

2024 Hancock Agricultural Research Station Field Day

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<https://vegento.russell.wisc.edu>

1st gen CPB foliar trial (E-24)

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 23 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 4 (10% egg hatch), B=Jun 11 (50% egg hatch), C=Jun 18.

Trt	Product	Rate	Rate	Appl.	Jun 20 Defol.
1	Untreated				16.5%
2	Exp 1	L		BC	2.8%
3	Exp 1	M		BC	2.3%
4	Exp 1	H		BC	0.8%
5	Delegate	4 oz wt/a		BC	1.8%
6	Harvanta	5.5 fl oz/a		BC	1.5%
7	Harvanta	10.9 fl oz/a		BC	1.0%
8	Torac	14 fl oz/a		BC	1.5%
	Dyne-Amic	0.25 % v/v		BC	
9	Torac	21 fl oz/a		BC	0.8%
	Dyne-Amic	0.25 % v/v		BC	
10	Exp 2	14 fl oz/a		BC	1.8%
11	Exp 2	21 fl oz/a		BC	1.3%
12	Calantha	16 fl oz/a		BC	4.5%
13	Calantha	16 fl oz/a		ABC	3.5%
14	Elevest	9.6 fl oz/a		BC	1.0%
15	Vantacor	2.5 fl oz/a		BC	1.5%
16	Rimon	12 fl oz/a		BC	2.8%
17	Rimon	12 fl oz/a		ABC	2.0%

Insecticide resistance management

Do not apply products with common IRAC numbers across two different generations.

Product	IRAC	Active ingredients
Admire Pro 4.6 SC	4A	imidacloprid
Platinum 75 SG	4A	thiamethoxam
Delegate 25 WG	5	spinetoram
Agri-Mek 0.7 SC	6	abamectin
Rimon 0.83 EC	15	novaluron
Torac 15 EC	21A	tolfenpyrad
Exirel 0.83 SE	28	cyantraniliprole
Harvanta 50 SL	28	cyclaniliprole
Vantacor 5 SC	28	chlorantraniliprole
Verimark 1.67 SC	28	cyantraniliprole
Elevest 2.22 SC	3A + 28	bifenthrin + chlorantraniliprole
Minecto Pro 1.37 SC	28 + 6	cyantraniliprole + abamectin
Calantha	35	ledprona

CPB systemic trial with variable planting density (E-26)

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	Seeding	Product	Appl.	Rate	Unit	Jun 18 Defol.
1	12 in.	Platinum	Seed	0.16 oz wt/cwt		2.3%
2	12 in.	Platinum	In-furrow	2.67 oz wt/a		2.3%
3	12 in.	Verimark	Seed	0.75 oz wt/cwt		3.3%
4	12 in.	Verimark	In-furrow	13.5 fl oz/a		2.5%
5	8 in.	Platinum	Seed	0.11 oz wt/cwt		1.8%
6	8 in.	Platinum	In-furrow	2.67 oz wt/a		1.8%
7	8 in.	Verimark	Seed	0.5 oz wt/cwt		1.5%
8	8 in.	Verimark	In-furrow	13.5 fl oz/a		2.3%

Full-Season CPB Management Trial (K-25)

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 below left for more information about the active ingredients in these insecticides. Please note that plinazolin is an unregistered Syngenta product currently in development.

