



Entomology Field Crops Update

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Overview

- Resistance Research Updates
 - corn rootworm
 - European corn borer
- Emerging Pests
 - soybean gall midge
- New Extension Tools
 - Insect Pest Text Alert
 - SlugNet (new!)



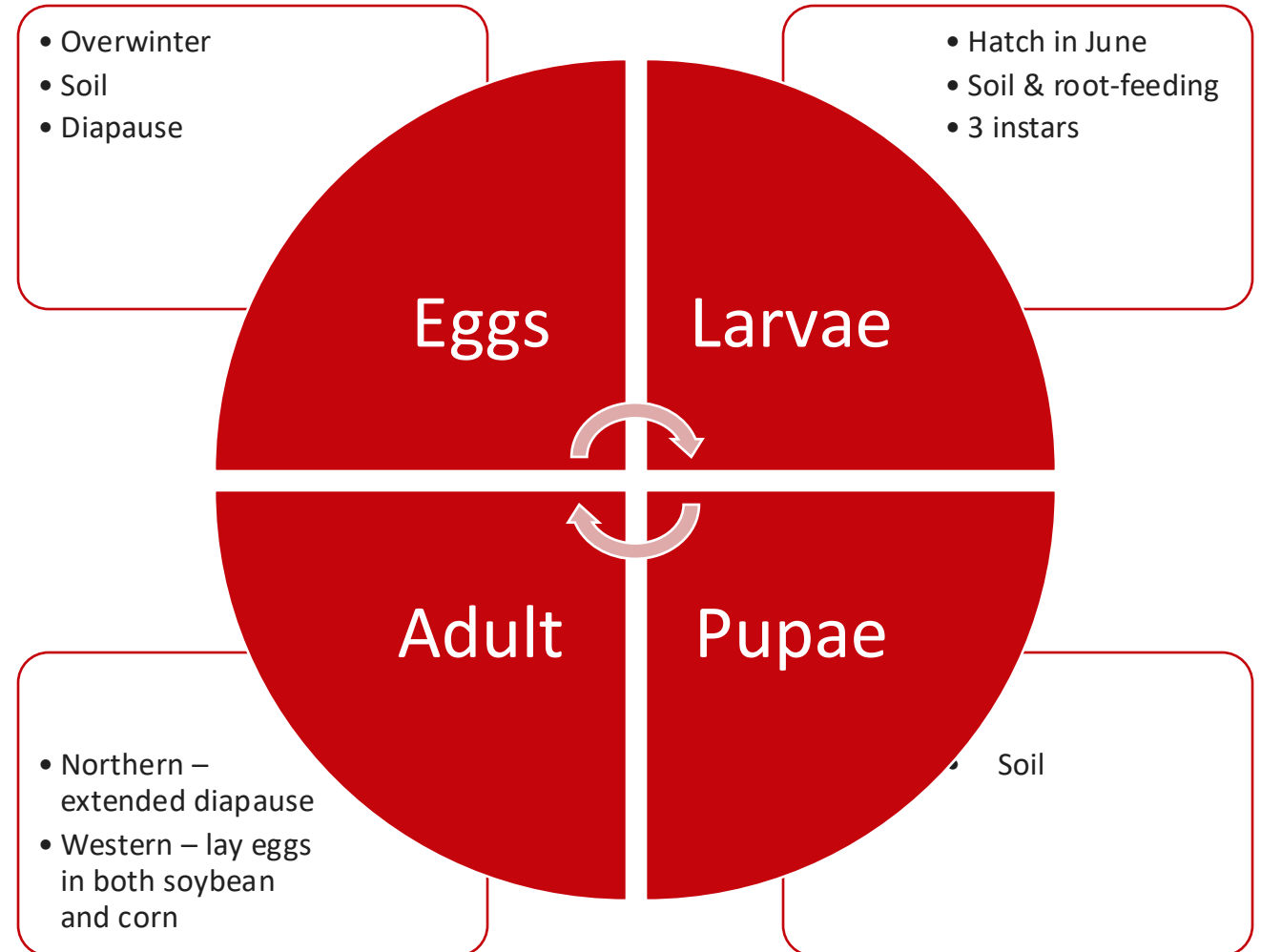


Corn Rootworm in Wisconsin

- Northern & Western spp.



<https://crops.extension.iastate.edu/cropnews/2022/06/corn-rootworm-egg-hatch-behind-schedule-year>





Resistance

- Companies are concerned
- Bick Lab testing is underway
 - major GMO traits
 - in-furrow applications
- Fitness cost to Corn Rootworm
 - 4 generations to lose trait
- No rescue treatment for larvae
- Reduced by rotating
 - corn with other crops
 - Traits and insecticides



Wisconsin Field Trials – Bayer traits

Trt.	Trt.	Emergence	Root Rating	Lodging	Harvest Yield
No.	Description	Mean ± SEM	Mean ± SEM	Mean ± SEM	Mean ± SEM
1	VT2P Hybrid 1	91.67% ± 0.02% a	1.00 ± 0.09 a	1.25% ± 0.48% a	276.50 ± 11.92 a
2	SmartStax Hybrid 1	88.12% ± 0.01% a	0.84 ± 0.02 a	0% ± 0% b	270.25 ± 3.22 a
3	SmartStax PRO Hybrid 1	83.96% ± 0.00% a	0.53 ± 0.10 a	0.25% ± 0.25% b	266.50 ± 3.23 a
4	VT4PRO Hybrid 1	89.58% ± 0.01% a	0.50 ± 0.07 a	0% ± 0% b	281.75 ± 5.06 a
5	VT2P Hybrid 2	90.83% ± 0.03% a	0.90 ± 0.21 a	0% ± 0% b	275.75 ± 8.12 a***
6	SmartStax Hybrid 2	90.83% ± 0.03% a	0.65 ± 0.24 a	0% ± 0% b	277.75 ± 6.81 a***
7	SmartStax PRO Hybrid 2	89.79% ± 0.01% a	N/A**	0% ± 0% b	277.00 ± 8.22 a
		P = 0.139	P = 0.127	P = 0.002*	P = 0.808



