



Vegetable Crop Update

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

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Calendar of Events

July 23– UW-Hancock Ag Research Station Field Day, Hancock, WI
Aug 22 – UWEX-Langlade County Airport Research Station Field Day, Antigo, WI

Vegetable Crop Update – Alvin J. Bussan. University of Wisconsin-Madison, Department of Horticulture. ajbussan@wisc.edu. 608-225-6842.

The summer has progressed extremely quickly. From nearly continuous rain through much of May and June to extremely warm and humid conditions during the past two weeks of July. Crops have progressed quickly and we are on par with average production season.

Potato: Potato crop has entered the late bulking stage across most growing areas of the state and nearly all varieties. Early season varieties such as Superior, Red Norland, Gold Rush, and Russet Norkotah have grown quickly despite the heat over the past 7 or more days. Later growing varieties such as Burbank or Silvertop don't quite have the same size yet, but they tend to bulk for several more days later in the Bannock and Canela have just now entered late bulking stage, but they tend to bulk well into September.

Harvest has begun for earliest varieties and early yields are encouraging. Skin set for early harvested red skinned potatoes has been the biggest challenge to date. Current crops are taking over 14 days to set skin. I would anticipate similar challenges for other early harvested potatoes.

Several potato crops are facing stand issues in part due to seed piece decay during challenging planting conditions. Poor stands have resulted in lower crop densities and lower potato tuber set. Lower set will likely bulk more quickly and lead to more rapid development of potatoes with good size, but likely lower yields. This might serve as an opportunity in some cases as prices for fresh potatoes during early harvest are fairly strong.

The heat from last week did cause some stress on the crop. Many vines have layed over which is symbolic of the crop entering the late bulking stage of development. Last week cracks could be observed in the hills which many believe is indicative of rapid tuber growth as well. Many varieties prone to abnormal growth can be triggered by heat such as last week. Growers should anticipate irregular shapes evolving in russet crop over the next several days in response to heat.

Timing for application of MH-30 is rapidly approaching. Weather conditions predicted for later this week will be ideal for application of MH-30 with little crop damage and optimal improvement for tuber shape. While applications at this timing can reduce total yields, general

US No 1 yields will be improved in varieties such as Russet Burbank. This is especially true for potatoes such as Russet Burbank that are intended for harvest for fresh market.

Vegetable Disease Update – Amanda J. Gevens, Assistant Professor & Extension Vegetable Plant Pathologist, UW-Madison, Dept. of Plant Pathology, 608-890-3072 (office), Email: gevens@wisc.edu. Vegetable Path Webpage: <http://www.plantpath.wisc.edu/wivegdis/>

Current P-Day (Early Blight) and Severity Value (Late Blight) Accumulations

P-Day of ≥ 300 indicates threshold for early blight risk and triggers preventative application of fungicide. DSV of ≥ 18 indicates threshold for late blight risk and triggers preventative application of fungicide. Red text in table below indicates threshold has been met. NA indicates that information is not yet available as emergence has yet to occur. http://www.plantpath.wisc.edu/wivegdis/contents_pages/pday_sevval_2013.html

Location	Planted	50% Emergence	P-Day Cumulative	DSV Cumulative	Calculation Date
Antigo Area	Early 5/13	6/4	358	36	7/22/13
	Mid 5/22	6/17	281	28	7/22/13
	Late 6/7	6/29	183	12	7/22/13
Grand Marsh Area	Early 4/15	5/10	470	137	7/22/13
	Mid 5/1	5/21	435	137	7/22/13
	Late 5/15	6/5	344	110	7/22/13
Hancock Area	Early 4/20	5/15	518	58	7/22/13
	Mid 5/5	5/23	457	56	7/22/13
	Late 5/15	6/5	375	34	7/22/13
Plover Area	Early 4/22	5/17	494	115	7/22/13
	Mid 5/7	5/30	414	91	7/22/13
	Late 5/24	6/5	372	82	7/22/13

DSVs and Late Blight: From in-potato-field weather stations here in Wisconsin, we have far exceeded initial threshold for Blitecast in all monitored locations with the exception of late planted fields in the Antigo area. Accumulations of DSVs were low this past week at most sites and plantings due to high temperatures and several days of dry conditions. Grand Marsh and Plover, however, did have significant accumulation with additions of ~15 to 20 DSVs. A 5 to 7-day fungicide program is appropriate at this time given recent rain events and presence of pathogen. There has been limited spread from initial fields of detection.

