



Vegetable Crop Update

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

No. 16 – September 1, 2024

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- Potato production updates
- Potato late blight and early blight updates
- Cucurbit downy mildew updates

Calendar of Events:

December 3-5, 2024 – Midwest Food Producers Assoc. Processing Crops Conference, Kalahari Convention Center

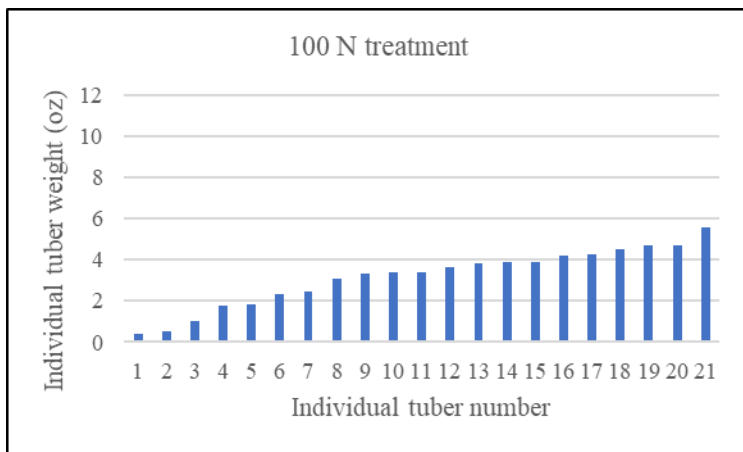
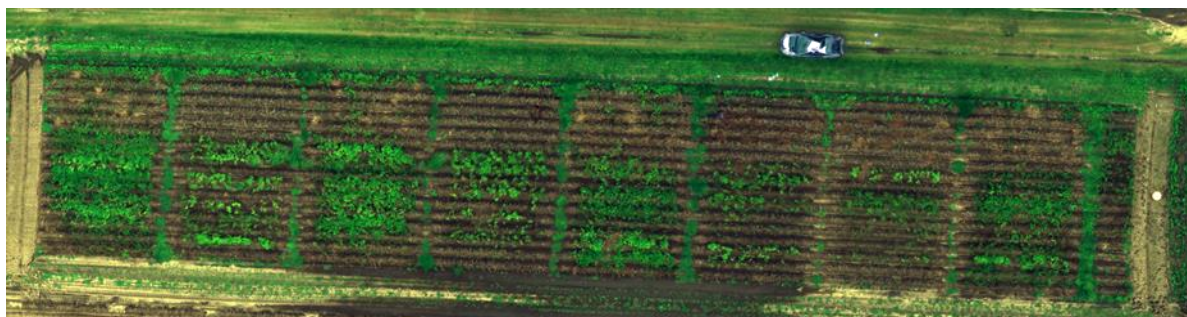
January 13-14, 2025 – Wisconsin Agribusiness Classic, Alliant Energy Center, Madison, WI

February 4-6, 2025 – UW-Madison Div. of Extension & WPVGA Grower Education Conference & Industry Show, Stevens Point, WI

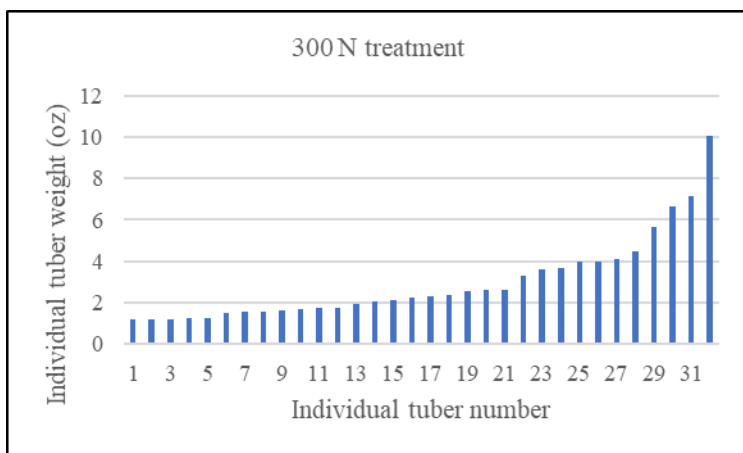
Yi Wang, Associate Professor & Extension Potato and Vegetable Production Specialist, UW-Madison, Dept. of Plant and Agroecosystem Sciences, 608-265-4781, Email: wang52@wisc.edu.

We just did our last digging of the season on Wednesday, and our two N treatments are showing more obvious differences in maturity, with more dead and senesced vines under the 100 N treatment as can be seen in the image below. We can also see that the lower N rate at 100 lb/acre set less tubers, showed lower average tuber weight, and yielded less than the higher N rate at 300 lb/acre. Total weight from the 100 lb N/acre was 4.2 lb for two plants, and total weight from the 300 lb N/acre was 5.9 lb for two plants (these numbers were lower than last digging, and could be not representative of the true yield). For the 100 lb/acre treatment, Portage Russet, the yellow French fry variety, and a full-season French fry variety still had green vines. For other varieties, they were mostly fully dead. Our first vine kill application is scheduled on 9/3.