Wisconsin Field Trials – Insecticides

Trt.	Trt.	Emergence	Vigor	Root Rating	Lodging	Harvest Yield
No.	Description	Mean ± SEM	Mean ± SEM	Mean ± SEM	Mean ± SEM	Mean ± SEM
1	Untreated	89.79% ± 0.01% a	96.25% ± 1.25% a	0.74 ± 0.13 ab	0.50% ± 0.29% a	276.50 ± 2.66 a**
2	Ethos Elite LFR (1.98 lb/gal)	90.62% ± 0.01% a	96.25% ± 1.25% a	1.57 ± 0.41 b	0.25% ± 0.25% a	264.75 ± 5.23 a
3	Capture LFR (1.5 lb/gal)	88.75% ± 0.02% a	96.25% ± 1.25% a	0.33 ± 0.17 a	0% ± 0% a	262.75 ± 7.51 a
4	Force Evo (2.1 lb/gal)	88.54% ± 0.02% a	97.50% ± 1.44% a	0.18 ± 0.09 a	0% ± 0% a	262.75 ± 12.46 a
5	Index (2.8 lb/gal)	90.00% ± 0.03% a	100% ± 0.00% a	0.58 ± 0.21 ab	0% ± 0% a	274.50 ± 6.40 a**
		P = 0.895	P = 0.152	P = 0.00584*	P = 0.199	P = 0.793



Corn rootworm takeaways

- At Arlington, we are not finding the reported resistance issues, under last year's low pressure year or 2023's high pressure year
 - Any CRW trait with Bt or RNAi worked
 - Insecticides: Capture, Force Evo, and Index worked
- Resistance can be localized – so your field may have greater issues

European Corn Borer

- 1996: *Bacillus thuringiensis* (Bt) traits control ECB
 - Cry1Ab, Cry1F, and more recently, Vip3A
- Resistance to Cry1Ab: Canada & CT
- <https://crops.extension.iastate.edu/>



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European Corn Borer



Kelsey E. Fisher, Ph.D.



Department of Entomology

The Connecticut Agricultural Experiment Station

123 Huntington Street

New Haven, CT 06511





Meet the soybean gall midge

- Emerging pest causing significant damage to soybean crops
- ID: larvae clear to white to orange
- Scout: field edges early season, using pocket knife on scars
- Current Status in Wisconsin: **not yet detected**
 - Under a North Central Soybean Grant, Bick Lab & DATCP surveyed the state





Meet the **soybean gall midge**

- Challenges in effective chemical control due to extended emergence and multiple generations¹
- Planting soybeans later in the season to reduce infestation rates
 - Mowing field borders and tillage as potential management tactics
- Chemical Controls
 - Foliar insecticides as a potential option, though efficacy and timing need further study
- Genetic Resistance
 - Ongoing research to identify and develop tolerant soybean varieties

Insect Pest Text Alert system



DATCP
trapping
network



UW-Madison
Extension
role



Insect Pest
Text Alert
system



Extension Collaboration



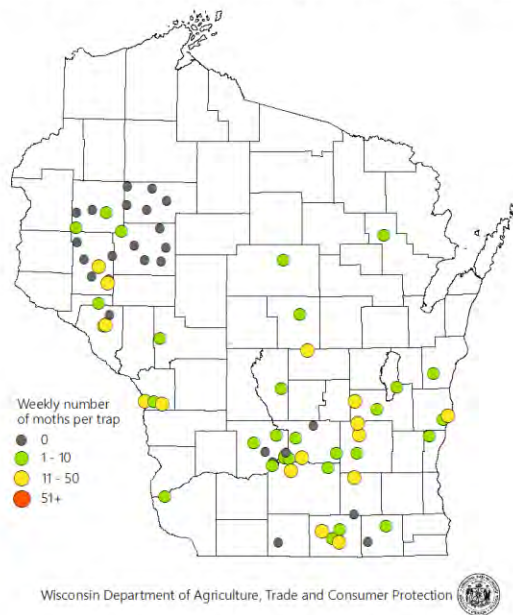
Extension
UNIVERSITY OF WISCONSIN-MADISON



