has been confirmed in 13 counties: Pepin, Dane, Iowa, Rock, Burnett, Waushara, Door, Tomah, Washburn, Portage, Barron, Pierce/St.Croix, and Vernon. It is also suspected in Brown County. Keep sending in your samples and updates!

The winter morph monitoring project also continues as we trap across southern Wisconsin. SWD were first detected in the traps July 8th, with an average of 1 male and 1 female per trap. Numbers have increased to an average of 5 males and 30 females per trap on July 22nd. Traps are still being processed, but it appears that numbers will remain elevated.

We still have several months left in the winter morph monitoring project even after fruit season is over. In the 2014 season, SWD peaked around the third week of September. It was last reported the second week of November.

If you have any questions about the state-wide monitoring project, winter morph project, or SWD management, please contact Kathryn LeClaire at swd@russell.wisc.edu



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August 10, 2015

Stephen Zimmerman, Interim Langlade Co. UW-Extension Agriculture Educator

Antigo Potato Research Field Day August 20

You are encouraged to join us at 1 p.m. on Thursday, August 20 for our annual field day at the Langlade County Agricultural Research Station. The station is located at the Langlade County Airport (corners of Hwy 64 and Hwy 52, just east of Antigo). The station is operated by UW-Extension with funding and support from the Wisconsin Potato Industry.

Topics on the tour this year will include:

Aphid Management Trial - Dr. Russ Groves.

Common Scab Trial (Product Evaluation Study) - Dr. Amanda Gevens.

WI Variety Trial - Dr. Felix Navarro.

Off-target Herbicides in Seed Potatoes: Research Update - Dr. Jed Colquhoun.

Breeding Program Update - Dr. Jeff Endelman.

Water Management Products - Bill Lindenmier, CPAg, Precision Laboratories.

APSA-80 Nutriplant – Ellie Womeldorf and Dan Taggatz

Following the tour we will meet at the City Park East shelter for food and refreshments provided by Servco FS. Questions can be directed to Steve Zimmerman at 715-627-6236.