Vegetable Crop Update

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

Extension UNIVERSITY OF WISCONSIN-MADISON

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Calendar of Events:

December 3-5, 2024 – Midwest Food Producers Assoc. Processing Crops Conference, Kalahari Convention Center
January 13-14, 2025 – Wisconsin Agribusiness Classic, Alliant Energy Center, Madison, WI
February 4-6, 2025 – UW-Madison Div. of Extension & WPVGA Grower Education Conference & Industry Show, Stevens Point, WI

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Current P-Day (Early Blight) and Disease Severity Value (Late Blight) Accumulations will be posted at our website and available in the weekly newsletters. Thanks to Ben Bradford, UW-Madison Entomology for supporting this effort and providing a summary reference table: https://agweather.cals.wisc.edu/thermal-models/potato. 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. Data from the modeling source: https://agweather.cals.wisc.edu/vdifn are used to generate these risk values in the table below. I've estimated early, mid-, and late planting dates by region based on communications with stakeholders. These are intended to help in determining optimum times for preventative fungicide applications to limit early/late blight in WI.

	Planting Date		50% Emergence Date	Disease Severity Values (DSVs) *through 8/10/2024*	Potato Physiological Days (P-Days) *through 8/10/2024*
Spring Green	**Early**	Apr 3	May 9	**47**	**781**
	Mid	Apr 17	May 12	**47**	**765**
	Late	May 10	May 25	**42**	**663**
Arlington	**Early**	Apr 5	May 10	**22**	**776**
	Mid	Apr 20	May 15	**22**	**745**
	Late	May 12	May 25	**20**	**666**
Grand Marsh	**Early**	Apr 5	May 10	**43**	**752**
	Mid	Apr 20	May 15	**43**	**723**
	Late	May 12	May 25	**36**	**650**
Hancock	**Early**	Apr 10	May 17	**53**	**705**
	Mid	Apr 22	May 21	**51**	**675**
	Late	May 14	June 2	**46**	**595**
Plover	**Early**	Apr 14	May 18	**41**	**701**
	Mid	Apr 24	May 22	**37**	**669**
	Late	May 19	June 7	**33**	**553**

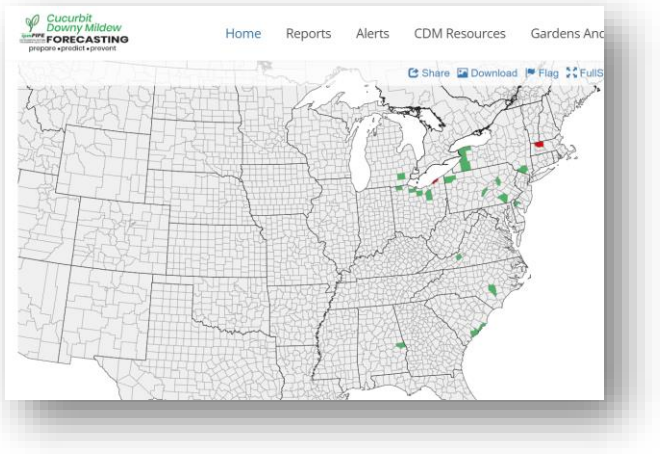
Antigo	**Early**	May 1	May 24	**42**	**615**
	Mid	May 15	June 1	**42**	**573**
	Late	June 1	June 15	**29**	**471**
Rhinelander	**Early**	May 7	May 25	**21**	**599**
	Mid	May 18	June 8	**20**	**504**
	Late	June 2	June 16	**20**	**456**

Late blight of potato/tomato. Late blight diagnostics are available at no cost to WI growers and gardeners. Dr. Brian Hudelson of our UW Plant Disease Diagnostic Clinic and Dr. Amanda Gevens of UW-Potato & Vegetable Pathology can offer confirmation of the pathogen. Dr. Gevens will also offer strain typing of the pathogen. The usablight.org website (https://usablight.org/map/) indicates a few reports of late blight from the US so far in 2024 including NY tomato (from GH earlier in the spring) and MI (US-23 from potato). Please keep in mind that the site is not comprehensive. Outside of this site, I'm aware of 2 Ontario Canada confirmations of potato and tomato late blight (US-23), and a Florida late blight sample from potato (March 2024). I'm aware of no new reports in the past week.