Total tuber weight from two plants under 100 lb N/acre: 4.2 lb



Total tuber weight from two plants under 300 lb N/acre: 5.9 lb

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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) <i>through 8/31/2024</i>	Potato Physiological Days (P-Days) <i>through 8/31/2024</i>
Spring Green	Early	Apr 3	May 9	62	957
	Mid	Apr 17	May 12	62	940
	Late	May 10	May 25	57	838
Arlington	Early	Apr 5	May 10	30	956
	Mid	Apr 20	May 15	30	925
	Late	May 12	May 25	28	846
Grand Marsh	Early	Apr 5	May 10	54	927
	Mid	Apr 20	May 15	54	898
	Late	May 12	May 25	47	825
Hancock	Early	Apr 10	May 17	69	884
	Mid	Apr 22	May 21	67	854
	Late	May 14	June 2	62	774
Plover	Early	Apr 14	May 18	56	880
	Mid	Apr 24	May 22	52	848
	Late	May 19	June 7	48	733
Antigo	Early	May 1	May 24	58	781
	Mid	May 15	June 1	58	740
	Late	June 1	June 15	45	641
Rhineland	Early	May 7	May 25	31	770
	Mid	May 18	June 8	30	675
	Late	June 2	June 16	30	627

Late blight of potato/tomato. Late blight diagnostics continue to be 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 reports of late blight from the US so far in 2024 including NY (US-23), MI (US-23), ME (US-23), PA, and TN. Please keep in mind that the site is not comprehensive. Outside of this site, I'm aware of our single WI late blight report on tomato from this past week, 2 Ontario Canada confirmations of potato and tomato late blight (US-23), and a Florida late blight sample from potato (March 2024).

Late season late blight control in potato. Late blight does not appear to be widespread in WI – there have been no other reports in WI since last week's tomato finding on August 28, 2024.

<https://vegpath.plantpath.wisc.edu/2024/08/28/late-blight-tomato-dane-co-wi/> It's important to remain vigilant in managing the potato crop for late blight through senescence and harvest. Dr. Yu Monica Chen and Ms. Rosa Fabian in the Gevens Potato and Vegetable Pathology Lab ran allozymes analyses tests this past week to determine the genotype/clonal lineage/strain type of the tomato late blight found in Dane County. It looked like US-23, but we are re-running the tomato fruit samples as there were other pathogens in the infected tissues which muddied the results. Monica worked over the past few days to generate cleaner cultures for improved analyses early this week. I'll share an update on Tuesday. US-23 *Phytophthora infestans* can typically be controlled with a range of fungicides including metalaxyl (ie: Metastar) and mefenoxam (ie: Ridomil). Continued foliar fungicide use can keep the crop protected in this final stage and limit late-season late blight infections that can

further develop in a stored crop. Practice good harvest, movement, and storage practices to maintain the health and quality of tubers.

We accumulated few (0-8) 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. This disease was unusual this year with a typical timeline for onset, but slower progression than most years due to high temperatures in July. A late season ‘flush’ of early blight was noted in many central and southern WI potato fields. I suspect that cooler temperatures with moisture in the late season promoted the uptick of activity. <https://vegpath.plantpath.wisc.edu/diseases/potato-early-blight/>

Cucurbit Downy Mildew: To date, downy mildew field findings in the US, including WI from this past week (8/29), have been caused by Clade 2 - cucumber and cantaloupe strain type. <https://vegpath.plantpath.wisc.edu/2024/08/29/cucumber-downy-mildew-adams-co-wi/> No additional reports have come in on other cucurbit types – just cucumber from a commercial field at this time. No cucurbit downy mildew was noted on our cucurbit sentinel plot at the UW Hancock Agricultural Research Station when I last looked on Aug 28, 2024. The sentinel plot has 7 different cucurbit types out in the open field without fungicides. I observe 1-2X each week for downy mildew symptoms.

We have seen ‘look-alike’ diseases in WI which have primarily been angular leaf spot, Alternaria, or Anthracnose. Phytophthora crown and fruit rot has also been active in Wisconsin fields over the past month in fields with soilborne infestations of the pathogen *Phytophthora capsici*. This particular Phytophthora on cucurbits, as well as solanaceous crops, is highly favored by hot and wet weather. For more information: <https://vegpath.plantpath.wisc.edu/diseases/cucurbit-phytophthora-blight-crown-rot/>. Management guidance: <https://learningstore.extension.wisc.edu/products/commercial-vegetable-production-in-wisconsin>



No new reports of cucumber downy mildew this past week outside of WI. 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/>