Trt	1st Generation	2nd Generation	Jun 17 Defol.
1	Untreated check		6.0%
2	Platinum » Agri-Mek (2x)	Exirel (2x)	1.0%
3	Verimark » Rimon (3x)	Delegate (2x)	1.5%
4	Plinazolin (2x)	Delegate (2x)	0.5%
5	Calantha (3x)	Vantacor (2x)	3.0%
6	Calantha (3x)	Minecto Pro (2x)	3.8%
7	Minecto Pro (2x)	Delegate (2x)	1.3%
8	Platinum » Calantha (2x)	Agri-Mek (2x)	1.8%
9	Platinum » Delegate (2x)	Calantha (3x)	0.8%
10	Rimon (2x) » Calantha (1x)	Minecto Pro (2x)	2.5%
11	Calantha (2x) » Torac (1x)	Minecto Pro (2x)	2.5%
12	Calantha (2x) » Delegate (1x)	Minecto Pro (2x)	3.3%
13	Rimon (2x) » Delegate (1x)	Agri-Mek (2x)	2.5%
14	Rimon (2x) » Delegate (1x)	Minecto Pro (2x)	1.3%
15	Minecto Pro (2x)	Plinazolin (2x)	1.0%
16	Verimark » EXP + Exponent (2x)	Delegate (2x)	1.5%
17	Verimark » EXP	Delegate (2x)	1.8%
18	Admire Pro » EXP + Exponent (2x)	Delegate (2x)	1.3%
19	Admire Pro » EXP	Delegate (2x)	1.8%

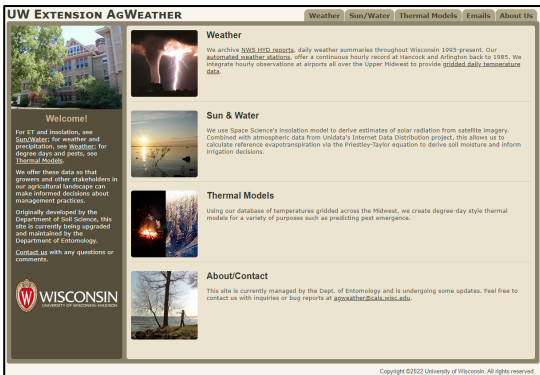
Web resources from UW Madison Entomology & Plant Pathology

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.

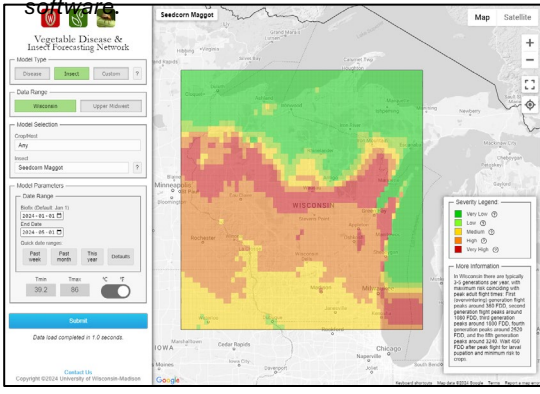


AgWeather offers weather data access via the web or a free API for integration into custom

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).



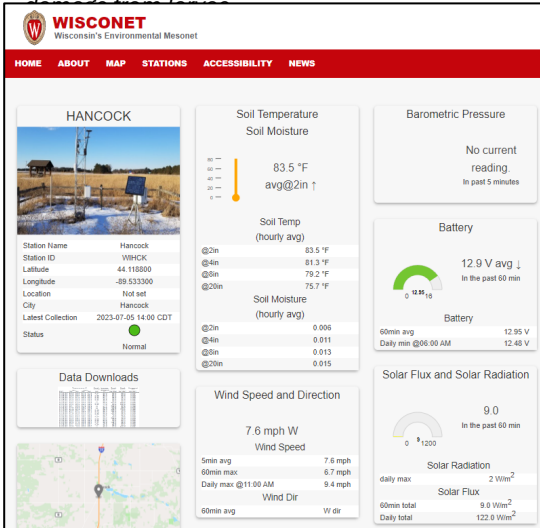
VDIFN showing estimated Seedcorn maggot risk based on a degree day model, May 1, 2024. Plant corn before or after Seedcorn maggot adult flights to reduce the risk of seedling

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 31 WiscoNet stations with plans to expand to around 90 by 2026. Each WiscoNet station provides more than one dozen measurements every 5 minutes. From 2017-2023 several of these weather stations were administered by Michigan State EnviroWeather; with the launch of WiscoNet these stations will be back under UW management. The web services associated with these stations are still being developed and we plan to add many of our disease and insect models to the station data pages in the future.



Vegetable Entomology



Vegetable Pathology



AgWeather



VDIFN



WISP



WiscoNet