Vegetable Crop Update

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

No. 15 – July 3, 2012

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Calendar of Events

July 13 – UW-Rhinelander Ag Research Station, Potato Tour, 10AM-2PM
July 24 – UW-Hancock Ag Research Station, Field Day, 12:30-4:00PM
August 2 – UW-Langlade County Ag Res Station Field Day Antigo, 1:00PM

News Items (contributed by Amanda Gevens):

Dr. Damon Smith will join the Department of Plant Pathology at UW-Madison as the new field crops extension pathologist on September 1, 2012. Damon comes to Wisconsin from Oklahoma State University where he has served as an extension pathologist of turf and horticultural crops for the past 5 years. Prior to his post in Oklahoma, Damon conducted his graduate work at North Carolina State University and is a native of New York State. With interests in integrated disease management and epidemiology, Damon will be a welcome addition to the academic department and to the agricultural community in the state of Wisconsin. Damon's position will address disease concerns of field corn, soybeans, wheat, and other agronomic crops.

"Carrie [Damon's wife] and I are extremely impressed with the hospitality that UW has given us during the hiring and relocation process. I am also very impressed by the grains extension and research team and am looking forward to interacting with the great growers in the State of Wisconsin."
-Damon Smith

Sadly, a UWEX collaborator and friend to Wisconsin agriculture, **Mr. Brian Cedric Nelson** of Westby, died Wednesday, June 27, 2012, as a result of a farm accident. Brian was very active in managing the Grower's Produce Auction in Cashton with his wife, Vernel Vesbach, for the past 8 years. Several of the UW vegetable specialists called upon Brian often as he was innovative in his greenhouse tomato operation and made critical observations which enhanced the management of not only his own crop, but that of others in the region. Brian and his wife were entrepreneurs and had several joint businesses. He jointly ran the greenhouse business (Ski Hill Greenhouses) with his nephew, Scott Allen Davis. He was father to three children, two daughters and one son. Brian was 57. Our condolences go out to Brian's family. He will be greatly missed.

Vegetable Disease Update – Amanda J. Gevens, Vegetable Plant Pathologist, UW-Madison, Dept. of Plant Pathology, 608-890-3072 (office), Email: gevens@wisc.edu.

Vegetable Pathology Webpage: http://www.plantpath.wisc.edu/wivegdis/

Given the hot, dry conditions throughout most of the state, there has been little foliar disease activity in potato and vegetable crops. This is good news for growers typically battling multiple foliar blights and spots at this time of the year. It is critical, however, to pay close attention to your crops' irrigation needs. Wilted plants indicate drought stress that can result in damaged root tissue and subsequent invasion by various soilborne pathogens. Even diseases that you may tend to associate with dry weather, such as powdery mildew, have a requirement for moisture in order to infect. As such, we have not seen the progress of this disease in vegetable crops, to date.

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

Location	Planted	50% Emergence	P-Day Cumulative	DSV Cumulative	Calculation Date
Antigo Area	Early 5/1	5/30	230	10	7/2
	Mid 5/10	6/6	192	10	7/2
	Late 6/1	6/16	125	10	7/2
Grand Marsh Area	Early 4/3	5/8	382	11	7/2
	Mid 4/15	5/16	335	11	7/2
	Late 4/30	NA	280	10	7/2
Hancock Area	Early 4/1	5/1	438	14	7/2
	Mid 4/15	5/10	381	8	7/2
	Late 5/1	5/17	337	8	7/2
Plover Area	Early 4/3	5/17	395	14	7/2
	Mid 4/19	5/18	330	14	7/2
	Late 5/1	5/27	267	10	7/2

P-Days and Early Blight: Earliest planted potato fields have P-Days of 382 in Grand Marsh (7/2), 438 in Hancock (7/2), 395 in Plover (7/2), and 230 in Antigo (7/2). Mid-planted fields are 335, 381, 330, and 192, consecutively on 7/2. Preventative fungicides for early blight control should be applied in Southern and Central Wisconsin on all early and mid- planted potato fields. We are also approaching an accumulated P-Day value of 300 in late planted Central Wisconsin potatoes. An accumulation of 300 P-Day values indicates a time at which early blight is favored and first infection may occur.

In my field scouting in the Hancock area yesterday, I saw very few early blight lesions in lower canopies. Lesions are still very small, now about the diameter of a pencil eraser. My lab is collecting early season early blight from Grand Marsh, Hancock, Plover, and Antigo. We will make collections again in about one month, and conclude with a final collection just prior to vine kill. This survey effort will help us identify the Alternaria species involved in the early blight complex in Wisconsin. We suspect that most of the disease is caused by *Alternaria solani*, but there is evidence that *Alternaria alternata* may also play a role and may impact management. We will also be screening isolates for fungicide resistance. If you note an early blight concern or poor control, please contact me and we can process a sample to help determine causal agent and potential resistance.

