

Hancock Agricultural Research Station Field Day, 2021

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First generation CPB foliar trial (E-20)

This experiment combines several different contracted research trials targeting first generation Colorado potato beetle control and can be seen in field E-20. Snowden B-size tubers were machine planted on April 23 on a 12 in. spacing. Plots measure 2 rows by 20 ft. long. Rows are spaced on 3 ft. centers. The field is divided into three blocks, each containing 4 replicates of 12 different treatments, totaling 36 treatments. Treatments 14 and 15 include an experimental chemical product. Treatments 22-24 and 28-34 include an experimental Bt (*Bacillus thuringiensis*) biological product. Rate 1 is the lowest. All rates are per acre. Trt 2 and 3 were initiated on June 4 targeting egg masses, all other treatments were initiated on June 11 targeting small larvae.

No.	Description
1	Untreated Block 1 (North)
2	Avaunt eVo 6.0 oz + Exponent (2 x 7 day)
3	Avaunt eVo 4.5 oz + Exponent (2 x 7 day)
4	Elevest 9.6 oz + MSO (2 x 7 day)
5	Elevest 9.6 oz + MSO (2 x 10 day)
6	Vantacor 2.5 oz + MSO (2 x 7 day)
7	Vantacor 2.5 oz + MSO (2 x 10 day)
8	Blackhawk 3.3 oz (2 x 7 day)
9	Blackhawk 2.5 oz (2 x 7 day)
10	Delegate 4 oz (2 x 7 day)
11	Delegate 3 oz (2 x 7 day)
12	Coragen 7.5 oz + MSO (2 x 7 day)
13	Untreated Block 2 (Middle)
14	Experimental rate 1 + Dyne-Amic (2 x 7 day)
15	Experimental rate 2 + Dyne-Amic (2 x 7 day)
16	Minecto Pro 10 oz + MSO (2 x 7 day)
17	Beseige 9 oz + MSO (2 x 7 day)
18	Rimon 12 oz + Dyne-Amic (2 x 7 day)
19	Bt rate 4 + Dyne-Amic (3 x 7 day)
20	Bt rate 4 + Spear 0.5 pt + Dyne-Amic (3 x 7 day)
21	Bt rate 4 + Spear 1.0 pt + Dyne-Amic (3 x 7 day)
22	Bt rate 3 + Spear 1.0 pt (3 x 7 day)
23	Bt rate 2 + Spear 1.0 pt (3 x 7 day)
24	Bt rate 1 + Spear 1.0 pt (3 x 7 day)
25	Untreated Block 3 (South)
26	Harvanta 16.4 oz (2 x 7 day)
27	Harvanta 10.9 oz (2 x 7 day)
28	Bt rate 4 (3 x 5 day)
29	Bt rate 5 (3 x 5 day)
30	Bt rate 6 (3 x 5 day)
31	Bt rate 5 (2 x 7 day)
32	Bt rate 6 (2 x 7 day)
33	Bt rate 5 (2 x 10 day)
34	Bt rate 6 (2 x 10 day)
35	Entrust 5 oz (2 x 10 day)
36	Entrust 7.5 oz (2 x 10 day)

At-plant CPB trial (E-21 east half)

None of the treatments described in the CPB foliar trial included an at-plant or seed treatment of an insecticide. Instead, this separate trial seeks to evaluate several different at-plant treatments for efficacy against first generation Colorado potato beetle in the absence of any follow-on foliar treatments. This trial can be found in the East half of field E-21, which is just East of the CPB foliar trial in E-20. Snowden B-size tubers were hand planted on April 23. Plots measure 4 rows wide by 20 ft. long. Tubers were spaced 12 in. apart. Rows were spaced on 3 ft. centers. As with the CPB foliar trial, plot markers are formatted as RTT where R is the replicate and TT is the treatment number. So plot 104 is treatment 4, rep 1.

No.	Description
1	Untreated
2	Verimark 13.5 oz/a (in-furrow appl.)
3	Verimark 0.61 oz/cwt (seed treatment)
4	Sivanto 14 oz/a (in-furrow appl.)
5	Admire Pro 8.7 oz/a (in-furrow appl.)
6	Platinum 8 oz/a (in-furrow appl.)
7	Belay 12 oz/a (in-furrow appl.)

GreenLight GS2 RNAi Demo Trial (K-1)

For the past several years GreenLight has been developing an RNA-based sprayable insecticide that is highly specific to Colorado potato beetle and has little to no non-target effects or detrimental environmental impacts. In the south half of field K-1 you can find a full-season grower demonstration trial that incorporates the GS2 product in either the first or second generation rotation for most treatment programs.

No.	Description
1	Untreated
2	GS2 16 oz Elevest 9.6 oz
3	Elevest 9.6 oz, Agri-Mek 3.5 oz GS2 16 oz
4	GS2 16 oz CX-2330 1.5 lb
5	CX-2330 1.5 lb GS2 16 oz
6	Rimon 12 oz GS2 16 oz
7	Platinum, GS2 12 oz Elevest 9.6 oz, Agri-Mek 3.5 oz
8	Platinum, GS2 16 oz Elevest 9.6 oz, Agri-Mek 3.5 oz (7-day)
9	Platinum, GS2 16 oz Elevest 9.6 oz, Agri-Mek 3.5 oz (10-day)
10	Platinum, Elevest 9.6 oz Agri-Mek 3.5 oz, GS2 16 oz (7-day)
11	Platinum, Elevest 9.6 oz Agri-Mek 3.5 oz, GS2 16 oz (10-day)
12	Platinum, Elevest 9.6 oz Agri-Mek 3.5 oz, Blackhawk 3.5 oz
13	Platinum, Elevest 9.6 oz, Agri-Mek 3.5 oz Blackhawk 3.5 oz, GS2 16 oz
14	Platinum, Elevest 9.6 oz, Agri-Mek 3.5 oz Blackhawk 3.5 oz, GS2 8 oz



