Vegetable Crop Updates

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

Extension UNIVERSITY OF WISCONSIN-MADISON

September 28, 2025

In This Issue:

- Late blight updates for potato/tomato
- Cucurbit downy mildew updates

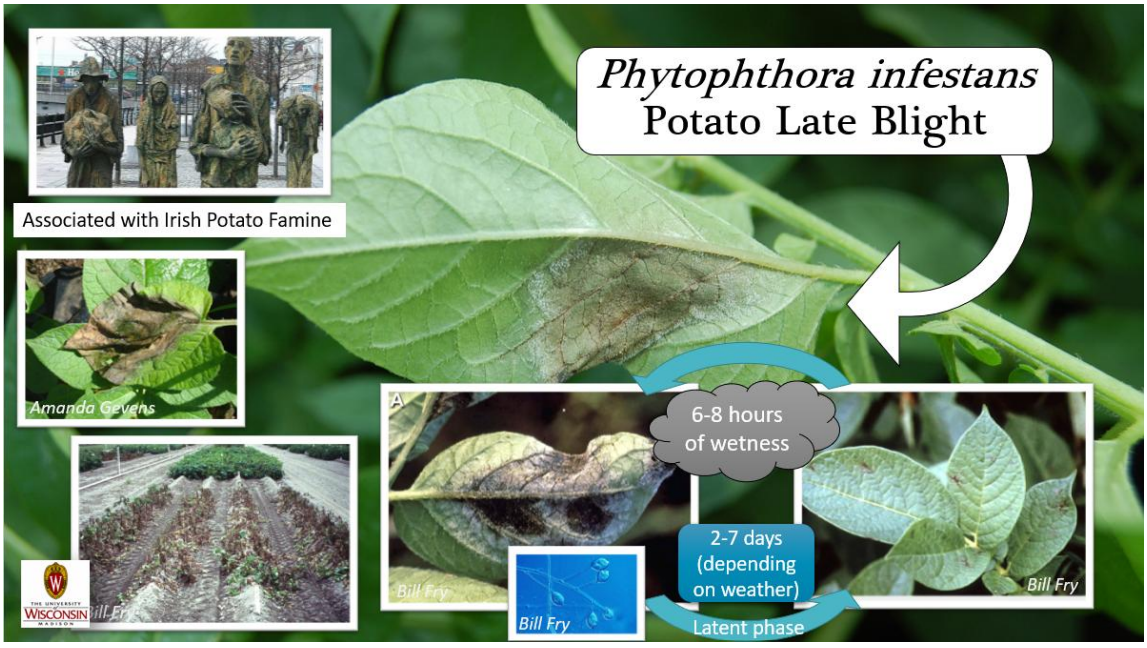
Calendar of Events:

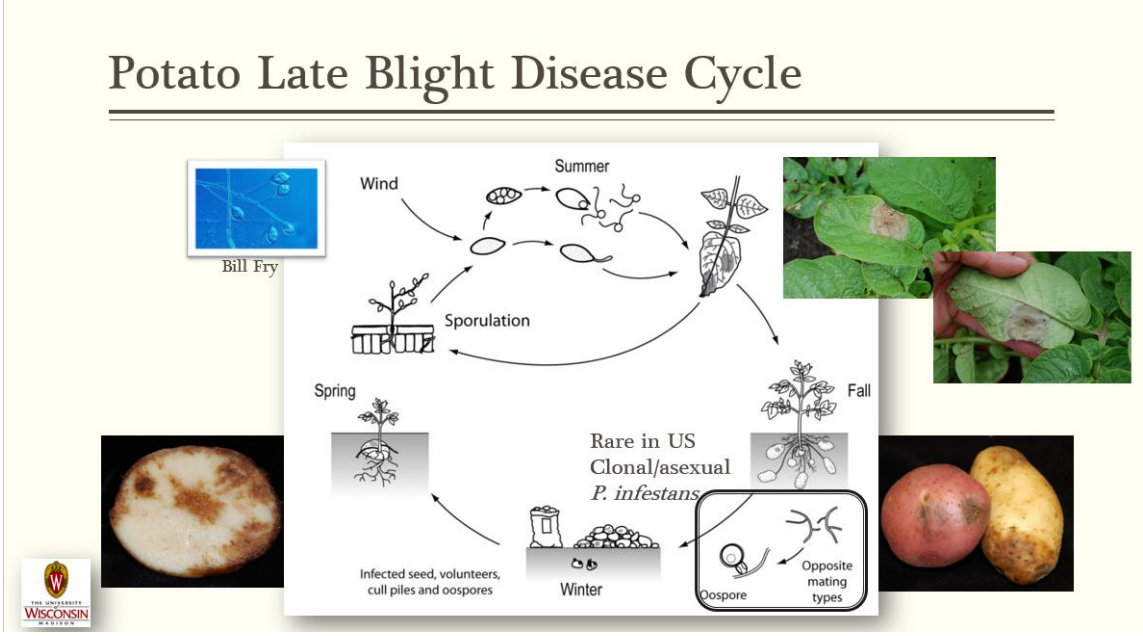
December 2-4, 2025 – Midwest Food Producers Assoc. Processing Crops Conference, Kalahari Convention Center
January 12-13, 2026 – Wisconsin Agribusiness Classic, Kalahari Convention Center
February 3-5, 2026 – UW-Madison Div. of Extension & WPVGA Grower Education Conference & Industry Show, Stevens Point, WI