DATCP Trapping Network

72 pheromone traps have been established in 26 counties

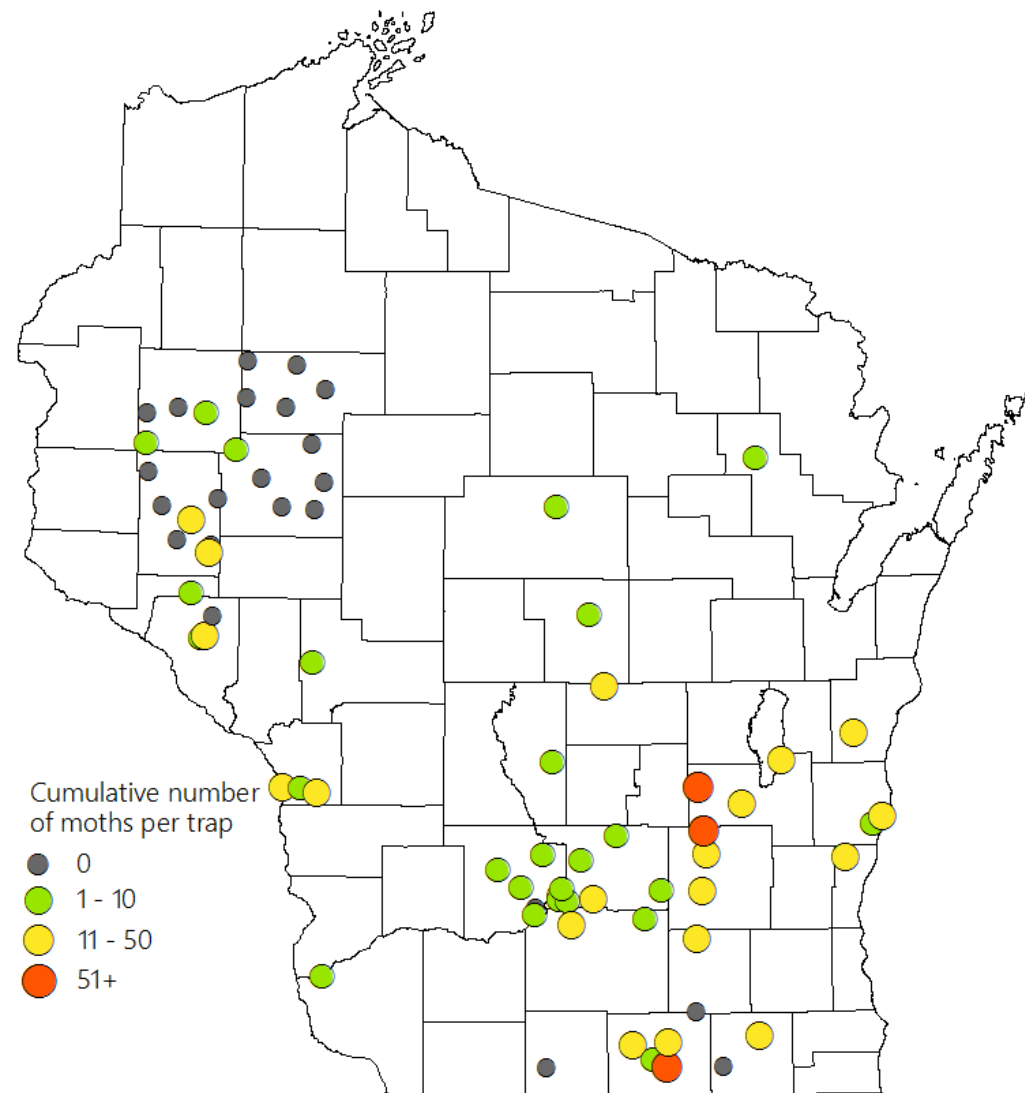
Black Cutworm Counts April 26-May 2, 2024



https://datcp.wi.gov/Pages/Programs_Services/BlackCutworm.aspx



Black Cutworm Counts as of May 2, 2024



Wisconsin Department of Agriculture, Trade and Consumer Protection





State of Wisconsin

Department of Agriculture, Trade and Consumer Protection

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Pest Survey

Black Cutworm



DATCP has monitored early-season black cutworm migration flights for more than 20 years, with the help of volunteer cooperators throughout the state. Moth counts from the annual trapping survey provide precise data on the timing of black cutworm arrival into Wisconsin and are used to forecast optimal scouting and treatment windows based on significant captures. A significant capture occurs when nine or more moths are trapped in two nights.

For the 2024 season, 72 pheromone traps have been established in 26 counties. Current multistate migration maps are available at [Great Lakes and Maritimes Pest Monitoring Network](#) (select BCW tab) and [Black Cutworm corn ipmPIPE](#).

Moth Counts for the Week Ending May 2, 2024

County	Location	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
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<https://datcp.wi.gov/Pages/Programs/Services/PestSurvey.aspx>

Pest Survey



Pest Survey specialists at DATCP collect and manage data on plant pests that threaten agricultural production and pose trade barriers. This program focuses on surveillance and early detection of economically significant pests, including insects, diseases, mollusks, nematodes and weeds. Data is collected through field-based sampling and from networks of cooperators across Wisconsin. Lab confirmation of disease pathogens and nematodes is provided by the Plant Industry Laboratory in Madison. The program conducts long-term historical pest surveys, while continually adapting and developing new surveys in response to emerging threats.

Much of the Pest Survey's work is carried out in cooperation with the U.S. Department of Agriculture Animal and Plant and Health Inspection Service and other partners, such as the University of Wisconsin, the Wisconsin Department of Natural Resources, and researchers nationwide. [The Cooperative Agricultural Pest Survey \(CAPS\) Program](#) provides coordination and funding for pest detection projects.

