Vegetable Crop Update

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

Division of Extension
University of Wisconsin-Madison

No. 7 – May 22, 2021

In This Issue

Calendar of Events

July 21, 2021 – UW-Hancock Ag Research Station Field Day (1-4:30PM)
July 22, 2021 – UW-Extension Langlade Co. Airport Ag Research Station Field Day
November 30-December 2, 2021 – Midwest Food Producers Assoc. Processing Crops Conference, Kalahari Convention Center
February 8-10, 2022 – UW-Madison Div. of Extension & WPVGA Grower Education Conference, Holiday Inn, Stevens Point, WI

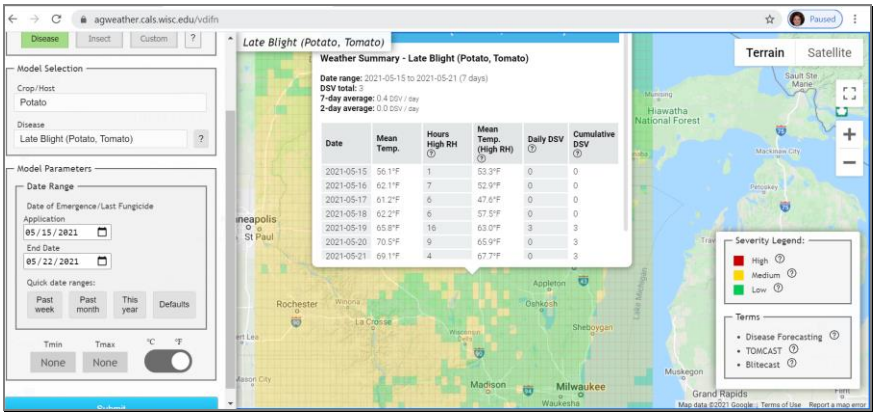
Amanda Gevens, Chair, Professor & Extension Vegetable Pathologist, UW-Madison, Dept. of Plant Pathology, 608-575-3029, Email: gevens@wisc.edu.

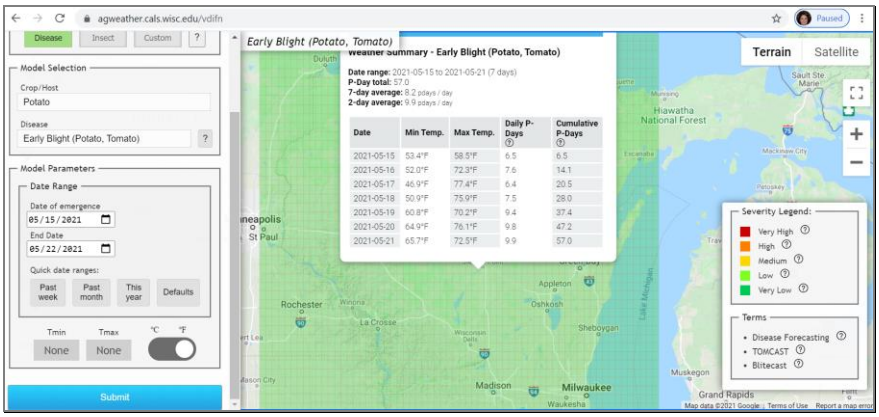
Current P-Day (Early Blight) and Disease Severity Value (Late Blight) Accumulations. Many thanks to Ben Bradford, UW-Madison Entomology; Stephen Jordan, UW-Madison Plant Pathology; and our grower collaborator weather station hosts for supporting this disease management effort. A Potato Physiological Day or P-Day value of ≥300 indicates the threshold for early blight risk and triggers preventative fungicide application. A Disease Severity Value or DSV of ≥18 indicates the threshold for late blight risk and triggers preventative fungicide application. Red text in table indicates threshold has been met or surpassed. TBD indicates that data are To Be Determined as time progresses. Weather data used in these calculations comes from weather stations that are placed in potato fields in each of the four locations. Data are available in graphical and raw formats for each weather station at: https://vegpath.plantpath.wisc.edu/dsv/

Location	Planting Date		50% Emergence Date	Disease Severity Values (DSVs)	Potato Physiological Days (P-Days)
Grand Marsh	**Early**	April 2	May 10	4	74
	Mid	April 10	May 15	4	64
	Late	May 1	May 23	1	10
Hancock	**Early**	April 5	May 12	4	73
	Mid	April 15	May 15	4	64
	Late	May 5	May 23	TBD	TBD
Plover	**Early**	April 7	May 12	3	73
	Mid	April 20	May 20	0	29
	Late	May 7	TBD	TBD	TBD
Antigo	**Early**	April 26	TBD	TBD	TBD
	Mid	May 10	TBD	TBD	TBD
	Late	May 20	TBD	TBD	TBD

Our in-field weather stations were set up last week (May 19) in grower cooperator fields and in our research field at the Hancock Agricultural Research Station. I utilized our UW Vegetable Disease and Insect Forecasting Network tool to generate risk values based on emergence dates which preceded the May 19 station establishment date. From May 19 forward, all data will come from the in-field stations unless otherwise noted.