The UW Vegetable Pathology site offers the Blitecast and Tomcast accumulations for foliar disease control from remotely sensed and forecasted weather data. Information is provided to help growers interpret the information offered for potato and carrot disease control. The link is entitled: “NEW: Blitecast & Tomcast estimates (from remotely sensed weather data), 2013” right in the center of the home page of: www.plantpath.wisc.edu/wivegdis/

Late blight status in WI and the U.S. No new reports of late blight from WI in this past week. To summarize, to date, late blight was confirmed in Adams County Wisconsin on Jun 28 on potato (US-23); Juneau County on Jun 29 on potato (US-23); and Sauk County on Jul 2 on tomato (US-23). **In the past week, NY (tomato and potato both US-23) and OH (tomato) confirmed new reports of late blight.** To date this production year, late blight has been reported in in FL, KY, LA, MA, MD, ME, MI, NJ, NY, PA, TN, WI, and WV. The website:

<http://www.usablight.org/> indicates location of positive reports of late blight in the U.S. and provides further information on disease characteristics and management.

P-Days and Early blight: P-Days have reached/surpassed the threshold of 300 in all but mid and late plantings in the Antigo area. Fungicide applications for the management of early blight are recommended at this time for all but mid and late planted fields in the Antigo area. Because of the dual risk of late and early blight, consider management options that control against both diseases. Symptoms of early blight have been noted in lower canopies in Hancock area and to the south.

Cucurbit Downy Mildew: has not been identified in Wisconsin at this time in commercial fields, home gardens, or our sentinel monitoring plots. **In the past week, several states reported cucurbit downy mildew including AL, MD, MI, NC, NY, OH, PA, and VA.** In summary this year, AL, DE, FL, GA, MD, MI, NC, NJ, OH, SC, TX, and Ontario Canada have reported cucurbit downy mildew across multiple cucurbit hosts. I will be keeping tabs on disease reports in the region and will provide updates in this newsletter. No forecasted risk of movement of spores from states reporting detects to Wisconsin at this time. The website: <http://cdm.ipmpipe.org/> offers up to date reports of cucurbit downy mildew and disease forecasting information.

The 2013 A3422 Commercial Vegetable Production in Wisconsin guide is available for purchase through the UW Extension Learning Store website: <http://learningstore.uwex.edu/Commercial-Vegetable-Production-in-Wisconsin2013-P540.aspx>

A pdf of the document can be downloaded or is available at the following direct link: <http://learningstore.uwex.edu/Assets/pdfs/A3422.pdf>

Soil Science Update – Dr. Matt Ruark, Assistant Professor & Extension Soil Scientist, UW-Madison, Dept. of Soil Science, 608-263-2889 (office), Email: mdruark@wisc.edu. Co-authored by Mack Naber, Research Technician in Soil Science, UW-Madison, and Jaimie West, Graduate Student in Soil Science, UW-Madison.

Early-season indication of how well ESN® has performed in 2013

Hancock trials

Nitrogen fertilizer trials at Hancock indicate that ESN has performed well as of 30 days after emergence (DAE). The main fertilizer treatments will be split into sub-treatments where some plots will receive additional N fertilizer applications (in 30 lb-N/ac intervals) based on rainfall events to assess how well ESN compares to conventional fertilizer with supplemental N applied. The ESN was applied 100% at emergence while the ammonium sulfate (AMS) and ammonium nitrate (AN) treatment were split applied ($\frac{1}{3}$ of N as AMS at emergence, $\frac{2}{3}$ of N as AN at tuberization). At 30 DAE, the ESN had greater average petiole nitrate concentrations across all N rates. All petiole nitrate-N concentrations are within the optimum range for Russet Burbank (2.0 to 2.3). The 45 DAE samples have been collected and are being analyzed.

Table 1. 2013 petiole nitrate-N concentrations from the Hancock nitrogen fertilizer trial.

Fertilizer	Rate lb-N/ac	Petiole Nitrate-N Concentration (30 Days After Emergence)	
			%
AMS & AN	200		2.47
AMS & AN	250		2.01
AMS & AN	300		1.93
	Ave.		2.13
ESN	200		2.29
ESN	250		2.25
ESN	300		2.20
	Ave.		2.25

On-farm trials

Based on results from an on-farm trial where half of a pivot received ESN and the other half received conventional N fertilizer applications, the ESN half has greater petiole nitrate-N concentrations (**1.34%**) compared to the conventionally fertilized half pivot (**0.98%**). The variety is Russet Burbank and the petiole samples were collected at approximately 50 DAE. The optimum range for Russet Burbank is 1.2 to 1.6% at this time point, so the conventionally fertilized has resulted in a less than optimum petiole nitrate concentration. This undoubtedly is the result of the large amount of rainfall that has occurred in this region. The grower has decided to apply additional N to the conventionally fertilized half. So, in this case, we can conclude that ESN has performed very well during the first half of the 2013 growing season.