



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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 Spotted Wing Drosophila updates in fruit crops
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Calendar of Events

July 15 – UW-Hancock ARS Field Day, 1:00PM, Hancock, WI
July 17 – Rhinelander State Farm Field Day, Lelah Starks Elite Found. Seed Farm, Rhinelander, WI
August 20 – UWEX Langlade County Airport Field Day, Antigo, WI
August 25-27 – Wisconsin Farm Technology Days, Statz Bros., Inc. Farm, Sun Prairie, WI

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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.** NA indicates that information is not available. Blitecast and P-Day values for actual potato field weather from Grand Marsh, Hancock, Plover, and Antigo are now 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_2015.html

| Location | Planting Date | 50% Emergence | P-Day Cumulative | Disease Severity Value | Date of DSV Generation | Increase in DSV from 5/28 |
|--------------------|---------------|---------------|------------------|------------------------|------------------------|---------------------------|
| Antigo | Early 4/25 | NA | NA | NA | NA | NA |
| | Mid 5/5 | NA | NA | NA | NA | NA |
| | Late 5/15 | NA | NA | NA | NA | NA |
| Grand Marsh | Early 4/5 | 5/10 | 120 | 19 | 6/1 | 3 |
| | Mid 4/15 | 5/15 | 110 | 18 | 6/1 | 3 |
| | Late 5/1 | NA | 76 | 16 | 6/1 | 1 st calc |
| Hancock | Early 4/10 | 5/15 | 110 | 18 | 6/1 | 7 |
| | Mid 4/20 | 5/18 | 85 | 15 | 6/1 | 4 |
| | Late 5/5 | NA | 52 | 10 | 6/1 | 1 st calc |
| Plover | Early 4/15 | 5/15 | 111 | 20 | 6/1 | 6 |
| | Mid 4/25 | 5/22 | 72 | 17 | 6/1 | 6 |
| | Late 5/10 | NA | 9 | 1 | 6/1 | 1 st calc |

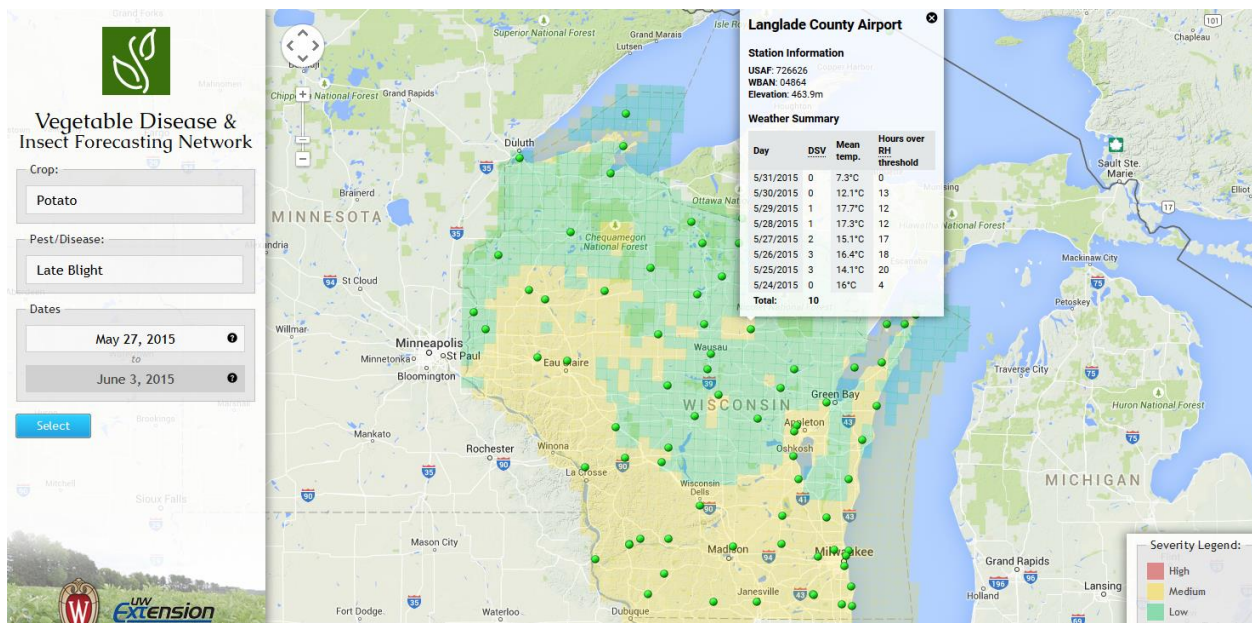
Further details on registered fungicides for WI vegetables can be found in the Univ. of WI Commercial Vegetable Production in WI Guide A3422,

<http://learningstore.uwex.edu/assets/pdfs/A3422.PDF>. Disease indicator/forecast tools provide information based on pathogen ecology to help make management decisions. No tool replaces field scouting and disease observations.