In addition to the potato field weather stations, we have the UW Vegetable Disease and Insect Forecasting Network tool to explore P-Days and DSVs across the state. This tool utilizes NOAA weather data (stations are not situated within potato fields). In the examples, below, I have used a potato emergence date of May 15 and selected Nekoosa as a central location. On May 19, 3 DSVs were generated, with a total accumulation from May 15 to today at just 3 DSVs. With the same date and location parameters, 57 P-Days have accumulated with an average of between 6 and 9 P-days accumulating on a individual day. In using this tool, be sure to enter your model selections and parameters, then hit the blue submit button at the bottom of the parameter boxes.



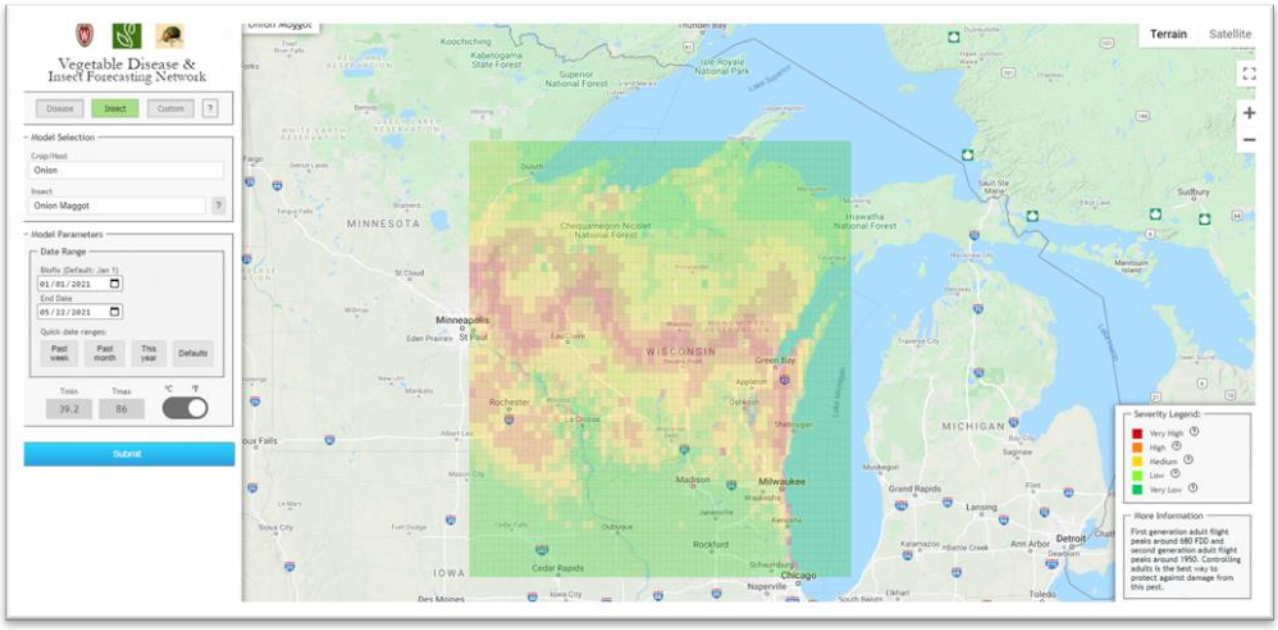


Once thresholds are met for risk of early blight and/or late blight, fungicides are recommended for optimum disease control. Fungicide details can be found in the 2021 Commercial Vegetable Production in Wisconsin Guide, Extension Document A3422: https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422-2021.pdf

Vegetable Insect Update – Russell L. Groves, Professor and Department Chair, UW-Madison, Department of Entomology, 608-262-3229 (office), (608) 698-2434 (cell), e-mail: rgroves@wisc.edu

Vegetable Entomology Webpage: https://vegento.russell.wisc.edu/

Onion maggot 'peak' moving into central Wisconsin – (https://agweather.cals.wisc.edu/vdifn)