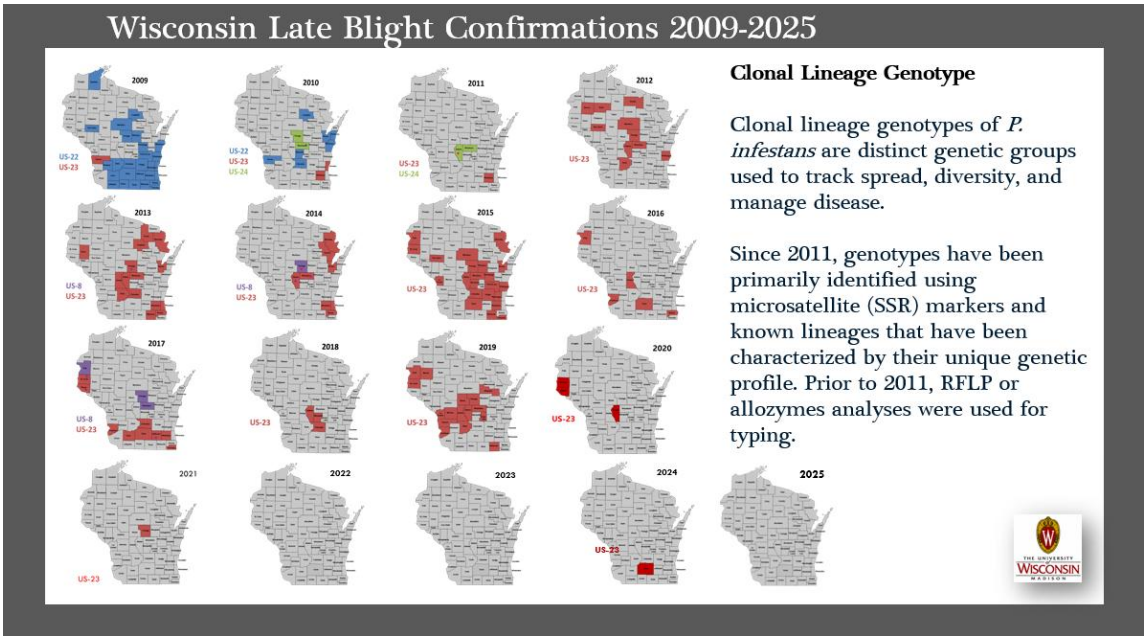
Amanda Gevens, Professor & Extension Vegetable Pathologist, UW-Madison, Dept. of Plant Pathology, 608-575-3029, gevens@wisc.edu, Lab Website: https://vegpath.plantpath.wisc.edu/.

