Vegetable Crop Update

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

Division of Extension
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In This Issue

Nitrate-N levels in groundwater

Disease forecasting for early and late blight in potato

Angular leaf spot in cucurbits

Cucurbit downy mildew

Calendar of Events

July 16, 2020 – UW Hancock Ag Research Station Field Day CANCELLED
December 1-3, 2020 – Midwest Food Producers Association Annual Convention/Processing Crops Conference, Kalahari, Wisconsin Dells, WI
February 2-4, 2021 – UW-Madison Div. of Extension & WPVGA Grower Education Conference, Holiday Inn, Stevens Point, WI

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This past week, we not only collected water samples from a well that irrigates our research plots at the UW Hancock Ag Research Station (HARS), but also we collaborated with a nearby potato farm to collect some water samples from a corn field that grew potatoes last season. We then tested the nitrate-N levels in these samples, below are the results:

Location	Depth to groundwater table (feet)	Date	Time from start of irrigation (hours)	Nitrate-N (ppm)
HARS	20	25-Jun	0	25.3
		25-Jun	0.5	24.3
		25-Jun	1	24.1
		25-Jun	2	24.7
Commercial field near HARS	60	25-Jun	1	19
		25-Jun	4	18.5
		25-Jun	8	18.9
		25-Jun	18	18.5

Again the results showed that within each irrigation event, there was no difference of Nitrate-N levels in the groundwater with regards to timing of the test. Overall, 1ppm of Nitrate-N in 1'' of irrigated groundwater equals to 0.23 lb N / acre.

This week's vlog recorded our petiole and leaf tissue collections from a nitrogen trial at HARS. https://www.youtube.com/watch?v=rMtl8SKm38Q&t=3s

Proud to be a spudbadger! - plant tissue collection for N...

No views • 6 minutes ago

So far all of our plots planted between April 30th and May 4th that received normal N treatments (about 180 lb N/acre as of July 1st) have achieved canopy closure and flowering. We dug some Russet Burbank potatoes, the largest size is about 2oz, and average tuber size is about 1oz.

Amanda Gevens, Dept. Chair, Associate Professor & Extension Specialist, UW-Madison Plant Pathology, gevens@wisc.edu, Cell: 608-575-3029. https://vegpath.plantpath.wisc.edu/

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). 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. TBD indicates that data is To Be Determined as time progresses. Weather data used in these calculations comes from weather stations that are placed in potato fields in each of the four locations. Data are available in graphical and raw data formats for each weather station at: https://vegpath.plantpath.wisc.edu/dsv/

Location	*Planting Date*		50% Emergence Date	Disease Severity Values 7/1/20	Potato Physiological Days 7/1/20
Grand Marsh	Early	Apr 17	May 18	37	328
	Mid	Apr 25	May 26	34	273
	Late	May 6	June 1	31	232
Hancock	Early	Apr 8	May 18	22	344
	Mid	Apr 20	May 25	20	293
	Late	May 4	May 30	17	256
Plover	Early	Apr 10	May 23	28	301
	Mid	Apr 20	May 30	22	247
	Late	May 5	June 1	22	234
Antigo	Early	May 14	June 5	14	205
	Mid	May 24	June 10	14	167
	Late	Jun 1	June 17	12	120

Late Blight Management: Our DSVs are reported here from emergence to July 1. I will send out an update on Wed of this coming week to offer accumulations from July 1 to 7. Due to much less rainfall and higher heat over this past week, DSVs have not substantially accumulated. **All plantings of potatoes in the Grand Marsh, Hancock, and Plover areas are nearly at, or have exceeded threshold and should receive preventative fungicide application for late blight management.**

Early Blight Management: PDays are exceeding the threhold of 300 for early planted potatoes in Grand Marsh, Hancock, and Plover areas. Totals are rapidly accumulating with higher temperatures.

For more information about fungicide selections, please see the Potato section of the A3422 Commercial Vegetable Production Guide for Wisconsin, 2020.
https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422-2020.pdf

As a reminder the UW Plant Disease Diagnostic Clinic is open for sample processing, but they cannot take walk-in samples; all must come in the mail or connect with a UW representative to have samples brought directly to the lab. We have a 1-2X weekly drop off from the UW Hancock ARS to Madison. E-mail diagnostics have been on the rise and can be very useful in narrowing causes of challenges in potato and vegetable crops. Please send pics and descriptions to me by email and we can get the dialogue going.

National Late Blight Reports: (https://usablight.org/map/) No new reports of late blight in the US over the past week. Late blight has been confirmed on tomato (FL) and potato (FL and AL) during the growing season of 2020. I will continue to monitor this national database and offer updates here.

Angular leaf spot on cucurbits is caused by the bacterium *Pseudomonas syringae* pv. *lachrymans.* Cultural controls include maintaining dry plan canopies through limited overhead irrigation and increased plant spacing. Some varieties have resistance. Copper-containing fungicides applied on a 5-7 day spray program when disease is favored (warm/wet conditions) can limit spread and development of infection. The pathogen can overwinter in crop debris and can also be seedborne. Hot and dry weather typically limits advancement and spread of this disease. For more information, see link below. See pictures of angular leaf spot from Professor Emeritus in Vegetable Pathology Dr. Walt Stevenson, below (note characteristic tattered appearance of leaves with 'shot hole' appearance and white, scabby look to rough leaves). http://learningstore.uwex.edu/assets/pdfs/A3801.PDF

Cucurbit downy mildew: Downy mildew has been confirmed in two southern counties in Michigan, with the most recent confirmation from the southeastern corner of the state. I recommend that preventative fungicides be applied to cucumbers. Several commercial programs, esp. for pickling cucumbers have included base protectants like chlorothalonil or mancozeb. These continue to be important tank mixes when you're applying specialty fungicides that might be specific to water molds/oomycetes (like Phytophthora crown and fruit rot and downy mildew). This was a surprising find as there were no closer reports to us other than North Carolina over the previous weeks.

Symptoms of downy mildew on cucurbits include distinctive pale green to yellow/brown in angular or vein-limited patches on leaf surfaces with accompanying gray to purple pathogen sporulation on leaf undersides. Pictures for reference can be found here: https://cdm.ipmpipe.org/photo-gallery-of-foliar-diseases-including-downy-mildew/

I provide a list of recommended fungicides, below, from Dr. Mary Hausbeck, Michigan State Univ. Her recent trials have demonstrated effectiveness of Previcur Flex, again, and so this is now back in the list of recommended treatments.

Also, please utilize our A3422 Commercial Vegetable Production Guide for Wisconsin for further information. In particular, see page 95 for cucumber downy mildew treatments.
https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422-2020.pdf

- Ranman + chlorothalonil or mancozeb
- Orondis Opti (chlorothalonil is part of the premix)
- Elumin + chlorothalonil or mancozeb
- Zampro + chlorothalonil or mancozeb
- Previcur Flex + chlorothalonil or mancozeb*

***Note:** Previcur Flex is back in the downy mildew fungicide recommendations for 2020 as it has been effective in the MSU research trials in 2018 and 2019. Prior to that, it had not been effective.
Since it's not yet possible to predict whether this year's downy mildew population will be controlled by Previcur Flex, be sure to use it as a tankmix with either chlorothalonil or mancozeb.

Please feel free to email or text pictures if you have any questions on symptoms. The UW Plant Disease Diagnostic Clinic is also open with mail access for physical samples. For more information on symptoms, disease cycle, and general management, please visit:
http://learningstore.uwex.edu/Assets/pdfs/A3978.pdf