Using a base temperature of 39.2° F, peak flight for the first of three generations of onion maggot is now moving northward and occurs when 680FDD have been reached/surpassed. Adult peaks are now subsiding in southern Wisconsin and planting of susceptible crops could resume in areas where 'low risk' is delimited. Remember to avoid the incorporation of green manures at the times of the peak to lessen the infestation pressure. Consider covering recently seeded or transplanted crops with floating row covers as a barrier against onion maggot flies if you have recently planted in these high risk areas and remember to place the cover as soon as the transplants are set. Careful not to cover where brassicas were grown last year, as pupae left in the soil could emerge under the cover and immediately infest the new planting. Use production methods (raised beds, black plastic) that favor vigorous growth so that plants can compensate and outgrow moderate amounts of root injury.

Seedcorn maggot– (https://vegento.russell.wisc.edu/pests/seedcorn-maggot/).

We are currently between the 1st and 2nd generations of seedcorn maggot over the entirety of the state. In Wisconsin, the initial peak flight of SCM occurred at 360 FDD (Fahrenheit degree days) and will again 1080 cumulative FDD. The initial adult peak has now moved out of northern Wisconsin, but we are reminded that the second generation peak will encroach into SW portions of the state likely by the end of next week. Our goal with VDIFN is to document peak flights with the idea of forecasting subsequent generations of SCM in order for producers to i)

avoid the risk interval, or ii) take adequate measures to control the pest knowing that the risk will be increasing in the coming week to 10 days of southern portions of the state.

Flea beetles. – (https://vegento.russell.wisc.edu/pests/flea-beetles/). Flea beetles are now appearing as early-season pests, and these are commonly found on all members of the cole crop group, as well as spinach, beets, potatoes, and eggplant. There are several different species of flea beetles that pose problems early in the season when they are considered occasional pests. Host plants of many of the flea beetles are easily identified by their common names. For example, the crucifer flea beetle attacks cole crops and mustards while the eggplant flea beetle is commonly associated with eggplant. Similarly, the potato flea beetle most often attacks potato, but canbe found at low levels on other nightshade plants (pepper, tomato, solanaceous weeds). The common Wisconsin flea beetles include the cruicfer, eggplant, horseradish, pale-striped, potato, spinach, and striped varieties (Table 1). All have characteristically large hind legs that give adults the ability to jump.

