



Vegetable Crop Update

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

No. 10 – May 27, 2016

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Late blight and early blight disease forecasting information for potatoes

Calendar of Events

July 14, 2016 – UW-Rhineland Agricultural Research Station Field Day
July 21, 2016 – UWEX Langlade County – Antigo Research Station Field Day
July 28, 2016 – UW-Hancock Agricultural Research Station Field Day
February 7-9, 2017 – UWEX/WPVG Grower Ed. Conf., Stevens Point, WI

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Disease Forecasting: What are potato Blitecast DSVs and P-days?: As we are now offering disease forecasting information and we have added new newsletter subscribers, I wanted to provide some explanation of the late blight and early blight disease forecasting concepts. Locations of in-field weather stations/disease forecasts will include: Antigo, Plover, Hancock, and Grand Marsh.

Blitecast (late blight forecasting): Computation of 18 disease severity values (DSVs) relies on maximum and minimum temperatures each day, the duration of relative humidity periods above 90% and the maximum/minimum temperatures during the relative humidity periods above 90%. For a given day, up to 4 DSVs can accumulate. We start the severity value calculations at approximately 50% crop emergence. When we reach a total of 18 severity values, we issue a warning which indicates that environmental conditions have been met which favor late blight. At 18 DSVs, the recommendation for preventive applications of effective late blight fungicides is made. An additional alert is issued when the first symptoms of late blight appear anywhere in the state. The determination of late blight management recommendations is made by taking into consideration DSVs, projected weather forecast, and presence/risk of inoculum. This information is published in our newsletter and will be disseminated in various other outlets as the season progresses.

Cornell University has been developing an enhanced late blight forecasting tool that also offers a Blitecast for forecasted weather. Dr. Bill Fry and his research group have been integrating additional parameters in the forecasting tool which modify the spray recommendation based on varietal resistance and previous fungicide applications (and likely residues). Here in WI, we are working with this tool for potato late blight management in comparison to our in-field forecasting and current management approaches. For more information on Cornell's Late Blight Decision Support System (DSS) tool, please refer to link below.
<http://newa.cornell.edu/index.php?page=potato-late-blight-dss>

The Potato P-Day accumulator (early blight prediction tool) is based on potato physiological development and accumulated weather conditions to generate early blight recommendations.

Once we reach 300 P-Days, calculated from 50% crop emergence onward, our spray recommendations take both the P-Day and severity value totals into account to generate 5 day, 7 day or 10 day spray interval recommendations. The interval is variable depending upon prevailing weather conditions and the presence of disease in the area. Typically, P-Day 300 is reached in early July and when potato rows are just beginning to touch (row closure).

Current P-Day (Early Blight) and Severity Value (Late Blight) Accumulations (R.V. James, UW-Plant Pathology/R.V. James Designs): 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 below indicates threshold has been met/surpassed. “-“ indicates that information is not available. Blitecast and P-Day values for actual potato field weather from Grand Marsh, Hancock, Plover, and Antigo will soon be posted at the UW Veg Path website at the tab “P-Days and Severity Values.” http://www.plantpath.wisc.edu/wivegdis/contents_pages/pday_sevval_2016.html

<i>Location</i>	Planting Date	50% Emergence	P-Day Cumulative	Disease Severity Value	Date of DSV Generation	Increase in DSV from -
<i>Antigo</i>	Early 5/1	-	-	-	-	-
	Mid 5/18	-	-	-	-	-
	Late 6/3	-	-	-	-	-
<i>Grand Marsh</i>	Early 4/15	5/22	-	-	-	-
	Mid 5/1	-	-	-	-	-
	Late 5/15	-	-	-	-	-
<i>Hancock</i>	Early 4/18	5/24	33	7	5/27	-
	Mid 5/3	-	-	-	-	-
	Late 5/20	-	-	-	-	-
<i>Plover</i>	Early 4/20	5/25	25	6	5/27	-
	Mid 5/5	-	-	-	-	-
	Late 5/20	-	-	-	-	-

Summary: Our Grand Marsh weather station is only sporadically collecting data and requires adjusting. As such, we were unable to generate forecast values for today. We will work to remedy this for next week. Both Hancock and Plover locations have seen approximately 50% crop emergence for 2-3 days with moderate – high accumulations of DSVs in both sites. Please refer to the newsletter #9 from earlier today regarding integrated late blight management strategies, especially for early season. P-Day values are still relatively low, but as typical, will continue to accumulate to reach threshold on/around July 1.

For further information on common diseases, insect and weed pest information, please consider the 2016 A3422 Commercial Vegetable Production in Wisconsin guide is available for purchase (\$10) through the University of Wisconsin Extension Learning Store website:

<http://learningstore.uwex.edu/Commercial-Vegetable-Production-in-Wisconsin2016-P540.aspx>

A pdf of the document can be downloaded for free at the following direct link:

<http://learningstore.uwex.edu/Assets/pdfs/A3422.pdf>