Pest Monitoring Networks

APPLE ORCHARD PESTS

BLACK LIGHT PESTS

BLACK CUTWORM

CORN EARWORM

TRUE ARMYWORM

WESTERN BEAN CUTWORM

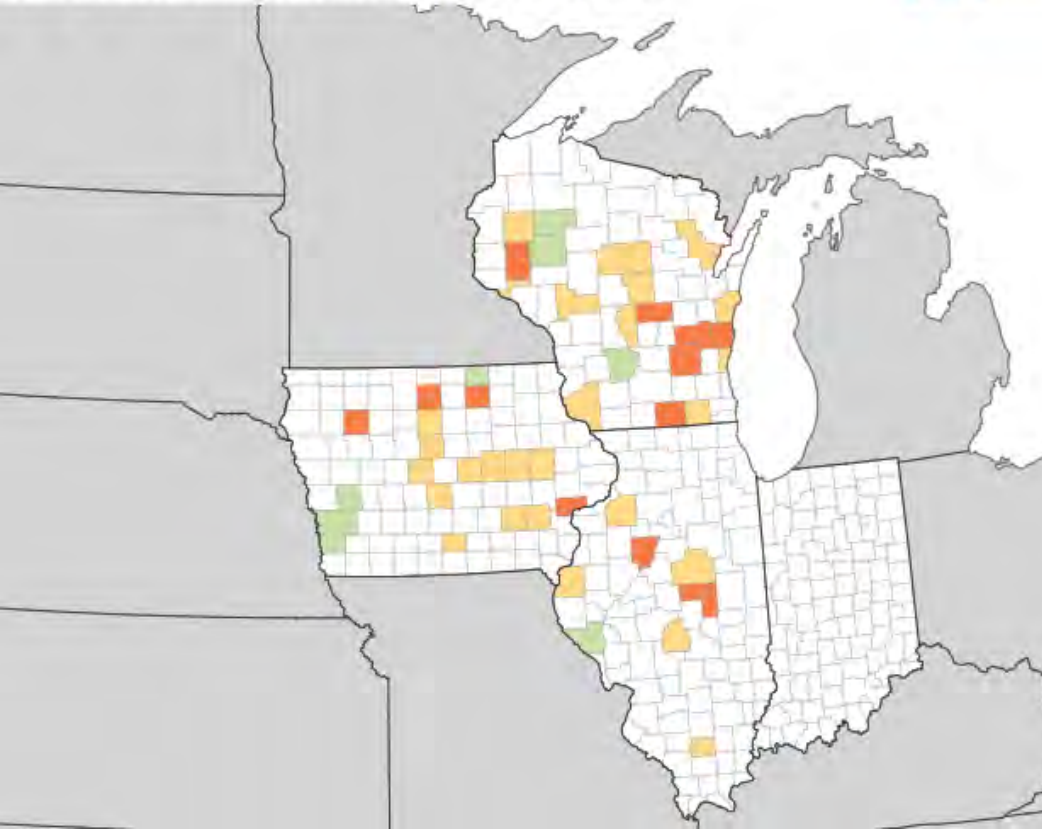
Black cutworm

Black Cutworm: April - June

Selecting a county that is colored in on the map will show a graph of this year's catches at the site.

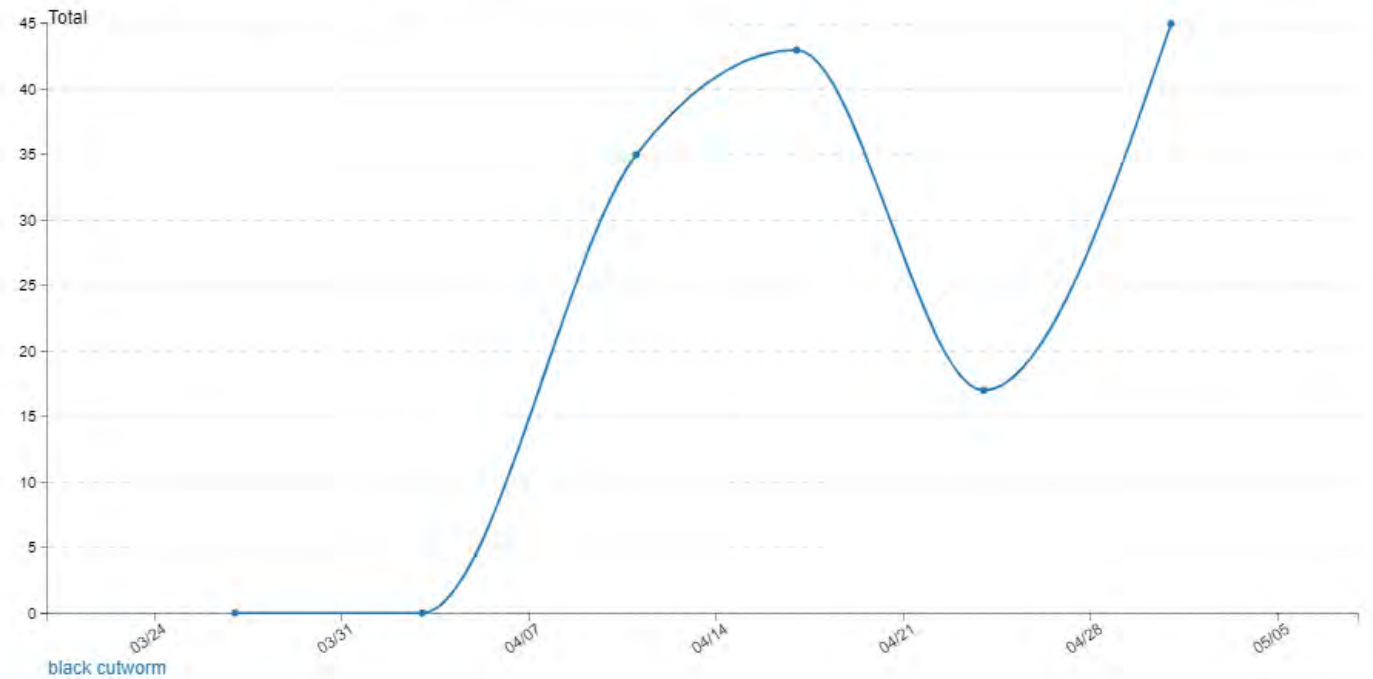
ary map: black cutworm (*Agrotis ipsilon*): May 1, 2024 to May 8, 2024