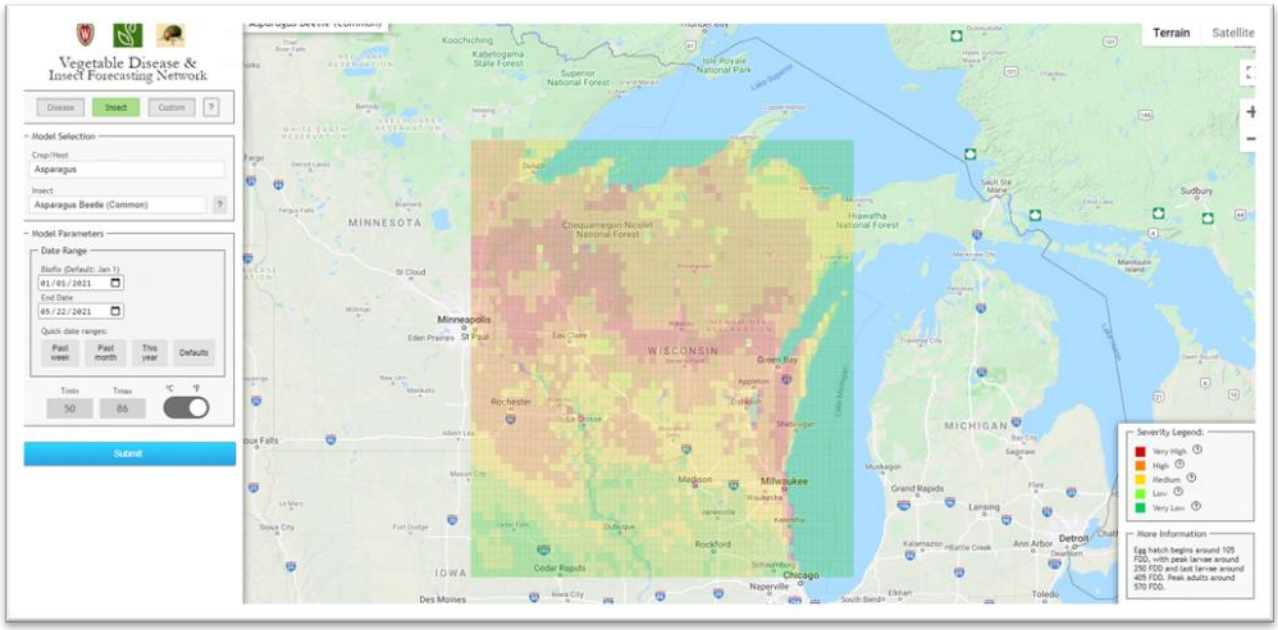
Table 1. Common Wisconsin flea beatles

Common name	Scientific name	Description	Host plants
Crucifer flea beetle	*Phyllotreta cruciferae*	greenish or bluish-black; 1/16" to 1/8"	cabbage and other crucifers including horseradish
Eggplant flea beetle	*Epitrix fuscula*	black; 1/16"	eggplant
Horseradish flea beetle	*Phyllotreta armoraciae*	black with yellow stripes; 1/8"	horseradish and other mustards
Pale-striped flea beetle	*Systena blanda*	dark brown with 2 broad white stripes down its back; 1/6"	potatoes, tomato, eggplant, pepper
Potato flea beetle	*Epitrix cucumeris*	dull black; 1/16"	potatoes, tomato, eggplant, pepper
Spinach flea beetle	*Disonycha xanthomeles*	greenish-black with a yellow thorax; 1/5"	spinach and beets
Striped flea beetle	*Phyllotreta striolata*	black with 2 crooked yellow strips running down its back; 1/12"	cabbage

Chemical control options are recommended when flea beetle populations exceed established threshold levels, particularly early in the season (Table 2). Many of our systemic seed and soil-applied insecticides can provide season long control, but the foliar insecticides can provide quick control if an at-plant option was not used. Care should be taken however, not to disrupt early populations of natural enemies that are also emerging at this time and trying to establish in the local landscape. The synthetic pyrethroids comprise the majority of options at this time, as well as pyrethrum (e.g. Pyganic, Azera, etc) for organics. Floating row covers can prevent adults from feeding on leaves and laying eggs on the crop. If used, row covers should be set up just before the crop emerges. Water deters adult flea beetles, and any watering should be done in mid-day. Since flea beetles overwinter near fields, planting after adults have emerged or rotating crops can help minimize flea beetle damage.

Asparagus beetles – (https://vegento.russell.wisc.edu/pests/asparagus-beetle/). Adults of the common asparagus beetle feed on the plant's spears and ferns. Disfigured and unmarketable spears can result when the beetles feed or lay eggs on the spears. Spotted asparagus beetle larvae feed more on the berries rather than the ferns of asparagus. Larvae secrete a black fluid onto the plants. Spring spear feeding reduces crop quality (browning, scarring, staining, and bent growth). Summer fern feeding can cause defoliation and reduces yield of subsequent years. Eggs laid on spears are unattractive to consumers, though harmless. Large populations of asparagus beetles, if left unchecked, can defoliate the plants. Check plants now for the signs of adults and early larvae and continue throughout the growing season. Spring sampling thresholds are designed to reduce spear damage while later-season thresholds are designed to reduce long-term damage caused by defoliation.

The first generation larvae should now be visible throughout much of central and southern Wisconsin (see DD map below). If> 50% of spears are now infested with larvae, it may be time to consider a treatment to limit further damage. If insecticides are needed to reduce beetle populations below threshold levels, it is not necessary to treat the entire planting. Rather, you can spot treat those areas where threshold levels have been exceeded. New plantings tolerate less injury than established plantings.



Colorado potato beetle – (https://vegento.russell.wisc.edu/pests/colorado-potato-beetle/). Continue checking for CPB adults now (in mid-May) after potato plants have emerged and during hilling operations. Emerging adults are colonizing fields now in southern and central Wisconsin this past week. You will see that the appearance of the very first egg masses is predicted for very southern Wisconsin. Regrettably, we have very few options for the control of early adults and their eggs. Most of the reduced-risk insecticides are designed to target very early larvae, and these stages will not be present for at least another 14-21 days, especially in central Wisconsin. Some of our producers in the very southern part of the state, may be thinking

about the use of the insect growth regulator, novaluron (Rimon® 0.83EC), and initiating treatment in the next 10 days. The initial application of Rimon can be successful in two ways, i) making recently laid eggs non-viable after adult females ingest the product, and ii) by limiting egg maturation and hatch if egg masses are contacted by the application (requires good coverage). Recall that perimeter applications may be the best option with the early use of Rimon.