Late blight of potato/tomato. I'm aware of no new reports of late blight in the US this past week. Findings thus far in potato and tomato have been confirmed as US-23 *Phytophthora infestans* (still sensitive to mefenoxam/metalaxyl (ie: Ridomil) in western NY and Ontario Canada. Here in Wisconsin, we saw limited accumulations of 5-7 DSVs across WI this past week. https://agweather.cals.wisc.edu/vdifn?model=late-blight
Please find a fungicide listing for Wisconsin potato late blight management:
https://vegpath.plantpath.wisc.edu/documents/potato-late-blight-fungicides/

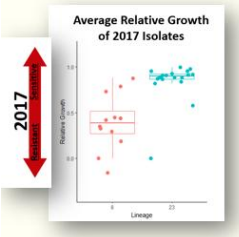
So far, we have not had any reports of late blight in tomato or potato in Wisconsin in 2025! I provide a season summary of late blight for 2025, with a review of the disease and its management in a series of slides to follow this article. Interestingly, there has been recent research indicating that the late blight pathogen can acquire resistance to mefenoxam (or metalaxyl) within a growing season. This further emphasizes the importance of early and thorough management of this disease. I acknowledge Dr. Katie Gold for her work on a few of the slides.




Potato Late Blight Disease Cycle
Bill Fry
Wind
Summer
Sporulation
Spring
Fall
Rare in US
Clonal/asexual
P. infestans
Infected seed, volunteers,
cull piles and oospores
Winter
Oospore
Opposite
mating
types


Wisconsin Late Blight Confirmations 2009-2025
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Clonal Lineage Genotype
Clonal lineage genotypes of P. infestans are distinct genetic groups used to track spread, diversity, and manage disease.
Since 2011, genotypes have been primarily identified using microsatellite (SSR) markers and known lineages that have been characterized by their unique genetic profile. Prior to 2011, RFLP or allozymes analyses were used for typing.

Predominant *P. infestans* Genotypes in the US 1840-Present

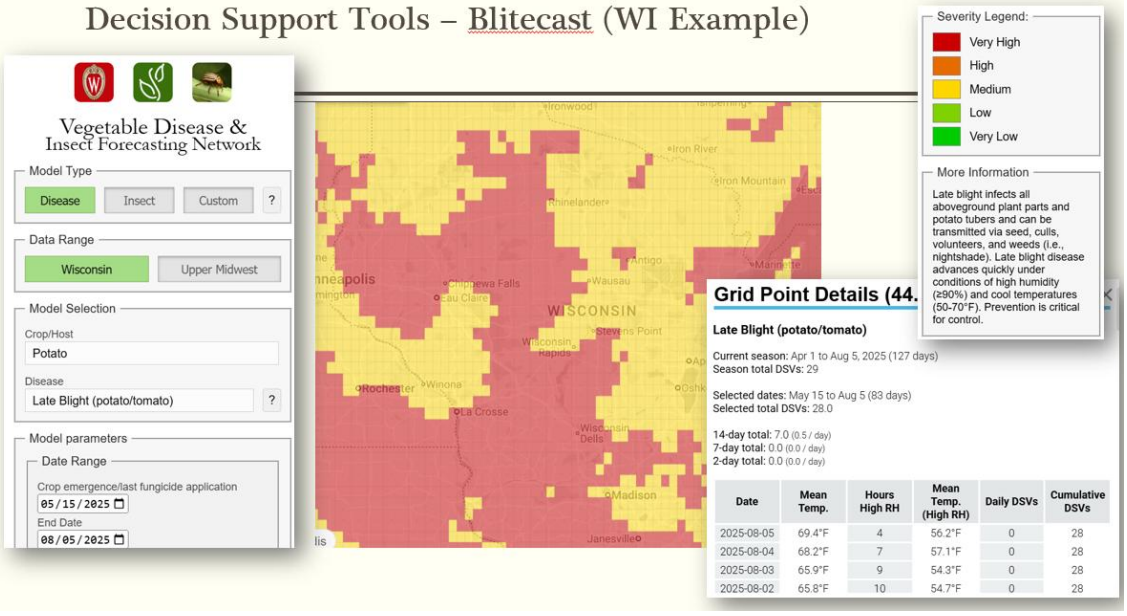


Clonal Lineage	Mating Type	Host (s)	Years Found	Mefenoxam Sensitivity
US-1	A1	potato	1840-present	sensitive
US-6	A1	potato/tomato*	1979-94	sensitive
US-7	A2	potato/tomato*	1992-95	resistant
US-8	A2	potato*/tomato	1992-present	resistant
US-11	A1	potato/tomato	1994-present	resistant
US-17	A1	tomato	1996	resistant
US-18	A2	tomato	1995-98	sensitive
US-22	A2	potato/tomato*	2009-present	sensitive
US-23	A1	potato/tomato*	2010-present	sensitive
US-24	A1	potato*/tomato	2010-present	resistant
US-25	A2	tomato	2018	resistant

*= favored host if two hosts are shown. Table (modified) from Halterman & Gevens, *Phytophthora infestans* in the U.S., book chapter, Phytophthora: A Global Perspective, Edited by K. H. Lamour. CABI published 2013.

