2025 Hancock Agricultural Research Station Field Day
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University of Wisconsin–Madison
Vegetable Crop Entomology
Extension and Research

https://vegento.russell.wisc.edu

1st gen CPB foliar trial (E–20)

This experiment includes a variety of 2- and 3-application weekly foliar protocols for managing 1st generation Colorado potato beetle. Two-row plots are 20' long and separated by untreated guard rows. Replicates are separated along the length of the field by 8' tilled alleys. Snowden cut A-size tubers were machine planted on Apr 17 with a fertilizer granule mix that did not contain insecticide. Application codes in the treatment list correspond to foliar treatments applied at a 20 gal/ac spray volume. Appl. A=Jun 10 (10% egg hatch), B=Jun 17 (50% egg hatch), C=Jun 25. 'CPB' indicates total larvae + adults. Ratings from Jul 2.

Block	Trt	Product	Rate	Appl.	Jul 2 CPB	Defol
A	1	Untreated	-		168	41%
A	2	Delegate	3 oz	BC	66	3%
A	3	Delegate	4 oz	BC	28	1%
A	4	Harvanta	5.5 fl oz	BC	20	1%
A	5	Harvanta	10.9 fl oz	BC	15	0%
A	6	Torac Exponent	14 fl oz 8 fl oz	BC BC	17	0%
A	7	Torac Exponent	21 fl oz 8 fl oz	BC BC	15	0%
A	8	Elevest	5.6 fl oz	BC	86	1%
A	9	Elevest	9.6 fl oz	BC	12	1%
A	10	Vantacor	1.25 fl oz	BC	45	1%
A	11	Vantacor	2.5 fl oz	BC	11	1%
A	12	Agri-Mek	1.75 fl oz	BC	69	3%
A	13	Agri-Mek	3.5 fl oz	BC	31	1%
B	14	Untreated	-		152	45%
B	21	Falcondor Falcondor	8 fl oz 4 fl oz	B C	59	1%
B	22	Falcondor	6 fl oz	BC	45	1%
B	23	Falcondor	4 fl oz	ABC	65	3%
B	24	Falcondor	3 fl oz	ABC	54	1%
B	25	Exirel MSO	7 fl oz 0.25 %	BC BC	11	0%
B	26	Exirel MSO	13.5 fl oz 0.25 %	BC BC	7	1%
C	27	Untreated	-		151	47%
C	35	Coragen	7.5 fl oz	BC	30	1%
C	36	Rimon	12 fl oz	BC	55	2%
C	37	Rimon	8 fl oz	ABC	62	8%

CPB systemic trial with variable planting density (E–22)

At-plant systemics are frequently used for early-season protection against CPB and extended protection against aphids and leafhoppers. However, maximum rates defined by product labels are based on a per-area basis, so when higher planting densities are employed, per-plant active ingredient rates may be reduced. This trials seeks to investigate whether there are any observable effects of higher planting densities on plant protection from these products applied at maximum label rates. Snowden cut tubers were hand planted on Apr 24.

Trt No.	Spacing (seed/ft)	Population (seed/acre)	Treatment Product	Application Method	Jun 5	Jun 13	Jun 18	Jun 25	Jul 3
1	1	14520	Platinum	Seed	0%	0%	2%	11%	80%
2	1	14520	Platinum	In-furrow	0%	0%	1%	5%	44%
3	1	14520	Verimark	Seed	0%	1%	1%	9%	50%
4	1	14520	Verimark	In-furrow	0%	1%	1%	3%	4%
5	2	29040	Platinum	Seed	0%	0%	1%	4%	58%
6	2	29040	Platinum	In-furrow	0%	0%	1%	4%	51%
7	2	29040	Verimark	Seed	0%	0%	1%	5%	5%
8	2	29040	Verimark	In-furrow	0%	0%	1%	3%	3%

The "Mean defoliation" header spans the Jun 5, Jun 13, Jun 18, Jun 25, Jul 3 columns.

Full-Season CPB Management Trial (K-1)

This trial includes several full-season CPB management programs including registered and experimental products that should provide season-long control while rotating insecticide mode of action groups to reduce or slow the development of insecticide resistance in beetle populations. Refer to the table at page bottom for more information about the active ingredients in these insecticides. Plinazolin (Syngenta) is not yet registered for commercial use in potato.

Trt	1st Gen. (applied)	2nd Gen. (planned)	Jul 2 CPB	Defol
1	Untreated	Untreated	144	54%
2	Calantha (4x)	Minecto Pro (2x)	66	4%
3	Torac + Expo. (2x)	Minecto Pro (2x)	15	0%
4	Minecto Pro (2x)	Calantha (3x)	5	0%
5	Platinum » Agri-Mek (2x)	Exirel (2x)	7	0%
6	Verimark » Rimon (2x)	Delegate (2x)	54	1%
7	Plinazolin (2x)	Delegate (2x)	3	0%
8	Calantha (4x)	Vantacor (2x)	102	9%
9	Falcondor (3x)	Vantacor (2x)	24	1%

Insecticide resistance management: Do not apply products with common IRAC numbers across two different generations

Product	IRAC	Active ingredient(s)	Product	IRAC	Active ingredient(s)
Admire Pro 4.6 SC	4A	imidacloprid	Coragen 1.67 SC	28	chlorantraniliprole
Platinum 75 SG	4A	thiamethoxam	Exirel 0.83 SE	28	cyantraniliprole
Delegate 25 WG	5	spinetoram	Harvanta 50 SL	28	cyclaniliprole
Falcondor 2 SC	5	spinosad	Vantacor 5 SC	28	chlorantraniliprole
Agri-Mek 0.7 SC	6	abamectin	Verimark 1.67 SC	28	cyantraniliprole
Rimon 0.83 EC	15	novaluron	Minecto Pro 1.67 SC	28+6	cyantraniliprole + abamectin
Torac 15 EC	21A	tolfenpyrad	Elevest 2.22 SC	3A+28	bifenthrin + chlorantraniliprole
Calantha 80 SL	35	ledprona	Plinazolin	30	isocycloseram

Weather and Decision Support Resources from UW Madison

Ben Bradford, Russ Groves, and Amanda Gevens. For questions or more information contact bbradford@wisc.edu.