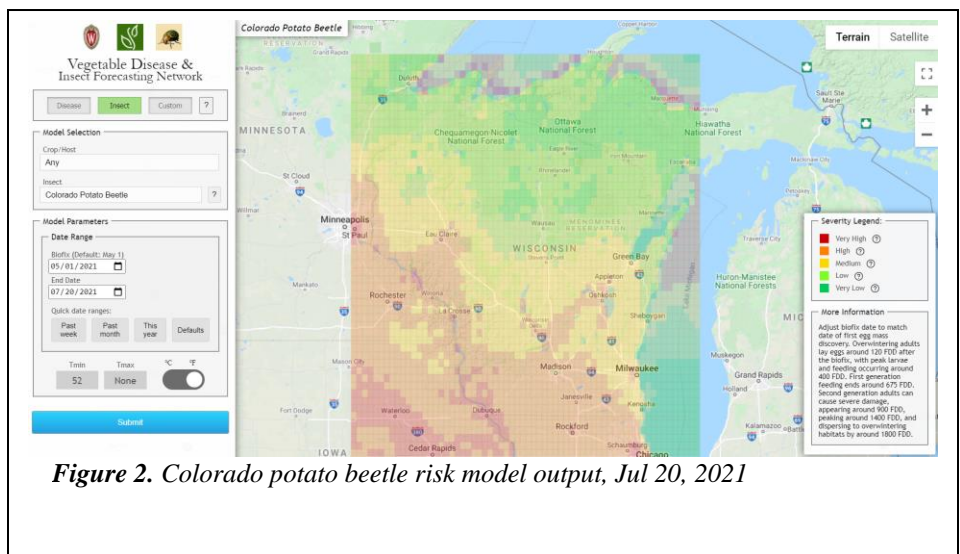
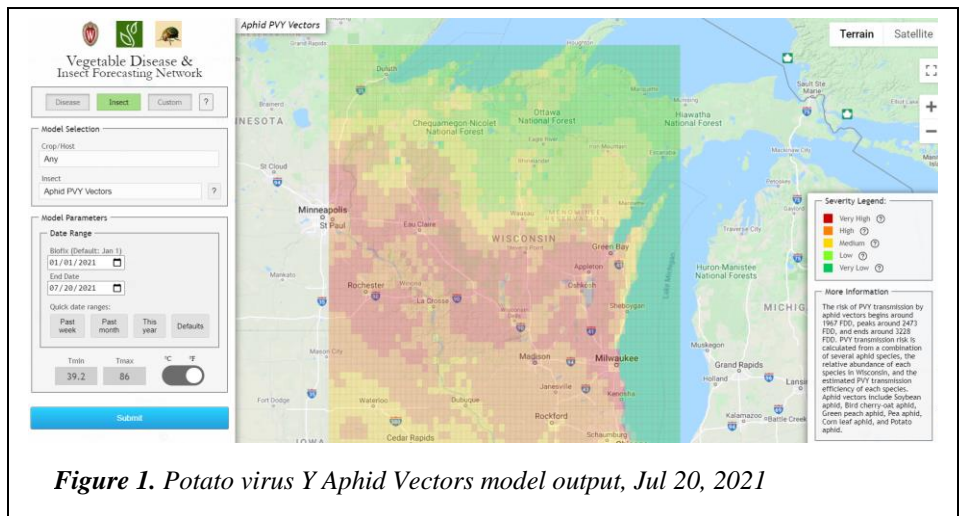
An introduction to the Wisconsin Vegetable Disease and Insect Forecasting Network (VDIFN) website agweather.cals.wisc.edu/vdifn

Over the past year we have greatly expanded the functionality of the VDIFN website. VDIFN uses daily gridded weather data which are fed into various **disease risk** and **insect developmental models** and converted into daily disease severity values (or equivalents) or degree-days. These disease severity value and degree-day accumulations are then displayed on the map as color-coded risk scores based on the estimated risk to susceptible crops. Clicking on an individual grid cell brings up the daily history of weather data and disease severity values or degree-days for that location.

When you visit VDIFN you will see the navigation and settings pane on the left, the map and pest severity display in the center, and a legend on the lower right.

You can switch between disease, insect, and custom model modes with the buttons across the top of the left panel. Pick a model using the **Model Selection** section and use the **question mark icon** to get more information on the disease or insect. After selecting a model, note that the **date range** boxes populate with defaults for each model, but can be adjusted if desired. Click on an **individual grid point** to bring up more details for that specific location, including a detailed history of weather readings and daily and cumulative disease severity value or degree-days (depending on the model selected).

Figure 1 shows an example risk map for **Potato virus Y**, several aphid vector species. This model uses an accumulation of aphid abundance and transmission efficiency to generate a risk score which is assigned to each geographic location. VDIFN currently has several other disease models available and we are planning to add more disease models soon.



VDIFN also has a number of **insect developmental models** available. These use degree-day models specific to each insect to track population progression, and we assign a colored risk score when certain damaging life stages are estimated to be present at each geographic location. In **Figure 2**, the **Colorado potato beetle** model shows an estimate of the progression of the adult emergence and crop colonization risk. For CPB, this is the most important time to manage the pest, because once adults begin to lay eggs and initiate a new generation, these populations can be very difficult to control.

Please email Ben Bradford (bbradford@wisc.edu) with any feedback or question about VDIFN.