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Western Bean Cutworm 2023 Flight: Moth Captures Exceed Last Two Years

(Christian Krupke) & (John Obermeyer)

Tracking the western bean cutworm moth flight wouldn't be possible without the many pheromone trap cooperators in our network, see following "Western Bean Cutworm Pheromone Trap Report." To those volunteers, we are <u>so</u> grateful! Please thank any of those cooperators that you may know for their efforts in helping us track this pest to better time scouting efforts. Buy them a sandwich, or ice cream!



In looking at a comparison of the 5-year moth captures (see graph below), there were plenty of moths flying the third week of July (week 5 of trapping). Over our years of trapping this pest, that period has consistently been the peak moth flight. Soon after that time, we were getting reports of egg masses being found on pre-tassel corn. Since then, no reports of larval ear infestations have been received from northern Indiana counties, where risks are greatest. We are likely through the vast majority of egg-laying and the treatment window has passed. The uncertain news is what this pest will do next year, as the previous two years were very low counts. Stay tuned and happy scouting!!!



Young larva, and early ear tip damage, revealed after pulling down the husks. (Photo Credit: John Obermeyer)

2023 Western Bean Cutworm Pheromone Trap Report

(John Obermeyer)

		WBC Trapped							
		Wk 1 6/15/23-	Wk 2 6/22/23	Wk 3 629/23	Wk 4 7/6/23-	Wk 5 7/13/23·	Wk 6 7/20/23	Wk 7 7/27/23	
County	Cooperator	6/21/23	6/28/23	7/5/23	7/12/23	7/19/23	7/26/23	8/2/23	
Adams	Roe/Mercer Landmark, Decatur	0	0	1	0	0	0	0	
Allen	Anderson/Blue River Organics, Churubusco	2	1	0	0	25	4	4	
Allen	Gynn/Southwind Farms, Ft. Wayne	2	0	0	2	65	31	6	
Allen	Kneubuhler/G&K Concepts, Harlan	0	1	0	0	1	1	2	
Bartholomew	Bush/Pioneer Hybrids, Columbus	0	0	0	0	0	0	0	
Benton	Vickrey/Advanced Agrilytics, Trap 1	0	3	0	0	2	0	0	
Benton	Vickrey/Advanced Agrilytics, Trap 2	0	0	0	2	0	2	0	
Benton	Vickrey/Advanced Agrilytics, Trap 3	1	0	0	3	0	0	0	
Benton	Vickrey/Advanced Agrilytics, Trap 4	4	0	0	2	0	0	0	
Benton	Vickrey/Advanced Agrilytics, Trap 5	1	0	1	3	0	4	0	
Benton	Vickrey/Advanced Agrilytics, Trap 6	2	0	1	5	2	0	0	
Benton	Vickrey/Advanced Agrilytics, Trap 7	2	0	1	5	7	1	0	

