



Vegetable Crop Update

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

No. 22 – August 5, 2016

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Calendar of Events

September 11, 2016 – UW-West Madison ARS Organic Vegetable Field Day
January 22-24, 2017 – WI Fresh Fruit & Vegetable Growers Conf. WI Dells
February 7-9, 2017 – UWEX/WPVGA Grower Ed. Conf., Stevens Point, WI
March 1, 2017 – UWEX Processing Vegetable Crops Meeting, Hancock, 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.** “-“ 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_2016.html

Location	Planting Date	50% Emergence	P-Day Cumulative	Disease Severity Value	Date of DSV Generation	Increase in DSV from 7/29
<i>Antigo</i>	Early 5/1	6/2	505	82	8/5	8
	Mid 5/18	6/7	471	72	8/5	8
	Late 6/3	6/21	368	57	8/5	8
<i>Grand Marsh</i>	Early 4/15	5/22	585	119	8/5	25
	Mid 5/1	5/27	548	113	8/5	25
	Late 5/15	6/3	489	102	8/5	25
<i>Hancock</i>	Early 4/18	5/24	550	101	8/5	12
	Mid 5/3	5/29	510	88	8/5	12
	Late 5/20	6/5	453	79	8/5	12
<i>Plover</i>	Early 4/20	5/25	531	114	8/5	14
	Mid 5/5	5/30	488	99	8/5	14
	Late 5/20	6/6	432	90	8/5	14

Summary: Disease Severity Values (DSVs) and Late Blight Blitecast: We now have all potatoes in WI at 50% emergence or greater and are generating forecast values for all potatoes. All growing areas have reached threshold for late blight management. Generally, conditions

were low to favorable for late blight in this past week with 7 day accumulations of 8-25 Disease Severity Values, depending upon the location. Recall the maximum number of DSVs that one day can accumulate is 4. Where thresholds of 18 DSVs have been met, routine, protection of susceptible tomato and potato crops is recommended. Wisconsin commercial conventional fungicides for potato late blight control can be found at:

<http://www.plantpath.wisc.edu/wivegdis/pdf/2016/updated%20Potato%20Late%20Blight%20Fungicides%202016%20MOA.pdf>

P-Days indicating early blight risk are now at or above threshold for all potatoes in Wisconsin. Lesions are being observed in the middle canopies of potato crops in central and southern WI. We have not noted much brown spot in potatoes, so far, this year. Based on my early blight observations from our trials at the UW Hancock Ag Research Station, early blight is now at roughly 40% severity on 'Russet Burbank' planted during the first week of May 2016 with no early-blight-specific fungicides.

Late Blight Diagnostic Updates. The questionable "late blight" that was reported last week is NOT late blight caused by *Phytophthora infestans*. No late blight has been detected in WI as of 8/5/16, as far as I am aware. The pathogen that caused symptoms similar to late blight was confirmed as *Phytophthora nicotianae*.

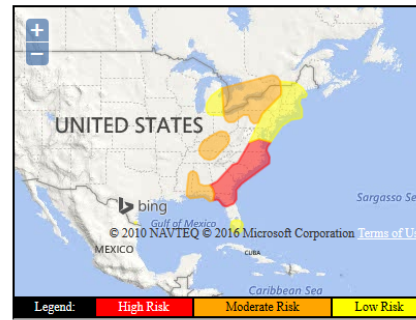
No new reports of late blight were made through the national research and extension website in this past week (www.usablight.org). Earlier season's reports have come from AR, MD, CA, FL, MI, SC, VA, and WA. However, Western Manitoba, Canada (north of North Dakota) confirmed late blight in their potato production region ~2 weeks ago. The closest detection to WI so far has been in south central MI (US-23) on potato. US-23 has predominated cases of this disease in the US so far this year. West coast has had US-8 and US-11 as well. Disease has been confirmed on both potato and tomato. Careful monitoring for and management of volunteers and solanaceous weeds is critical – along with preventive management of the main potato crop with use of effective fungicides.

If you are suspect late blight, please submit for free diagnostic testing through the UWEX Plant Disease Diagnostic Clinic or through my laboratory directly. Dr. Brian Hudelson in the clinic offers rather quick late blight confirmations. My program can do this, similarly, for commercial producers. Further my lab will genotype the pathogen in order to better prescribe best management strategies.