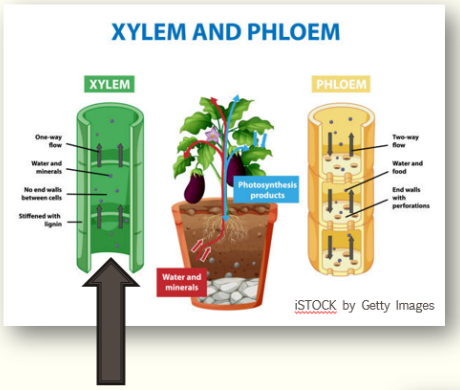
THE UNIVERSITY of WISCONSIN MADISON

Decision Support Tools – Blitecast (WI Example)



Fungicide Resistance Action Committee (FRAC) 4

- FRAC 4 is the classification of fungicides whose mode of action (MOA) is to inhibit nucleic acid metabolism by targeting the enzyme responsible for protein synthesis.
- This group, primarily composed of phenylamide fungicides, includes acylalanines like metalaxyl and mefenoxam.
- FRAC 4 fungicides are acropetally mobile (they move upwards in the plant through xylem) and are most effective as protectants but can also have a kickback effect on existing infections.
- Resistance to FRAC 4 fungicides is considered high, especially in oomycete pathogens (ie: Phythophthora, Pythium).



Timeline of Metalaxyl/Mefenoxam Resistance in *Phytophthora infestans* in the USA

Late 1970s
LAUNCH Metalaxyl was registered as a pesticide by US EPA

1980s
HONEYMOON Provided outstanding control of late blight (US-1) in North America

Tolerances were established for vegetables including potatoes

Early 1990s
RESISTANCE is documented in several states

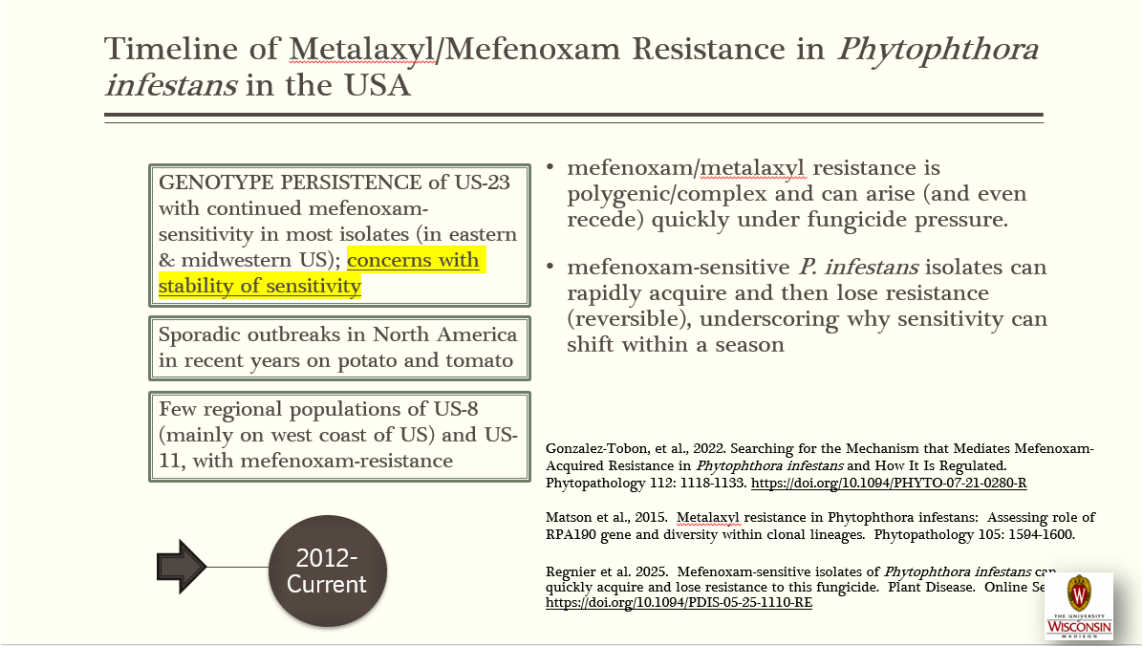
Epidemics contained many A2 mating type, metalaxyl resistant isolates