Potato Early Blight Preventive Management: P-Days have not yet reached threshold of 300 in any locations of Wisconsin.

Late Blight Preventive Management: The DSV 18 threshold has been met/surpassed for early planted/emerged potatoes in the Grand Marsh, Hancock, and Plover potato production areas. The threshold has also been met for mid-planted/emerged potatoes in Grand Marsh. This threshold indicates that environmental conditions have been met to promote late blight disease activity. At 18 DSVs, preventive applications of effective late blight fungicides is recommended. No late blight detections have been made in Wisconsin at this time on tomato or potato. This does seem early for preventive fungicide applications, but weather has been favorable and if the pathogen is in the growing environment, disease can onset.

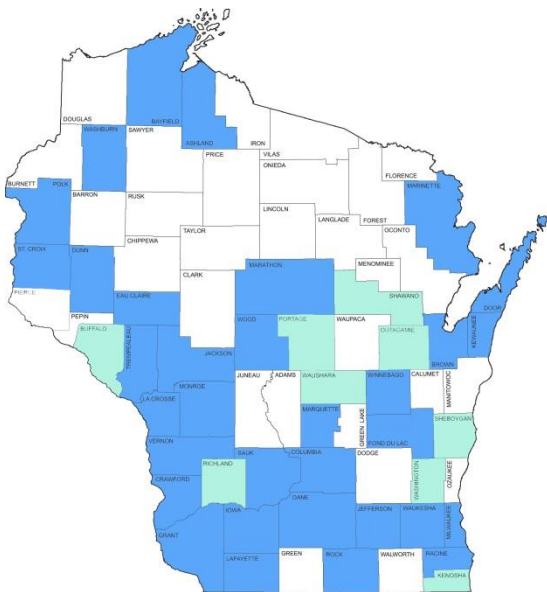
We don't yet have the in-potato-field Blitecast values calculated for the UWEX Langlade County Airport. However, based on the airport weather station and NOAA weather data (forecasted), there was accumulation of 10 DSVs during May 24-May 31 (box inset on map below). The forecasted weather (72 hours ahead) indicates low to medium risk for the Antigo area (green and yellow colorized zones on map below). May 25 was the date on which approximately 50% of the early planted potato crop in the Antigo area would have emerged.



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Spotted Wing Drosophila: what we learned in 2014 and outlook into the 2015 field season

The now infamous Spotted Wing Drosophila (SWD), *Drosophila suzukii*, is an invasive vinegar fly from Eastern Asia that can cause significant damage to soft-fleshed fruit. We are slowly learning to live with it in Wisconsin since its first detection in 2010. It has now been detected in 33 counties (blue counties on map below) and suspected in 9 others (green counties on map).



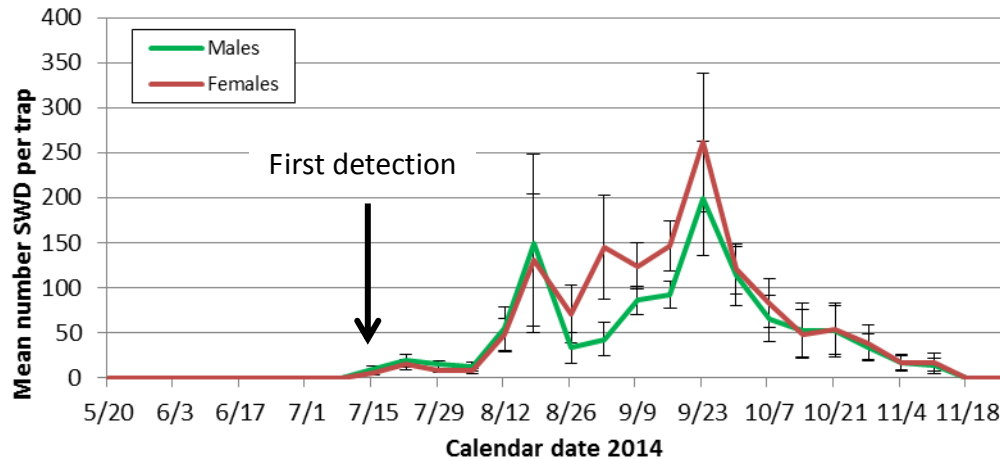
Since 2013, the Fruit Crop Entomology lab has been tracking yearly for first appearance of SWD to inform growers on when to begin trapping and to initiate their crop protection strategies. To achieve this, we have been coordinating a statewide monitoring project that has been generously funded by UW-Extension and the WBGGA. As of May 29th 2015, no SWD have been detected in our traps.