		WBC Trapped						
		Wk 1 6/15/23	Wk 2 -6/22/23	Wk 3 629/23 -	Wk 4 7/6/23-	Wk 5 7/13/23	Wk 6 7/20/23 -	Wk 7 7/27/23 -
County	Cooperator	0/21/23	0/20/23	7/5/23	//12/23	7/19/25	7/26/23	8/2/23
Benton	Agrilytics, Trap 8 Thurman/Ceres	0	0	2	6	7	1	0
Blackford	Solutions, Warren Mace/Ceres Solutions,	0	0	0	0	0	0	0
Clay	Brazil Fritz/Ceres Solutions,	0	0	0	0	0	0	0
Daviess	Clay City Brackney/Purdue CES,	0	0	0	0	0	0	0
Dubois	Montgomery Eck/Dubois Co. CES,	0	0	0	0	0	0	0
Elkhart	Jasper Kauffman/Crop Tech	0	0	0	4	10	0	1
Fountain	Inc., Millersburg Mroczkiewicz/Syngenta,	4	5	13	23	4	0	0
Hamilton	Attica Campbell/Beck's Hybrids	50	0	0	0	4	0	0
Hendricks	Nicholson/Nicholson Consulting, Danville	0	0	0	0	0	0	0
Howard	Shanks/Clinton Co. CES, Kokomo	0	0	0	0	0	0	0
Jasper	Overstreet/Jasper Co. CCSI, Wheatfield	1	8	16	42	118	56	5
Jasper	Ritter/Dairyland Seeds, McCoysburg		0	1	40	15		
Jay	Boyer/Davis PAC, Powers	50	2	2	0	0	0	0
Jay	Shrack/Ran-Del Co- Alliance, Parker City	0	0		2		3	0
Jennings	Bauerle/SEPAC, Butlerville	0	0	0	0	0	0	0
Knox	Clinkenbeard/Ceres Solutions, Edwardsport	0	3	0	0	0	0	0
Knox	Edwards/Ceres Solutions, Fritchton	0	0	0	0	0	0	0
Kosciusko	Jenkins/Ceres Solutions, Mentone	0	0		35	116	8	6
Lake	Kleine/Rose Acre Farms, Cedar Lake	0	0	1	1	3	1	0
Lake	Moyer/Dekalb Hybrids/Shelby	3	1	5	15	61	13	3
Lake	Moyer/Dekalb Hybrids/Schneider	1	1	10	26	227	41	5
LaPorte	Rocke/Agri-Mgmt. Solutions, Wanatah	1	0	14	75	118	46	2
Miami	Early/Pioneer Hybrids, Macy	0	2	4	33	92	26	6
Montgomery	Delp/Nicholson Consulting, Waynetown	0	0	0	0	1	0	0
Newton	Moyer/Dekalb Hybrids, Lake Village	0	0	2	17	92	22	8
Perry	Lorenz/Lorenz Farms, Rome 1	0	0	0	0	0	0	0
Perry	Lorenz/Lorenz Farms, Rome 2	0	0	0	0	0	0	0
Porter Posev	Boyer/PPAC, Wanatah Schmitz/Purdue CCSI,	0	0	0	6 0	5	4	5
Posev	Blairsville Schmitz/Purdue CCSI,	0	0	0	0	0	0	0
Pulaski	Cynthiana Capouch Chaffins/M&R	0	0	3	21	11	31	2
Pulaski	Ag Services, Medaryville Leman/Ceres Solutions,	0	0	0	46	52	10	
Pulaski	Nagel/Ceres Solutions,	0	0	0	134	431	53	11
Putnam	Nicholson/Nicholson	1	0	1	0	1	0	1
Randolph	Rover/DPAC Farmland	0	2	1	0	0	0	0
Rush	Schelle/Falmouth Farm	0	0	0	0	0	0	0
Scott	Tom Springstun/Scott	0	1	0	0	0	0	0
Shelby	Fisher/Shelby County	0	0	0	0	0	0	0
St. Joseph	Carbiener, Breman	0			32			3
Starke	Capouch Chaffins/M&R Ag Services, Monterey	0	0		47	46	10	6
Starke	Capouch Chaffins/M&R Ag Services, San Pierre	0	0			73	3	0
Sullivan	McCullough/Ceres Solutions, Farmersburg	0	0	0	0	0	0	0
Sullivan	McCullough/Ceres Solutions, Dugger	0	0	0	0	0	0	0
Tippecanoe	Bower/Ceres Solutions, Lafayette	10	48	42	36	3	0	0
Tippecanoe	Obermeyer/Purdue Entomology, ACRE	0	0	0	2	2	3	0
Tippecanoe	Vickrey/Advanced Agrilytics, Trap 1	1	1	0	6	5	0	0
Tippecanoe	Vickrey/Advanced Agrilytics, Trap 2	0	0	0	1	0	0	0
Tippecanoe	Westerfeld/Bayer	0	0	0	2	1	0	0
Tipton	Kesearch, W. Lafayette Campbell/Beck's Hybrids	0	0	0	0	3	0	0
Vigo	Lynch/Ceres Solutions,	0	1	0	0	0	0	0

Whitley	Emley/NEPAC/Schrader	0	0	2	1	9	2	2
Whitley	Emley/NEPAC/Kyler	0	0	1	0	3	5	0

* = Intensive Capture...this occurs when 9 or more moths are caught over a 2-night period

Tar Spot Update In Indiana

(Darcy Telenko)

Tar Spot - We continue to confirm counties with active tar spot. Eighteen counties have been confirmed as of Aug 3, 2023. These counties all had a previous history: Porter, LaPorte, Jasper, Pulaski, Fulton, Marshall, Kosciusko, Benton, Tippecanoe, Carroll, Howard, Tipton, Clinton, Montgomery, Knox, Gibson, and Jennings (Figure 1). Gray colored counties on the map are those we have found tar spot in previous years. In some fields tar spot is beginning to move up in the canopy and increased severity on the leaves. Please keep scouting your fields and make and informed decision. Our research has found that a well-timed fungicide application up to R3 will help reduced disease and protect yield.



Figure 1. Map of tar spot counties. Gray = found previously, Yellow = found in current 2023 season. Map updated on Aug 3, 2023.

