



Vegetable Crop Update

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



No. 22 – September 8, 2019

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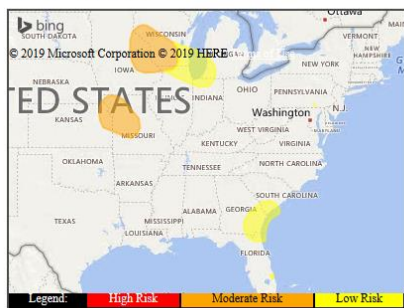
December 3-5, 2019 – Midwest Food Producers Association Annual Convention/Processing Crops Conference, Wisconsin Dells, WI
January 26-28, 2020 – WI Fresh Fruit & Vegetable Growers Conference, Wisconsin Dells, WI
February 4-6, 2020 – UW-Madison Div. of Extension & WPVGA Grower Education Conference, Stevens Point, WI

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It has been a tough summer for management of vegetable and potato diseases. Generally cooler temperatures and high moisture in lower plant canopies due to the temperature differentials between night and day have promoted higher than average incidence and severity of disease. In particular, snap beans have seen unusually high levels of bacterial diseases, cucurbits and peppers have seen high levels of *Phytophthora* crown and fruit rot; tomatoes seemed to have great fruit set as summer advanced, but with favorable disease conditions, many growers saw high pressure from septoria, early blight, late blight, and bacterial diseases. In sum, it's been tough to keep diseases at bay from mid-summer to the current time. It's important to think about management of residue borne disease at this time. While the main crop may be out of the field, or coming out of the field, the pathogen in association with the crop debris can remain over the winter and threaten susceptible crops in 2020. Shallow cultivation of infected plant material can encourage break down of tissues and reduction in viable inoculum for next year and beyond. Late blight does not have a soilborne spore type. We have identified just a single clonal lineage/strain type in WI this season (US-23); this means that the pathogen is exclusively in association with infected plant material and should not reside in the soil outside of residue or plant host tissue. Thorough killing of plant tissues and, hence, the *Phytophthora infestans* pathogen, are necessary to limit the continuation of the disease into subsequent years.

Cucurbit downy mildew: Buffalo (watermelon; 9/5); Vernon (cucumber; 8/20) and Dane County (butternut squash and pumpkin, 8/20) WI have had confirmed reports of downy mildew, to date. While downy mildew doesn't directly infect fruit, cucurbits that require several more weeks in the field could lose foliage, creating little/no sun protection for fruit resulting in sun scald. Additionally, plants infected with downy mildew often become more susceptible to other diseases esp. on fruit of late seasoning maturing hard winter squashes and pumpkins. Protection of cucurbits with use of effective fungicides is recommended at this time. **Visit our 2019 WI Commercial Vegetable Production Guide** for further information pertaining to the fungicides listed in this newsletter. <https://learningstore.uwex.edu/Assets/pdfs/A3422.pdf> The cucurbit downy mildew reporting and forecasting site <http://cdm.ipmpipe.org/> indicated new confirmations of downy mildew in KY, MD, MI, NH, OH, PA, and WI during this past week. In 2019 so far, the site has documented confirmations in AL, AR, CT, DE, FL, GA, IN, KY, MA, MD, MI, MO, NC, NJ, NY, OH, PA, RI, SC, TN, VA, and WI on various cucurbits.

Risk prediction map for Day 3: Sunday, September 8



Moderate Risk in northwest MO, northeast KS, southwest WI, northeast IA, and far southeast MN. Low risk for cucurbits in southeast GA, southern SC, southwest MI, far northern IN, northern IL, southeast WI. Minimal Risk to cucurbits otherwise.

The disease forecast indicates some risk of downy mildew movement within WI. This doesn't include most recent report of watermelon downy mildew in Buffalo County on 9/5/19

Forecaster: TK at NCSU for the Cucurbit ipmPIPE - 2019

Potato & Tomato Late Blight Updates: Reports of late blight from both potato and tomato have been confirmed in a few additional counties this past week.

Date	County	Host Crop	Clonal Lineage
7/17/2019	Wood	Potato	US-23
8/2/2019	La Crosse	Tomato	US-23
8/6/2019	Portage	Potato	US-23
8/15/2019		Potato	US-23
8/22/2019		Potato	US-23
9/3/2019		Potato & Tomato	US-23
8/13/2019	Monroe	Tomato	US-23
8/14/2019	Adams	Potato	US-23
8/27/2019		Potato	US-23
8/14/2019	Waushara	Potato	US-23
8/15/2019		Potato	US-23
8/19/2019		Tomato	US-23
8/14/2019	Vernon	Tomato	US-23
8/19/2019	Crawford	Potato	US-23
8/24/2019	Sauk	Potato	US-23
8/29/2019	Juneau	Tomato	US-23

Most isolates of US-23 can be managed with phenylamide fungicides such as mefenoxam and metalaxyl. It is critical that susceptible potatoes and tomatoes in and around the counties of reports be treated with a combination of antispurulant and protectant fungicides to limit reproduction of the pathogen and new infections. **Antispurulants include: Orondis, Forum, Curzate, Tanos, Ariston, Previcur, Revus, and Ridomil.** Outside of WI, late blight was confirmed in NY (tomato) and PA (tomato) this past week. In 2019, late blight had been confirmed in FL, NC, NY, PA, TN, WA, and WI. Late blight fungicides registered for use in Wisconsin are available at the UW-Potato & Vegetable Pathology website or at link: <https://wivegdis.wiscweb.wisc.edu/wp-content/uploads/sites/210/2019/06/2019-Potato-Late-Blight-Fungicides.pdf>

Current P-Day (Early Blight) and Disease Severity Value (Late Blight) Accumulations - As potato fields are vine killed and harvested, our stations will be shut down for this season. Many thanks to Ben Bradford, UW-Madison Entomology; Stephen Jordan, John Hammel, & Samuel Meyer, UW-Madison Plant Pathology for maintaining stations and advancing data collection and processing in 2019. 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 indicates threshold has been met/surpassed. Weather data used in these

calculations comes from stations that are in potato fields. Data are available in graphical and raw data formats for each weather station at: <https://wivegdis.plantpath.wisc.edu/dsv/>

<i>Location</i>	<i>Planting Date</i>	<i>Emergence Date (50%)</i>	<i>Disease Severity Values (DSVs) 9/7/19</i>	<i>Potato Physiological Days (P-Days) 9/7/19</i>
<i>Grand Marsh</i>	Early Apr 10	May 20	133	844.3
	Mid May 1	June 1	131	767.1
	Late May 20	June 9	129	708.61
<i>Hancock</i>	Early Apr 10	May 22	85	837.37
	Mid Apr 25	May 27	84	801.47
	Late May 15	June 8	82	711.95
<i>Plover</i>	Early Apr 22	May 27	124	808.52
	Mid May 1	June 1	124	774.12
	Late May 29	June 13	122	683.9
<i>Antigo</i>	Early May 14	May 29	69	696.48
	Mid May 24	June 8	69	689.57
	Late Jun 1	June 20	66	607.43