



Vegetable Crop Update

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

No. 21 – August 29, 2021

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Late Blight in Potato & Tomato, Cucurbit
Downy Mildew Updates

Calendar of Events:

November 30-December 2, 2021 – Midwest Food Producers Assoc. Processing Crops Conference, Kalahari Convention Center
January 11-13, 2022 – Wisconsin Agribusiness Classic Conference, Alliant Energy Center, Madison, WI
February 8-10, 2022 – UW-Madison Div. of Extension & WPVGA Grower Education Conference, Holiday Inn, Stevens Point, WI

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Potato Disease Modelling and Management of Early Blight and Late Blight: Current P-Day (Early Blight) and Disease Severity Value (Late Blight) Accumulations. Many thanks to Ben Bradford, UW-Madison Entomology; Stephen Jordan, UW-Madison Plant Pathology; and our grower collaborator weather station hosts for supporting this disease management effort. A Potato Physiological Day or P-Day value of ≥ 300 indicates the threshold for early blight risk and triggers preventative fungicide application. A Disease Severity Value or DSV of ≥ 18 indicates the threshold for late blight risk and triggers preventative fungicide application. Red text in table indicates threshold has been met or surpassed. Weather data used in these calculations comes from weather stations that are placed in potato fields in each of the four locations (substitute data from <https://agweather.cals.wisc.edu/vdifn> as needed). Data are available in graphical and raw formats for each weather station at: <https://vegpath.plantpath.wisc.edu/dsv/>

Location	Planting Date		50% Emergence Date	Disease Severity Values (DSVs)	Potato Physiological Days (P-Days)
				8/29	8/29
Grand Marsh	Early	April 2	May 10	111	795
	Mid	April 10	May 15	111	781
	Late	May 1	May 23	105	715
Hancock	Early	April 5	May 12	57	800
	Mid	April 15	May 15	57	791
	Late	May 5	May 23	53	729
Plover	Early	April 7	May 12	96	760
	Mid	April 20	May 20	93	715
	Late	May 7	May 30	88	653
Antigo	Early	April 26	May 28	55	743
	Mid	May 10	June 5	55	705
	Late	May 20	June 13	55	636

All potato fields of Wisconsin have reached/surpassed the threshold for Disease Severity Values (18) and should continue to be preventatively treated for late blight management. Accumulations over the past week were roughly at one dozen DSVs, indicating moderate risk from disease-promoting weather. Potato late blight (US-23) was confirmed from a commercial potato field in Portage County on 8/25/2021. To date, there are now 3 confirmations of US-23 potato late blight all in Portage County WI (Jul 28, Aug 9, and Aug 25).

Outside of Wisconsin, tomato late blight was confirmed in Cocke County Tennessee on Aug 19 on tomato (US-23), North Carolina on Aug 16 on tomato (strain typing in process); on tomato in Ontario (Haldimand-Norfolk) Canada (no sample submitted for strain determination on Aug 10); on potato in Aroostook County Maine (US-23 on Aug 9); and on tomato in northeastern Georgia (US-23 on Jul 28) (usablight.org). US-23 is typically sensitive to the fungicides in the phenylamide group (including mefenoxam and metalaxyl). The map below, from usablight.org shows the counties in which late blight has been confirmed in 2021. For more information on this disease: <https://vegpath.plantpath.wisc.edu/resources/potato-late-blight/>.

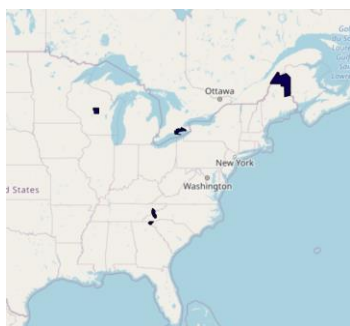


Figure on left indicates counties (blue) in which late blight has been confirmed in 2021. So far, all confirmations have resulted in US-23 *Phytophthora infestans*. To help in selection of fungicides for managing late blight in potato in Wisconsin, I have updated a table which includes modes of action and resistance risk management groups.

<https://vegpath.plantpath.wisc.edu/wp-content/uploads/sites/210/2021/07/2021-Potato-Late-Blight-Fungicides.pdf>

The **early blight** P-Day threshold of 300 has been exceeded in all potato plantings of Wisconsin. A listing of details of currently registered fungicides for early blight management can be found in our 2021 Wisconsin Vegetable Production guide: <https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422-2021.pdf>

Early blight has defoliated our non-treated 'Russet Burbank' control plantings at the Hancock Agricultural Research Station. Plots have looked quite desiccated for the past 2 weeks. Some of our better foliar fungicide programs are retaining foliar health for at least an additional month which typically results in substantial yield and quality increase. We are planning to vine kill the trial in the coming week or two with harvest to follow during the third week of September. Pictures from this afternoon, below, show one of our non-treated control plots on the left and a successful foliar fungicide program (so far, plot received 9/10 applications) on the right.



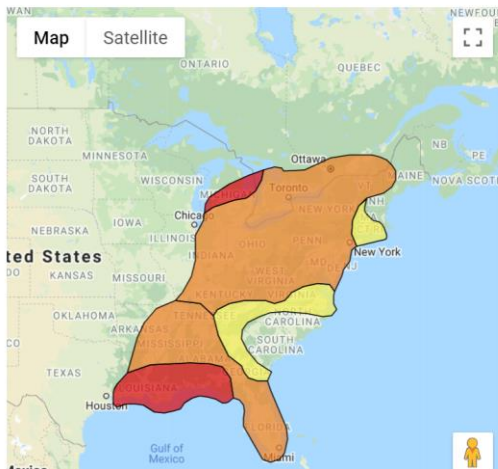
Cucurbit Downy Mildew Update: Over the past week, cucurbit downy mildew was confirmed in the following locations: OH (pumpkin), MS (cucumber and cantaloupe), and TN (cucumber, ornamental gourds). There have been no samples of cucurbit downy mildew through our UW Plant Disease Diagnostic Clinic, or my Vegetable Pathology Lab so far this season. No downy mildew has been observed in our sentinel plots in WI.

This season, so far, the disease has been documented in AL, CT, DE, FL, GA, IN, KY, LA, MA, MD, MI, MS, NC, NH, NJ, NY, OH, Ontario Canada, PA, RI, SC, TN, VA, and WV. There is no predicted movement of the pathogen into Wisconsin at this time— as reflected in the recent forecast (for Sunday August 29, 2021) depicted below from [https:// cdm.ipmpipe.org/](https://cdm.ipmpipe.org/)

Please contact me or the UW Plant Pathology Diagnostic Clinic for confirmed diagnoses of cucurbit downy mildew. <https://pddc.wisc.edu/>

Due to the presence of unique pathogen types (Clade 1 and 2 types with unique host ranges among cucurbits), our improved understanding of the cucurbit downy mildew type that may be in our region can aid in recommending the most appropriate prevention of crop disease and resulting loss.

Sunday, 2021-08-29



HIGH Risk for cucurbits in the FL panhandle, southern AL and MS, central and southern LA, nearby southeast TX, and central MI. Moderate Risk in the FL peninsula, southwest GA, central and northern sections of AL and MS, northern LA, eastern AR, central and western TN, KY, IN, OH, WV, southwest / western / northern VA, MD, DE, NJ, PA, southern MI, the whole of southern ON, southern QC, NY, central and northern VT, northern NH, and western ME. Low Risk to cucurbits in southern VT, western MA, CT, RI, Long Island, south-central and southeast VA, northern NC, the NC mountains, eastern TN, and northern / west-central / southeast GA. Minimal risk elsewhere.