DSVs and Late Blight: From emergence to July 2, we have had slow and steady accumulation of DSVs at all sites. The largest increases in DSV accumulation this past week occurred in the Plover area with an accumulation of 4 DSVs. All other sites added just 1 or 2 DSVs. While the dry weather has made for more work for those managing irrigation to make a crop this summer, so far, it has been helpful in limiting periods of leaf wetness which are necessary in promoting the development of the late blight pathogen, *Phytophthora infestans*, and many other foliar fungal and bacterial diseases. An accumulated DSV of 18 indicates time to initiate fungicide applications for late blight control.

There are no reports of late blight in Wisconsin at this time. This past week there were several new late blight reports from MA (tomato, first report for state), NC (tomato), NY (potato), PA (tomato), and VA (tomato). To date this production year, late blight has been reported in CA, CT, FL, MA, NC, NJ, NY, PA, and VA. 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.

Cucurbit Downy Mildew: has not been identified in Wisconsin at this time in commercial fields, home gardens, or our sentinel monitoring plots. Currently, several states have reported cucurbit downy mildew across a wide range of cucurbit hosts in FL, GA, SC, NC, MD, NJ, DE, AL, OH, and PA. The newest reports within the past 7 days have been on cucumber in AL, NC, PA, and SC. Both Carolinas are reporting downy mildew on giant pumpkin; SC also reports the diseases on watermelon, cucumber, cantaloupe, acorn squash, and yellow summer squash. No forecasted risk of movement of spores from southern and eastern states to Wisconsin at this time. Disease forecaster, Tom Keever of North Carolina State University reports, "there is moderate risk for cucurbits in the southeast, northeasterward into southern and eastern NC. Low risk from northern NC through the DelMarVa peninsula, plus southern FL and northeast OH. Minimal risk to cucurbits otherwise." The website: http://cdm.ipmpipe.org/ offers up to date reports of cucurbit downy mildew and disease forecasting information.

Cucurbit Bacterial Wilt symptoms can be seen in some cucumber fields throughout Wisconsin. This bacterial disease is vectored by the striped and spotted cucumber beetles. We most commonly see the striped beetles here in Wisconsin. The most effective control against this wilt-causing pathogen is control of the beetle. Once plants become symptomatic, they should be removed from the field as they provide a ready source for bacterial inoculum and attract beetles back to feed and gather bacteria for further spread.

(reprinted from Russ Groves Newsletter article June 19, 2012)- **Striped cucumber beetles** are now becoming a serious pest of cucurbits in many areas of the state. Adult beetles over winter in protected areas under dense grass, near buildings, in fence rows, and in woodlots. They become active early in the spring and then feed on the blossoms of several alternate host species, including wild cucumber, hawthorns and dandelions, until cucumber, squash, or melon seedlings emerge or transplants are set out in fields. Cucumber beetles then migrate to the cucurbits and feed on the young seedlings. In addition to direct damage on plants, cucumber beetles are vectors of bacterial wilt (caused by the bacterium *Erwinia tracheiphila*). While foliage-feeding adult cucumber beetles can injure the crop, especially seedlings, the transmission of bacterial wilt disease is even more serious because bacterial wilt will kill the plant. IPM practices crucial for successfully managing beetles and bacterial wilt of cucurbits include 1) the exclusion of early-season beetles with row covers, 2) elimination of sources of bacterial wilt inoculum via clean culture and sanitation, 3) planting tolerant or resistant varieties, and 4) optimal application timing of reduced-risk insecticides (e.g. at-plant, systemic neonicotinoids) to repel and kill colonizing beetles. Proper selection of insecticides with appropriate application timings and methods can minimize damage to pollinators and optimize fruit set. Direct control of the insect vector (carrier) is the most effective form of disease control. Insect control should include practices that are not directly harmful to domestic or wild pollinator species of bees. Pest control products that contain the active ingredient carbaryl should be avoided when attempting to control cucumber beetles while conserving pollinators.

On left: Symptom of bacterial wilt of cucumber. Old feeding wounds are often seen on wilted leaves and stems, implicating the vector. On right: striped cucumber beetle.

For further information on any fungicides that may be mentioned in this newsletter, please see the 2012 Commercial Vegetable Production in Wisconsin Guide A3422. An online pdf can be found at the link below or a hard copy can be ordered through the UWEX Learning Store.
http://learningstore.uwex.edu/assets/pdfs/A3422.PDF