



Vegetable Crop Update

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

No. 3 – April 30, 2017

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Calendar of Events

July 20, 2017 – UW-Hancock ARS Field Day, Hancock, WI
July 27, 2017 – UWEX Langlade County Airport Research Station Field Day, Antigo, WI
January 21-23, 2018 – Wisconsin Fresh Fruit & Vegetable Conference, Wisconsin Dells, WI
February 6-8, 2018 – UWEX & WPVGA Grower Education Conference, Stevens Point, WI

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I will continue to coordinate and send out our UWEX Vegetable Crop Updates newsletters on a weekly basis throughout the 2017 growing season. Please let me know if you would like additional e-mail addresses added to our list serve. As in past years, the newsletters will be posted to my webpage shortly after their release. And, we will also post the newsletters at the UW Veg Pathology facebook page.

Potato planting has been moving along at a healthy pace, with this wet weather now stalling progress in some regions depending upon soil type and amount of precipitation. This wet weather cues me to remind growers that, as in past years, my program will offer disease forecasting/modeling for early blight (P-Days) as well as late blight (DSVs). I've included a brief reminder of these concepts, below.

Disease Forecasting: What are potato Blitecast DSVs and P-days?: 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).

Downy mildew confirmed on hops in Wisconsin. (M.E. Marks, UW-Madison Plant Pathology Graduate Research Assistant with A.J. Gevens): While my colleagues working with potatoes are getting ready for planting, those of us working with hops have our field season in full swing already! So far, the status of the crop seems to be on par with previous years. I observed our first hop shoots in mid-late March depending upon location and variety. At this point in the season, many growers have already performed their spring pruning of the first flush of hop shoots and regrowth is progressing rapidly. Spring pruning helps establish more even growth across varieties and can reduce the severity of hop downy mildew by both removing initial inoculum and helping to move early hop growth out of the highly conducive environmental conditions of early spring. Pruning can be accomplished via mechanical, chemical (herbicide) means, or sometimes both.

It should be noted that the potential effect of such pruning on yield, considering our shorter growing season when compared to the Pacific Northwest region, has not been evaluated here in Wisconsin. Growers should consider the growing habits of their particular hop varieties when making pruning decisions. Many northern growers have decided not to prune any varieties due to their delayed start. Additional information regarding these practices can be found in the *Field Guide for Integrated Pest Management in Hops*: a free resource available online (link below).

<https://www.usahops.org/resources/field-guide.html>



They say that April showers bring May flowers, but wet weather also brings us downy mildew. Downy mildew spikes have been observed in most of my regular scouting locations, and recently with the cool and rainy weather, heavy sporulation has been present. As a reminder, common symptoms of downy mildew infected spikes include stunted, brittle shoots, often showing yellow-green/chlorotic coloration (left). Leaves are typically seen to be curling downward, particularly leaves closer to the ground. The



black/gray fuzz of sporulation (pathogen reproduction) may be visible on the undersides of leaves (on left, photo taken on April 26, 2017). Note that these symptoms can vary slightly depending upon the hop variety, so it's a good idea to get familiar with what to look for.

This period of early-season disease management occurring from now until training is complete in another month or so is focused on reducing the initial pathogen inoculum as much as possible to prevent further plant infection later in the season. Due to the aggressive and potentially devastating nature of this disease in our Wisconsin climate, chemical intervention is often prescribed. A popular active ingredient to use at this time of year (post-prune but before training) is mefenoxam, which has good systemic activity within the hop plant and has been demonstrated to be highly effective. A complete list of fungicides registered in Wisconsin for hop downy mildew control can be found under the "Hops" tab of the UW Vegetable Pathology website.

Unsure if you have downy mildew? The University of Wisconsin-Madison/UWEX Plant Disease Diagnostic Clinic on campus is fully equipped to receive and analyze plant samples of all types for a small fee. Samples can be sent to:

Plant Disease Diagnostics Clinic
Dept. of Plant Pathology
University of Wisconsin-Madison
1630 Linden Drive
Madison, WI 53706-1598

For full sample collection/packaging instructions and additional information please visit the clinic website at <http://labs.russell.wisc.edu/pddc/> or contact Dr. Brian Hudelson at 608-262-286.



Welcome Dr. Yi Wang, our new Potato & Vegetable Horticulture Extension Specialist: We are pleased to welcome Dr. Yi Wang to our UW-Madison/UWEX potato and vegetable team! Dr. Wang earned her B.S. in China and then came to the U.S. and earned her PhD with Dr. Paul Bethke in the Department of Horticulture at the UW-Madison. She completed two years of a Post-doctoral Research Associate position with former UW-Madison/UWEX potato and vegetable production specialist, Dr. AJ Bussan, before joining University of Idaho Kimberly Research and Extension Center as an assistant professor in potato post-harvest physiology. Dr. Yi Wang will begin her new post with the UW-Madison and UWEX mid-June 2017. She will focus her program on water issues associated with sustainable potato and vegetable production in Wisconsin. Contact information will be forthcoming.

The 2017 A3422 Commercial Vegetable Production in Wisconsin Guide is now available for 2017. As in past years, the guide can be downloaded for free (link below) or a hard copy can be purchased from UWEX Learning Store for \$10.

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