[Info](#) [Share](#)



Trap Data at Dodge County - Waupun for 2024

[Share](#) [Download](#) [Email](#)





Welcome

Instructions

Moth Counts

Dashboard

BCW

TAW

ECB

WBC

CEW

FAW

Great Lakes and Maritimes Pest Monitoring Network 2023

Black Cutworm 2023

Welcome

Instructions

GLMPMN 2023

Black Cutworm (BCW)

#Traps: 153 (8 ↑ from last week)

#Counts: 7,516 (56 ↑ from last week)

#Traps Checked Last Week: 31

Average # Per Trap Last Week: 49.9

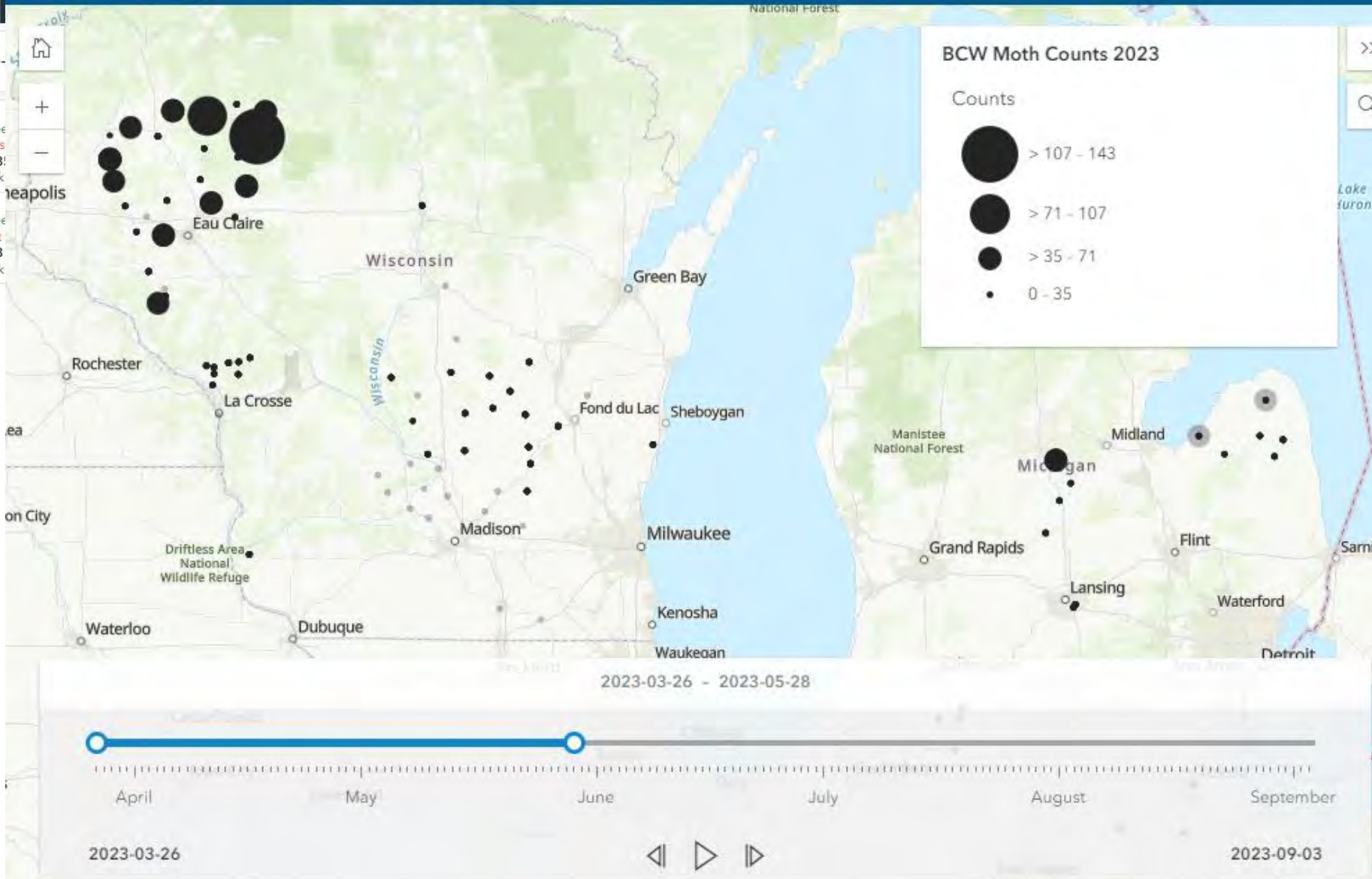
True Armyworm (TAW)

#Traps: 150 (3 ↑ from last week)

#Counts: 5,042 (4 ↑ from last week)

#Traps Checked Last Week: 31

Average # Per Trap Last Week: 33.7



>> Select State/Prov

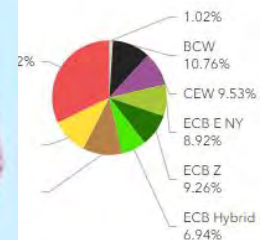
No category selected



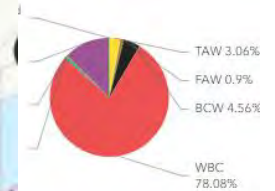
Traps: 1469

Cumulative Moth Count: 16473

Pest



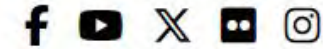
Counts by Pest





State of Wisconsin

Department of Agriculture, Trade and Consumer Protection



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Field Notes Newsletter



Subscribe to Field Notes

Under the **Division of Agricultural Resource Management**, check the box for **Field Notes**.

