



Vegetable Crop Update

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

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Calendar of Events

July 20, 2017 – UW-Hancock ARS Field Day, Hancock, WI
July 27, 2017 – UWEX Langlade County Airport Research Station Field Day, Antigo, WI
August 4, 2017 – UW-Lelah Starks Elite Foundation Seed Potato Farm Field Day, Rhinelander, WI (10AM to Noon Lunch to Follow)
January 21-23, 2018 – Wisconsin Fresh Fruit & Vegetable Conference, Wisconsin Dells, WI
February 6-8, 2018 – UWEX & WPVGA Grower Education Conference, Stevens Point, 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. “-“ 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/weather_%20list_2017.html

Location	Planting Date	50% Emergence	P-Day Cumulative	Disease Severity Value	Date of DSV Generation	Increase in DSV from previous calculation
<i>Antigo</i>	Early 5/3	5/25	-	-	-	-
	Mid 5/15	6/1	-	-	-	-
	Late 6/1	6/15	-	-	-	-
<i>Grand Marsh</i>	Early 4/10	5/15	61	10 (from 5/18)	5/30	-
	Mid 5/1	5/22	54	8	5/30	-
	Late 5/17	6/1	-	-	-	-
<i>Hancock</i>	Early 4/15	5/18	66	10	5/30	-
	Mid 5/5	5/30	-	-	-	-
	Late 5/20	6/5	-	-	-	-
<i>Plover</i>	Early 4/20	5/20	55	12	5/28	-
	Mid 5/8	5/25	30	1	5/28	-
	Late 5/25	6/8	-	-	5/28	-

Thank you to Mark Haynes of Mortenson Bros. Farms and Jim Okray of Okray Family Farms for hosting 2 of our weather stations in commercial field. The Hancock and Antigo stations are at our UW ARS sites.

Summary: Disease Severity Values (DSVs) and Late Blight Blitecast: The earliest planted potatoes in our Grand Marsh, Hancock, and Plover sites are at 50% emergence or greater; with 50% emergence also reached for mid-planted potatoes in Grand Marsh and Plover. The initial calculations of DSVs from the earliest emerged potatoes were 10 DSVs for Grand Marsh and Hancock; 12 DSVs for Plover. Mid-planted potatoes were 8 DSVs for Grand Marsh and just 1 DSV for Plover. Recall the maximum number of DSVs that one day can accumulate is 4. Once thresholds of 18 DSVs have been met, routine, protection of susceptible tomato and potato crops is recommended. Wisconsin commercial conventional fungicides for potato late blight control can be found at:
<http://www.plantpath.wisc.edu/wivegdis/pdf/2017/May%2022,%202017.pdf>

P-Days indicating early blight risk have not yet reached threshold for Wisconsin potatoes. Recall the threshold is 300 P-Days. We are at 61 for early planted potatoes in Grand Marsh; 54 for mid-planted potatoes in Grand Marsh; 66 for early planted potatoes in Hancock; 55 and 30 P-Days for early and mid-planted potatoes, consecutively, in Plover.

National Late Blight Updates: <http://usablight.org> is again up and running for 2017 in effort to support the detection and characterization of late blight on tomato and potato crops from the U.S. No new reports of late blight in the US during recent weeks. Already this year, late blight has been confirmed on potato and tomato in southwestern Florida. In all reported cases, the pathogen genotype was US-23. This has been the predominant genotype in Wisconsin, and across the U.S., in recent years. US-23 can still generally be managed well with use of phenylamide fungicides.

National Cucurbit Downy Mildew Updates: <http://cdm.ipmpipe.org/> remains a valuable online resource for 2017. The site offers information on the detection and characterization of the cucurbit downy mildew pathogen from the U.S. (and often Canada). On May 15 downy mildew was confirmed on cucumber in GA. Other recent reports of the disease have come from western FL on cantaloupe, watermelon, and cucumber. No new reports of the disease in the past week.

Participatory research on soil microbial diversity of Wisconsin potato fields: With funding from the WPVGA, the research group of Dr. Richard Lankau in the Plant Pathology department at UW-Madison is seeking interested growers and crop consultants to participate in a survey of microbial diversity across potato fields in Wisconsin. We are learning more and more about the vital role that soil microorganisms play in sustainable, productive agricultural systems through their effects on disease suppression, nutrient cycling, and water relations. However, there are still many basic questions about the role of soil microbes in potato production systems, and how they respond to the variation in soil conditions, climates, and management decisions across the state. As a first step, we would like to obtain soil samples from as many fields across the state as possible. New technology allows us to obtain a snapshot of the entire microbial community from a soil or root sample using molecular biology methods at reasonably low cost. Therefore, the primary limitation on this research becomes the physical collection of samples from across wide areas.

What we need: We are looking for participants willing to collect ~2 cups of soil from one or more fields currently in potato, and ship them to our lab in Madison within 1 week of sampling. We can cover shipping expenses through UPS. Alternatively, we have set up a collection box at the Hancock Agricultural Experiment Station, if you prefer to hand deliver your samples there. Additionally, participants will be asked to fill out a short questionnaire about the history and management of the sampled field. All information, including the microbial data we collect, will be fully anonymized prior to any dissemination.

We are hoping to get samples from a large number of fields (up to 50) from around the state to provide the best chance of identifying patterns in microbial communities. For anyone particularly interested, we

also need a larger collection of soil, ~2 gallons, to use in greenhouse experiments that will help us determine the functional relationships between microbial communities and potato health. We would like to get these larger samples from 15 fields around the state managed in divergent ways.

What we can provide: Although our research is at too early a stage to provide specific recommendations, we would be happy to provide a summary of the information we learn about the microbial communities in your field, and how these communities compare to other fields in the state. For those fields that we use in our greenhouse experiments, we will be able to provide more information on the disease suppressive and nutrient acquisition properties of the microbial communities, at least in the context of our experimental conditions. In time, with the data from this survey along with additional experimentation, our hope is to develop guidelines for management decisions that build healthy soil communities and best capitalize on the functions that these communities can provide for crops.

If you have any interest in participating in this research, please contact Richard Lanaku via email (lankau@wisc.edu) or phone (608-262-3084) and we can discuss the logistical details and any questions you have about our work.

The 2017 A3422 Commercial Vegetable Production in Wisconsin Guide is now available for 2017. As in past years, the guide can be downloaded for free (link below) or a hard copy can be purchased from UWEX Learning Store for \$10. <https://learningstore.uwex.edu/Assets/pdfs/A3422.pdf>