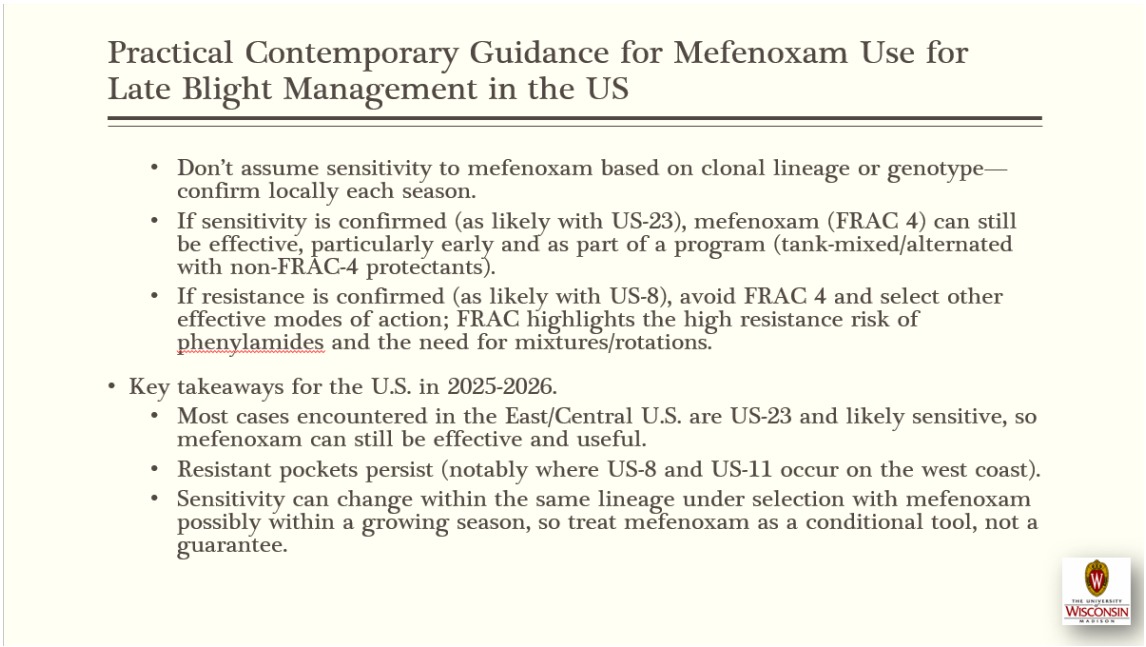
Mid-1990s
NEW GENOTYPES *P. infestans* US-8 displaced US-1. US-8 was broadly resistant to metalaxyl & mefenoxam (with cross-resistance)

MEFENOXAM (metalaxyl-M, the R-enantiomer) was introduced on potato (1996)

2009-2012
GENOTYPE TURNOVER 2009 "transplant" outbreak resulted in widespread distribution of US-22, -23, -24 in eastern US

US-23 predominated and was mefenoxam-sensitive





For custom values of P-Days (for Early Blight) and DSVs (for Blitecast for Late Blight), please explore the UW Vegetable Disease and Insect Forecasting Network tool for P-Days and DSVs across the state (https://agweather.cals.wisc.edu/vdifn). Fungicide details can be found in the 2025 Commercial Veg. Production in WI Extension Document A3422: https://cropsandsoils.extension.wisc.edu/articles/2025-commercial-vegetable-production-in-wisconsin-a3422/

Cucurbit Downy Mildew: No downy mildew was seen on cucurbits this past week at HARS, and none reported through our UW Plant Disease Diagnostic Clinic. There was a confirmed report of cucurbit downy mildew in South Carolina over this past week as reported through the Cucurbit Downy Mildew ipm PIPE website: https://cdm.ipmpipe.org/.