Contact

Pest Survey Program
(866) 440-7523
datcppesthotline@wi.gov

For the current growing season, DATCP's Pest Survey Program is offering a new email publication called **Field Notes**. Inside **Field Notes**, readers will find the same pest monitoring data and maps once provided in the Wisconsin Pest Bulletin, along with current articles on economically important plant pests affecting Wisconsin's field crops, fruits, vegetables, nurseries, and forests. **Field Notes** replaces the Pest Bulletin as the source for results of our field surveys, inspections, and lab diagnostic work.

<https://service.govdelivery.com/accounts/WIDATCP/subscriber/new>



Field Notes

- Goes through weather & Plant progress
 - Ex. 75% potation planting complete
- Insect Flight reports
 - “This spring, moth flights have been underway since late March. Trap counts rose noticeably last week (April 18-24) when the network’s traps collected a total of 366 moths, or an average of 17 moths per trap. Another 559 moths were recorded this week (April 25-May 2). As of May 2, the cumulative total true armyworm moth catch is 1,037 moths in 25 traps, or an average of 41 moths per trap.”
- Information on pests
 - <https://cropsandsoils.extension.wisc.edu/articles/true-armyworm-control-in-wisconsin-crop-fields-and-pastures/>





UW-Madison Extension Role

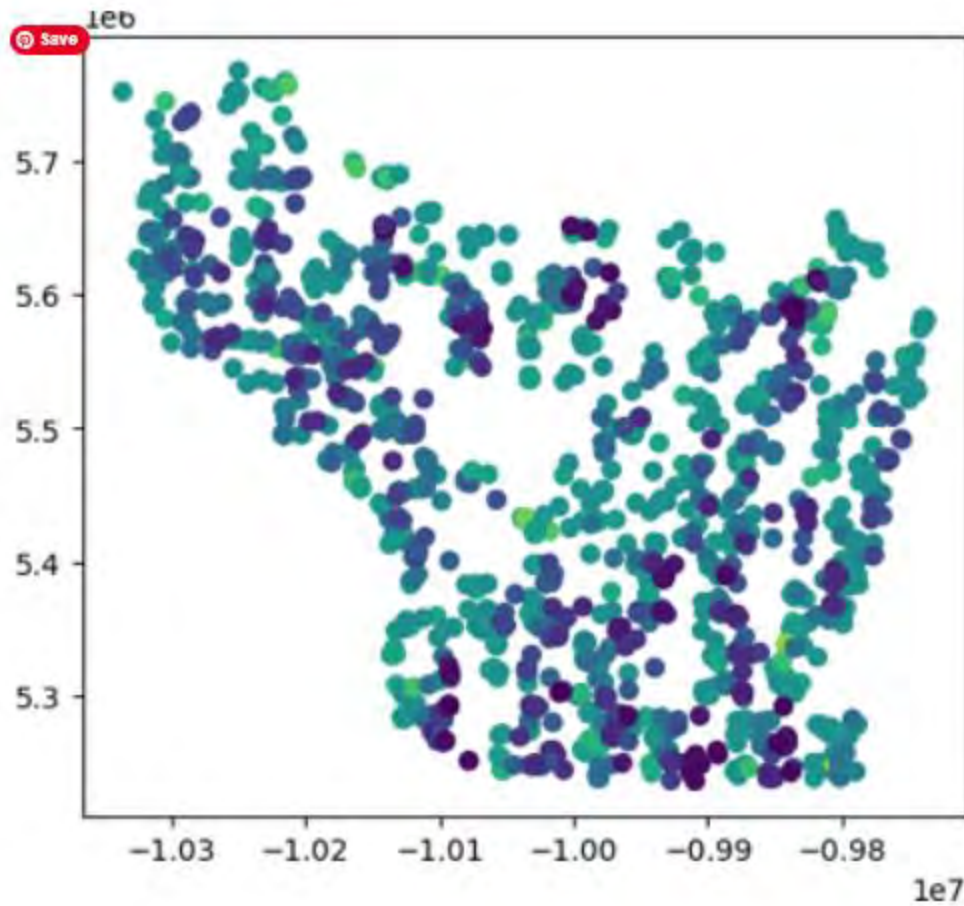
Volunteer coordination
Reporting to DATCP