UW Extension AgWeather – agweather.cals.wisc.edu

This site provides easy access to several different types of weather data from our database. Data coverage extends across the upper Midwest, see map right.

- **Weather:** Min/max daily air temp, precipitation, dew point, vapor pressure, hours of high humidity, and mean temperature during periods of high humidity.
- **Solar insolation:** A measure of the amount of solar radiation striking the surface of the earth, this data is sourced from the UW Space Science and Engineering Center and is used to compute potential evapotranspiration.
- **Evapotranspiration:** Useful in irrigation scheduling, these daily values are calculated from air temperature, solar insolation, latitude, and day of year.
- **Thermal models:** View/calculate degree day models and some disease risk models. Also available is an oak wilt risk model, essential if pruning oaks.
- **Email subscriptions:** Add sites of your choosing (home, field, etc.) and get optional daily weather updates, forecasts, and degree day models.
- **Free API:** Retrieve weather data via API for integration with custom software.

AgWeather offers weather data access via the web or a free API for integration into custom software.

Vegetable Disease and Insect Forecasting Network (VDIFN) – agweather.cals.wisc.edu/vdifn

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.
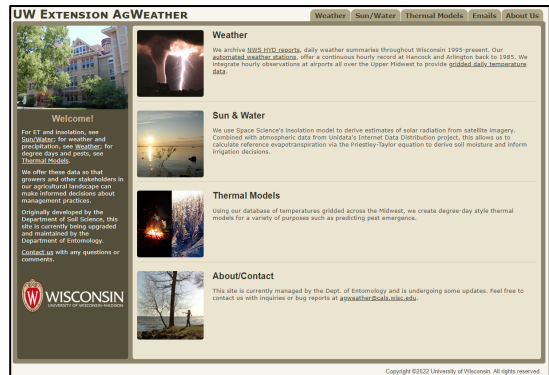
When you visit VDIFN you will see the navigation and settings pane on the left, the map and pest severity display in the center, and a legend on the lower right. You can switch between disease, insect, and custom model modes with the buttons across the top of the left panel. Pick a model using the Model Selection section and use the question mark box 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).

VDIFN showing estimated Seedcorn maggot risk based on a degree day model, May 1, 2024. Plant corn before or after Seedcorn maggot adult flights to reduce the risk of seedling damage from larvae.

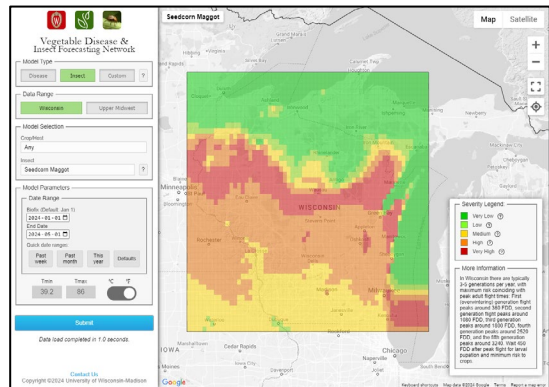## Irrigation Scheduling Program – wisp.cals.wisc.edu

A complete irrigation scheduling program for your farm, it uses a few simple initial and periodically updated conditions (soil moisture, crop, canopy cover) as well as weather and potential evapotranspiration values (automatically imported but can be manually adjusted). Create a farm, add pivot(s), each pivot can serve one or more fields, and each field can have one crop. Once set up it tracks water balance in the field and predicts soil water levels. It warns when a field crosses below the allowable depletion or experiences deep drainage due to excess water.

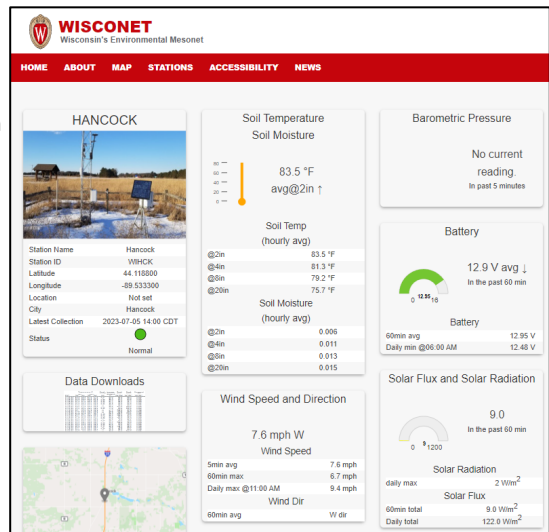## Wisconsin Environmental Mesonet – wisconet.wisc.edu

The Wisconsin Environmental Mesonet (WiscoNet) is a growing network of weather and soil monitoring stations across Wisconsin, designed to provide high quality data at high spatial and temporal resolutions. There are currently 73 Wisconet stations with plans to expand to around 90 by 2026. Each Wisconet station provides more than one dozen measurements every 5 minutes. The website was recently relaunched with many interface improvements including interactive maps and graphs. Wisconet is funded by the USDA Rural Partnerships Institute and the Wisconsin Alumni Research Foundation. Wisconet receives monthly payments from Synoptic Data PBC for data provided to the National Mesonet Program.

| Vegetable Entomology | Vegetable Pathology | AgWeather | VDIFN | WISP | Wisconet |