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Calendar of Events

- December 3-5, 2019** – Midwest Food Producers Association Annual Convention/Processing Crops Conference, Wisconsin Dells, WI
- January 26-28, 2020** – WI Fresh Fruit & Vegetable Growers Conference, Wisconsin Dells, WI
- February 4-6, 2020** – UW-Madison Div. of Extension & WPVGA Grower Education Conference, Stevens Point, WI

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This spring prior to our potato planting my group took soil samples from five depths at the Hancock Ag Research Station and did some soil texture analysis. Table below shows the results:

Depth	Sand	Silt	Clay	Classification
0"-6"	83.43%	14.51%	2.05%	Loamy Fine Sand
6"-12"	82.96%	14.74%	2.33%	Loamy Fine Sand
12"-18"	83.33%	14.40%	2.27%	Loamy Fine Sand
18"-24"	87.44%	10.75%	1.81%	Fine Sand
24"-30"	90.17%	8.39%	1.44%	Fine Sand

The top 18", which is typically the rooting zone depth for potatoes, contains on average 83% of sand, and classified as loamy fine sand, the 18 – 30" depth contains over 87% of sand, and classified as fine sand. We also did analysis on the chemical properties of different depths, which is shown here:

Depth	pH	P	K	OM%	NO3-N	NH4-N
		ppm	ppm		ppm	ppm
0-6"	5.5	93	89	0.8	3.0	18.8
6-12"	5.1	98	82	0.9	2.0	8.3
12-18"	4.8	85	52	0.4	1.7	5.7
18-24"	4.7	72	46	0.4	1.6	4.1
24-30"	4.9	53	47	0.3	1.6	4.8

Not surprisingly, our soil organic matter and NPK levels are pretty low. Next week we will update you on the field capacity and permanent wilting point of each soil depth.

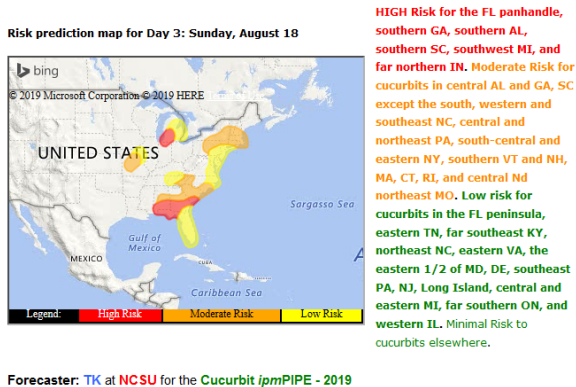
Many growers have mentioned to me that full season potatoes are about 10 days behind. I dug some of our Norkotah Russet, which have already completely senesced, yet the biggest tuber is only about 10 oz (shape is looking ok though). Early season potatoes have shown variable yield, with some fields above average, and some fields looking a little pathetic. We still have at least 3 weeks of growing season left,

and I hope the plants will keep catching up during this time. Some folks are planning on delaying vine killer application by a week or so to give the plants more time to bulk, however this strategy might lead to risk of sudden frost damage like last year.

Overall sweet corn has shown promising yield potential so far, but snap beans are pretty variable, especially in those areas hit by the hail on August 5th. Other vegetables like peas, carrots, beets, dry beans are predicted to be an average year.

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Cucurbit downy mildew: No reports of downy mildew on cucurbits in Wisconsin at this time. The cucurbit downy mildew reporting and forecasting site <http://cdm.ipmPIPE.org/> indicated new confirmations of downy mildew in DE, IN, MD, MI, MO, NC, NY, and PA during this past week. In 2019 so far, the site has documented confirmations in AL, FL, GA, MA, MD, MI, NC, NJ, PA, RI, SC, TN, and VA on various cucurbits. No apparent risk of movement of the pathogen to WI at this time, however, risk appears heightened at the southwestern corner of MI and into IN (map below). Details of report and situation from IN is included at link here from Purdue Univ. (Dr. Dan Egel) <https://vegcropshotline.org/article/downy-mildew-of-watermelon-2/> Keep watchful of this disease in cucurbit crops, especially cucumber types. **Please visit our 2019 WI Commercial Vegetable Production Guide** for further information pertaining to the fungicides listed in this newsletter. <https://learningstore.uwex.edu/Assets/pdfs/A3422.pdf>



Since the first report on July 17, late blight has been diagnosed on potato or tomato in seven WI counties. Wetter conditions with cooler temperatures advanced the disease this past week in central and western WI. We determined all late blight samples to be of the US-23 clonal lineage.

Date	County	Host Crop	Clonal Lineage
7/17/2019	Wood	Potato	US-23
8/2/2019	La Crosse	Tomato	US-23
8/6/2019	Portage	Potato	US-23
8/15/2019	Monroe	Tomato	US-23
8/14/2019	Adams	Potato	US-23
8/14/2019	Waushara	Potato	US-23
8/15/2019			
8/14/2019	Vernon	Tomato	US-23

Most isolates of US-23 can be managed with phenylamide fungicides such as mefenoxam and metalaxyl. It is critical that susceptible potatoes and tomatoes in and around the counties of reports be treated with a combination of antispore and protectant fungicides to limit reproduction of the pathogen and new infections. **Antispore fungicides include: Orondis, Forum, Curzate, Tanos, Ariston, Previcur, Revus, and Ridomil.** Outside of WI, late blight was confirmed in NY (this past week), TN, PA, and WA. In most of these instances, the pathogen was of the US-23 clonal lineage. Late blight fungicides registered for use in Wisconsin are available at the UW-Potato & Vegetable Pathology website or at link:

<https://wivegdis.wiscweb.wisc.edu/wp-content/uploads/sites/210/2019/06/2019-Potato-Late-Blight-Fungicides.pdf> The accumulation of DSVs this week ranged from 8 in Hancock and Antigo to 10 in Grand Marsh and 13 in Plover. The maximum number of DSVs per individual day is 4.

P-Days are currently over 300 for all potato across locations and emergence dates. Foliar fungicide applications are recommended to manage further spread and vine decline which can result in negative tuber size and quality. Starting on page 219 in the A3422 Commercial Vegetable Production Guide for Wisconsin please find listing of registered fungicides for early blight caused by *Alternaria solani* and brown spot caused by *Alternaria alternata*.

<https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422.pdf>

Current P-Day (Early Blight) and Disease Severity Value (Late Blight) Accumulations (Many thanks to Ben Bradford, UW-Madison Entomology; Stephen Jordan, John Hammel, & Samuel Meyer, 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. Weather data used in these calculations comes from stations that are in potato fields. Data are available in graphical and raw data formats for each weather station at: <https://wivegdis.plantpath.wisc.edu/dsv/>

<i>Location</i>	<i>Planting Date</i>	<i>Emergence Date (50%)</i>	<i>Disease Severity Values (DSVs) 8/18/19</i>	<i>Potato Physiological Days (P-Days) 8/18/19</i>
<i>Grand Marsh</i>	Early Apr 10	May 20	118	698.3
	Mid May 1	June 1	116	621.1
	Late May 20	June 9	114	562.61
<i>Hancock</i>	Early Apr 10	May 22	73	688.82
	Mid Apr 25	May 27	72	652.92
	Late May 15	June 8	70	563.40
<i>Plover</i>	Early Apr 22	May 27	109	662.42
	Mid May 1	June 1	109	628.02
	Late May 29	June 13	107	537.8
<i>Antigo</i>	Early May 14	May 29	62	557.48
	Mid May 24	June 8	62	550.57
	Late Jun 1	June 20	59	468.43