As part of our research efforts on SWD, we also monitor populations throughout the season to obtain a better understanding of the fly's seasonal phenology.

What we found in 2014

- SWD was first detected on June 30th in Vernon County, one week later than in 2013.
- In Dane County, flies first appeared on July 15th, using the same yeast and sugar bait than Vernon County (see graph below for Dane County)
- Flight peaked in the 3rd week of September
- Last trap catch was on November 11th, well after the first frost!





- We identified two seasonal morphs of SWD in Wisconsin, the well-known summer morph (see picture above) and a winter morph that was first detected in September and continued to increase to nearly 100% of flies caught by the end of October. The presence of a winter morph in Wisconsin suggests that SWD can overwinter here as the winter morph has been shown to withstand colder temperature much longer than the summer morph.

What is happening in 2015?

The monitoring project for first occurrence is currently underway. We have 16 collaborators participating and Kathryn LeClaire, a UW-Madison undergraduate who has worked with us since last fall on SWD, is now working as a UW-Extension summer intern. Kathryn is the coordinator for the SWD Monitoring Project. She will also conduct seminars with the Master Gardener Program, provide short informative films on SWD, and participate in fruit field days during the summer.

This summer we are conducting a DATCP-funded research project to determine the seasonal phenology of the SWD seasonal morphs and determine their reproductive maturity throughout the season. This study should give us a better understanding of SWD ability to overwinter in Wisconsin.

Commercial synthetic lures by Trécé Inc. and now by Scentry for monitoring SWD are available from Great Lakes IPM (<http://www.greatlakesipm.com/>). The lures are good for 4-6 weeks.

For more information and updates, check the SWD website at <http://labs.russell.wisc.edu/swd/>.

For any question, contact Christelle Guédot at guedot@wisc.edu or at (608) 262-0899 or Kathryn LeClaire at kleclaire@wisc.edu

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Results and Highlights of the Benchmark Assessment of Irrigation and Conservation

Practices in Wisconsin: Irrigated vegetable production in Wisconsin is an important component of the agricultural economy. Growers in Wisconsin are working to maintain water availability, and need to ensure efforts are used among the industry to manage their water and conservation efforts. Since little had been done to determine on-farm practices for irrigation and conservation efficiencies, a baseline, online assessment was conducted in the fall of 2014 to determine baseline irrigation and conservation practices used by WI growers. Data was collected by 90% of irrigated vegetable growers representing 185,375 acres.

Results showed that growers are already using many practices to conserve water and increase water use efficiencies. For example, 96% of the industry monitors equipment while in operation, and 83% irrigate at off-peak hour to avoid evapotranspiration water losses. Detailed water use application data records are kept for each field by 82% of the industry, and over 62% of the industry maintains these for more than 3 years.

Growers are utilizing many factors to determine when to irrigate, such as 73% using predicted or estimated evapotranspiration (ET), in addition to considerations of other entries to determine water use needs including monitoring growth stage (96%); considering varietal need (84%); managing canopy closure (75%); and considerations of rooting depth (67%). Almost all (97%) of the industry monitors in-field rainfall while 89% use short-range forecasts and 41% regularly monitor long range weather patterns. In regards to soil moisture monitoring, 89% of growers monitor individual fields, 77% monitor daily and of those, over 40% use intensive soil probes monitors and data.

Many in-field and whole farm conservation practices are used by innovative growers including 60% who are adding organic matter to their fields which increases water holding capacity, 82% limit compaction to encourage deeper rooting and more efficient water use, 70% plant cover crops to hold water for recharge and 61% use conservation tillage to increase organic matter.

New strategies are being implemented, such as research-based approaches of deficit irrigation (24%) used to promote deeper rooting and the use of in-row surfactants (22%). Finally, knowing that knowledge and updates on new research is essential, 70% have attended educational meetings that included water issues, 21% worked on resource issues within their own community and over 19% conducted on-farm research. Growers know conservation and efficient water use is necessary, and they will continue to strive to advance these technologies.