Cucurbit Downy Mildew Updates (<http://cdm.ipmpipe.org/>). In the past week there were 8 states reporting new confirmations of cucurbit downy mildew: AL, KY, MD, MI, NC, NY, PA, and SC (counties colored red in map below from 8/5/16). Previous confirmations were made in AL, DE, FL, GA, KY, MD, MI, NC, NJ, NY, OH, PA, SC, TX, VA, and Ontario, Canada (counties colored green in map below from 8/15/16). The closest finds to WI at this time are in south central MI. There is no risk of movement of the pathogen to Wisconsin production regions in the upcoming forecast for cucurbit downy mildew movement over the next several days (see below from <http://cdm.ipmpipe.org/current-forecast>). Growers should be on watch for earliest symptoms of downy mildew for rapid response with effective fungicides (link below to treatment information). <http://www.plantpath.wisc.edu/wivegdis/pdf/2016/July%2013,%202016.pdf>



Risk prediction map for Day 1: Friday, August 5



HIGH Risk for cucurbits in northern FL, east-central and southern GA, central and eastern NC, east-central and eastern VA. Moderate Risk in the FL panhandle, southern and western AL, eastern MS, north-central TN, central and eastern KY, northeast OH, far eastern MI, southern ON, southern Quebec, central and northwest PA, and all but southeast NY. Low Risk for cucurbits in central and southern MI, northeast VA, MD, DE, eastern PA, NJ, southeast NY, Long Island, southern New England, VT, NH, and southwest ME. Minimal Risk to cucurbits otherwise.

Forecaster: TK at NCSU for the Cucurbit ipmPIPE - 2016

Various fungal diseases were identified on cucurbits over the past week or two around Wisconsin. While none of these diseases are rare finds in temperate growing regions, it is not typical that we see the severity of infection from these particular diseases in particular fields. These diseases can show up in varying levels of severity depending upon the varietal susceptibility, environmental condition, and intensity of cucurbits in your production region (both within a year and over time, as these pathogens are residue-borne).



Left (top): Anthracnose on cucumber (caused by *Colletotrichum lagenarium*): Photo courtesy of Jenna Lind, Organic Valley.
<http://learningstore.uwex.edu/assets/pdfs/A3279.pdf>



Left (bottom): Alternaria leaf spot on melon (caused by *Alternaria m cucumerina*): Photo courtesy of Nav Ghimire, UWEX Green Lake County.
<http://learningstore.uwex.edu/Assets/pdfs/A3688.pdf> (page 15)



Left (top & bottom):
 Plectosporium blight on zucchini
 fruit and foliage (caused by
Plectosporium tabacinum):
 Photo courtesy of Amanda
 Gevens, UW-Madison Plant
 Pathology.
http://vegetablemndonline.ppath.cornell.edu/NewsArticles/Cuc_Plecto2.htm

Further details on registered
 fungicides for cucurbit
 disease management or other
 vegetable management can be
 found in the 2016
 Commercial Vegetable
 Production in Wisconsin
 UWEX guide A3422 at:
<http://learningstore.uwex.edu/Assets/pdfs/A3422.pdf>

Management of these diseases can be achieved through selection of resistant or tolerant cucurbit varieties, and cultural means including crop rotation, increased airflow in the crop (achieved through increased plant and row spacing or planting with rows in line with prevailing wind), and encouraging breakdown of crop debris late season. Several fungicides are registered for management of these diseases – lists are provided below but are not comprehensive.

Fungicides registered for Alternaria leaf blight (and Anthracnose denoted with an asterisk*) include: Conventional selections: chlorothalonil* (ie: Bravo, Echo), mancozeb* (ie: Penncozeb, Dithane), azoxystrobin* (ie: Quadris, Aframe, Equation), azoxystrobin+chlorothalonil* (Quadris Opti), azoxystrobin+difenoconazole* (Quadris Top), famoxadone+cymoxanil* (Tanos), fenamidone (Reason 500SC), pyraclostrobin* (Cabrio EG), boscalid (Endura), boscalid+pyraclostrobin* (Pristine WDG), cyprodinil+difenoconazole* (Inspire Super), cyprodinil+fludioxonil (Switch), penthiopyrad (Fontelis), fluxapyroxad+pyraclostrobin* (Merivon), fluoxastrobin* (Aftershock, Evito 480SC). Thiophanate methyl (ie: Topsin 4.5FL, Thiophanate methyl 85WDG) is registered for Anthracnose.

Fungicides registered for Plectosporium blight include: Conventional selections: azoxystrobin (ie: Quadris, Aframe, Equation), azoxystrobin+difenoconazole (Quadris Top), cyprodinil+difenoconazole (Inspire Super), fluoxastrobin (Aftershock, Evito 480SC), and trifloxystrobin (Flint).

Organic selections: hydrogen dioxide (OxiDate), fixed coppers (ie: Champ Formula 2, Champion 77WP).