Interested in hosting a trap? →



Josh Kamps
Regional Crops Educator
joshua.kamps@wisc.edu
(608) 673-0680



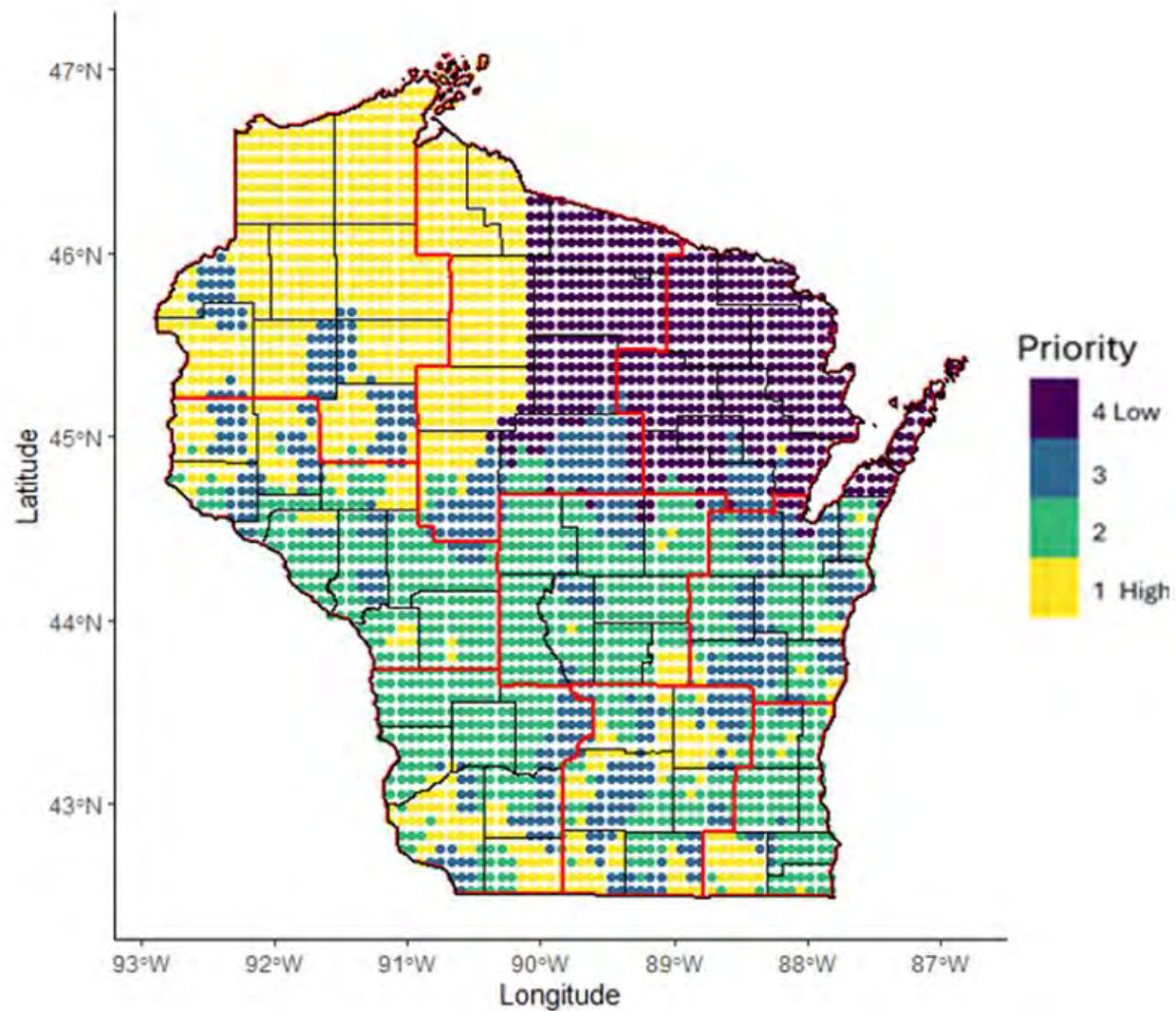
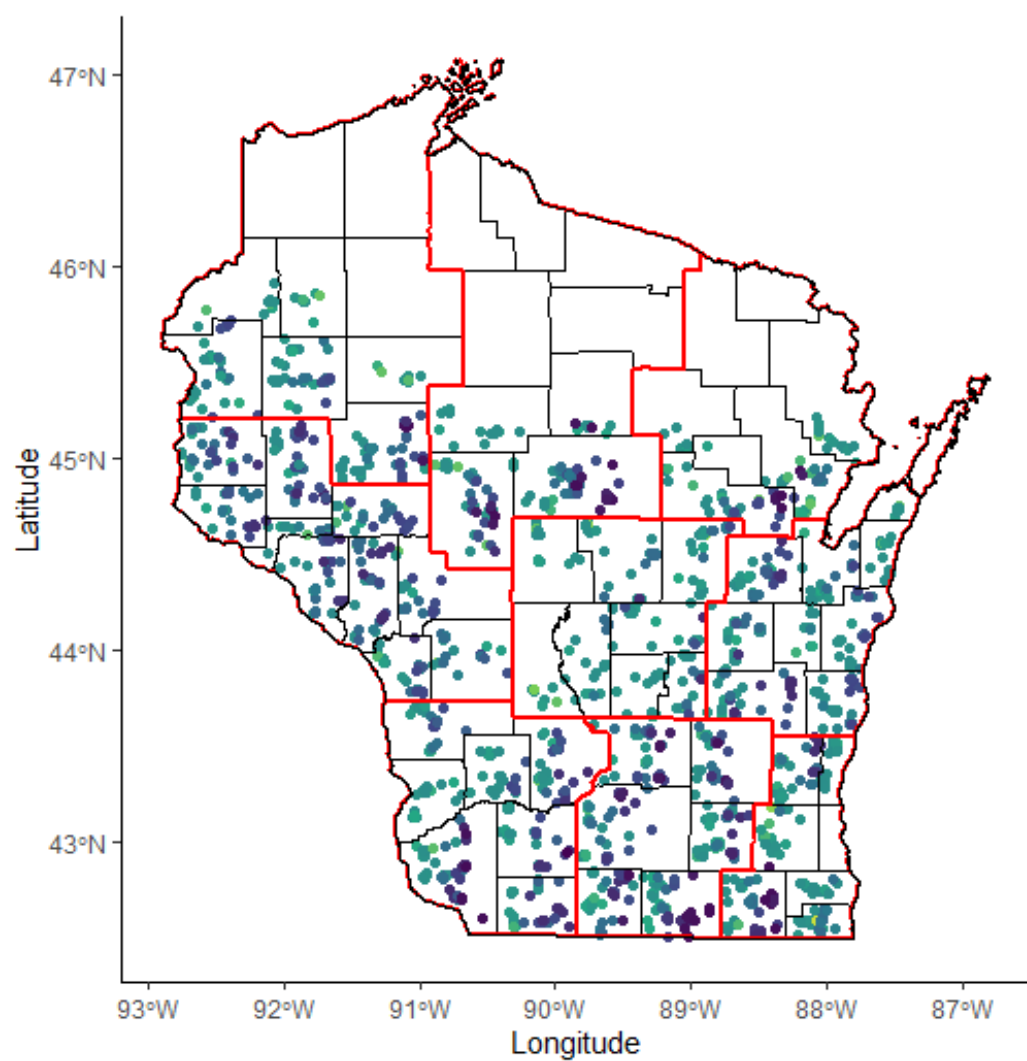