We accumulated just 0-1 Blitecast Disease Severity Values over the past week in WI. **All WI locations are above the threshold for late blight disease severity values and should receive preventative fungicide application to reduce the risk of disease.** An updated listing of fungicides for WI potato late blight management for 2024 can be found at the link below. Base protectants such as chlorothalonil and mancozeb offer broad-spectrum control of fungal and oomycete (water mold – like late blight) pathogens. https://vegpath.plantpath.wisc.edu/wp-content/uploads/sites/210/2022/07/2024-Potato-Late-Blight-Fungicides.pdf

Early blight of potato. All areas of production have reached the threshold for the application of foliar fungicides to limit early blight. Temperatures were optimal this past week for promoting early blight. https://vegpath.plantpath.wisc.edu/diseases/potato-early-blight/

Cucurbit Downy Mildew: Michigan confirmed downy mildew on **cucumber** in 17 counties so far this season (Washtenaw, Saginaw, Tuscola, Ingham, Bay, Iosco, Arenac, Muskegon, Sanilac, Midland, Clinton, Livingston, Allegan, Van Buren, Newaygo, Berrien, and Lapeer). OH and MA also confirmed cucumber downy mildew this past week. To date, downy mildew field infections, and spores from air sampling in MI, have been of Clade 2 - cucumber and cantaloupe strain type. No field disease confirmations were made in Wisconsin.



Confirmed reports of cucumber downy mildew this past week in OH and MA. In red, US counties with reports of cucurbit downy mildew during the past 7 days. Green counties indicate a former report of the disease greater than 7 days ago. From: https://cdm.ipmpipe.org/

Management information can be sourced here: https://vegpath.plantpath.wisc.edu/2022/07/03/update-10-july-3-2022/

Onion Stemphylium leaf blight. *Written by Amanda Gevens, Ariana Abbrescia, Russell Groves, and Ben Bradford.* **Stemphylium leaf blight** has been identified in several WI onion fields over the past few weeks and is a fungal disease of alliums caused by *Stemphylium vesicarium*. It causes oval-shaped, tan or brown lesions on the leaves, which may appear water-soaked and darker when sporulating. These lesions can enlarge and overtake entire leaves, as well as girdle seed stems. Blighted leaves can compromise the bulb, reducing yield and leading to secondary infections. The primary source of inoculum is infected plant debris and the pathogen is spread via airborne spores. The pathogen often appears as secondary infection of downy mildew lesions, herbicide or physical plant injury, heat-stressed/drought-stressed foliage. Conditions favoring this disease include high humidity, moderate temperatures, excess moisture from precipitation or irrigation, high dew point.

Infection & Disease Cycle. *Stemphylium vesicarium* overwinters in plant debris. Once temperatures warm in the spring, airborne spores called "ascospores" are released from this plant debris, infecting nearby leaves that have been wounded by other diseases (including downy mildew), insects, heat-stress, or damaging elements including weather, or chemical/mechanical injury. Subsequent lesions will produce airborne and waterborne spores called "conidia" that will travel, causing secondary infections. At the end of the season, the pathogen will again overwinter in debris, continuing the disease cycle.

Cultural Control. Scouting regularly allows early identification of disease before significant spread and damage. The following practices can also help prevent disease development:

- Rotate away from susceptible crops (3-4 years)
- Maintain proper nutrition & avoid excessive nitrogen application
- Maintain proper moisture levels in the crop
- Take care with use of herbicides to avoid phytoxicity or other injury
- Destroy infested plant debris & culls
- Manage onion downy mildew

Chemical Control. For Wisconsin-specific fungicide information, refer to the Commercial Vegetable Production in Wisconsin (A3422), a guide available through the UW Extension Learning Store website. Or, for home garden fungicide recommendations, see Home Vegetable Garden Fungicides (D0062), a fact sheet available through the UW Plant Disease Diagnostic Clinic website. Always follow label directions carefully.

Resources

- Commercial Vegetable Production in Wisconsin (A3422) from the UW Extension Learning Store. This guide offers the latest recommendations for disease, insect, and weed management in Wisconsin's most common commercial vegetable crops. Also included are lime and fertilizer recommendations as well as insect identification information and keys.
- UW Plant Disease Diagnostics Clinic. The University of Wisconsin-Madison/Extension Plant Disease Diagnostics Clinic (PDDC) provides assistance in identifying plant diseases and provides educational information on plant diseases and their control.

References

- Nischwitz, Claudia. 2020. "Purple Blotch and Stemphylium Leaf Blight." 2020. https://extension.usu.edu/vegetableguide/onion/purple-blotch-stemphylium-leaf-blight.
- Swett, C.L., B.J. Aegerter, T.A. Turini, and A.I. Putman. 2019. "Purple Blotch and Stemphylium Leaf Blight / Onion and Garlic / Agriculture: Pest Management Guidelines / UC Statewide IPM Program (UC IPM)." 2019. https://ipm.ucanr.edu/agriculture/onion-and-garlic/purple-blotch-and-stemphylium-leaf-blight/.

Please note an upcoming event at the Fondy Farm on August 20, 2024 in Mequon Wisconsin.