Trapping Optimization

The Bick Lab is developing methods to optimize insect collection locations for DATCP's trapping network. The Insect Pest Text Alert service will send alerts by region based on the insects found within your region.



Trap Placement & Missingness





The Iowa Pest Alert Network was created in 2022 to provide short, timely updates via text messaging to farmers and crop consultants, agronomists, and extension personnel that advise farmers. This website links to more information about key pests in the Midwest, degree day mapping, regional supplemental publications.

To get on the text messaging list, sign up using the link below!

[Sign up for Pest Alert Network](#)

[Recent Pest News](#)

[Contact Us](#)

Funding and Support

North Central
IPM
Center



Past Alerts

[IA Pest Alert: Check corn fields for stalk quality and standability fall. More info at the link below.](#)

Sep 15, 2023

[IA Pest Alert: Soybean gall midge confirmed in Hamilton, Madison counties. Learn how to scout SGM at the link below.](#)

Aug 10, 2023

[IA Pest Alert: Scout for aphids! Read these articles for scouting management considerations in corn and soybean.](#)

Aug 9, 2023

[All news](#)

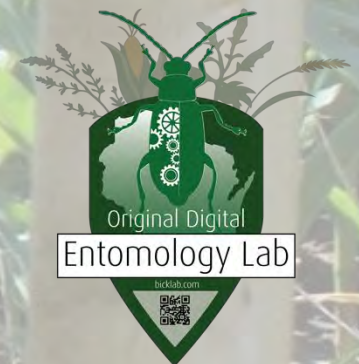
Pests of interest

Pheromone traps

Blacklight traps

DATCP Scouting

1. Black cutworm
2. Western bean cutworm
3. True armyworm
4. Fall armyworm
5. Corn earworm
6. Corn rootworm
7. Soybean aphids
8. Alfalfa weevil
9. Potato leafhopper
10. Spidermites





Insect Pest Text Alert

Sign Up

- Name
- Phone
- Email
- Region(s)

DATCP Network

- 10 pests
- weekly updates

Text alert

- Go Scout / heads up
- Alert page
- May have a photo

Extension

- Bick Lab contact
- Link
 - Extension speed resource
 - Deep resource
- Field Notes





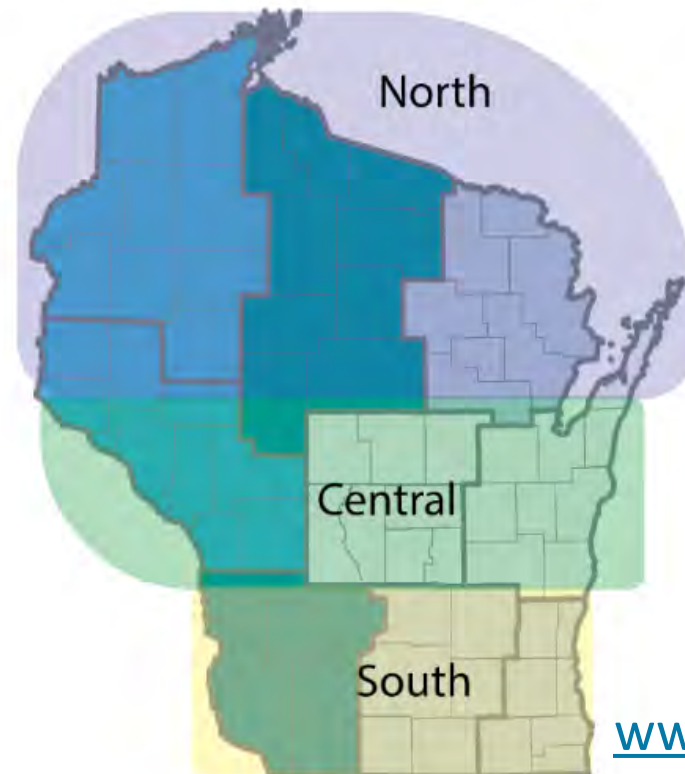
Insect Pest Text Alert

Sign up for the alert here:

[Click Here to Sign Up!](#)

or fill in the form here >>>

Signup page for the Insect Pest Text Alert system from UW-Madison, UW Extension, and DATCP



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☐ North WI
☐ South WI

Contact first name *
John

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Smith

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