We went back and pulled the maps from August 1 2020, 2021, 2022 and 2023 to compare the different seasons and where we were in Indiana in regards to finding tar spot. See figure 2. As 2023 is progressing we are currently finding more fields with tar spot at this point in the season then we had last year and it looks similar to 2021. If you have had issues with tar spot on your farm in the past it is time to get really keep an eye out to see if the disease has started to make an informed decision if a fungicide may be needed.

In addition to tar spot, I have also seen other common diseases including gray leaf spot, northern corn leaf blight and some common rust. For more information on tar spot management please refer to my previous articles and see links below.



Figure 2. Tar spot tracking in Indiana on August 1 for 2020, 2021, 2022 and 2023 growing season.

Please help us track foliar disease in Indiana for both corn and soybean. I am particularly interested in those counties we have yet to scout or receive a sample. Even if your county is yellow, I am also interested in learning if you have tar spot or southern rust on your farm and what you might be seeing. Please feel free to contact me

(dtelenko@purdue.edu) or the PPDL (ppdl-samples@purdue.edu) with any major disease issues you may have this season.

Resources:

- Fungicide efficacy table for corn diseases: https://cropprotectionnetwork.org/publications/fungicide-efficac y-for-control-of-corn-diseases
- Fungicide efficacy table for soybean foliar diseases: https://cropprotectionnetwork.org/publications/fungicide-efficac y-for-control-of-soybean-foliar-diseases
- Purdue Plant Pest Diagnostic Lab https://ag.purdue.edu/department/btny/ppdl/
- Purdue Field Crop Pathology Website with current maps https://indianafieldcroppathology.com/

An Eerie Poisonous Fog

(Keith Johnson)

In a month, some livestock producers will be chopping whole-plant corn that will be placed in an anaerobic environment so fermentation can occur. The fermented corn is called silage. During the ensiling process, toxic gasses of nitrogen dioxide (NO_2) and nitrogen tetroxide (N_{24}) are produced when nitric oxide comes in contact with oxygen. Nitrates that have not been converted to true protein are the source of nitrogen oxides. Nitrates accumulate in plants when drought and/or when excess nitrogen is present in the soil.



The orange, heavy, and poisonous gas, nitrogen dioxide, flows out the end of a silo bag filled with whole-plant corn chopped and bagged the previous day. The end of the silo bag was not adequately sealed with a lime pile. (*Photo Credits: Keith Johnson, Purdue University Extension Forage Specialist and Brad Shelton, Superintendent, Feldun-Purdue Agricultural Center*)

Nitric oxide is colorless and nitrogen dioxide is reddish brown. These gases have caused permanent lung damage in people; and have killed both livestock and humans. Greatest concern is the first few days after putting the chopped forage in the silo structure or bag. However, care should be taken for ten days after packing occurs. These silo gases float down a tower silo chute and into a barn or confined area. Whenever toxic gases are a possibility, care must be taken to protect both humans and animals. Make sure that enclosed areas around the feed storage area (feed rooms, silos, and animal pens) are well ventilated and safe before entry. Doors and windows to enclosed areas should be opened, and silo blowers should run before any attempt is made to enter a tower silo. If there is any doubt about toxic gases being present, a properly fitted oxygen mask should be used in and around the feed storage area.

After fermentation is complete after four weeks, it would be advised to request a nitrate test from a certified laboratory

(www.foragetesting.org), especially if the corn was growing in a droughty environment or where excess nitrogen was applied. Nutrition analyses used to balance rations should also be requested. Fermentation does reduce the initial nitrate concentration at harvest. If nitrate concentration is a concern as noted by test results, seek the advice of a trained nutritionist to utilize other feedstuffs to blend with the silage to meet livestock performance goals and that will make the ration safe to feed.

The concern of toxic gasses emphasizes the importance of being safe and healthy with all farming tasks.

Much of the text is from Purdue Extension publication ID-528-W, "Beef Management Practices When Forages are in Short Supply Because of Drought". https://www.extension.purdue.edu/extmedia/ID/ID-528-W.pdf

Drought Continues Gradual Improvement With No Hazards Of Concern In Near Future (Beth Hall)

Recent precipitation events have allowed periodic rainfall to hit most places across Indiana. Over the last few weeks, at least half an inch of rain has fallen with some areas in central and northern Indiana receiving two to four inches! This has meant that Abnormally Dry (D0) and Moderate Drought (D1) conditions have not be intensifying with some areas actually showing improving conditions according to the U. S. Drought Monitor (USDM; Figure 1). Even the seasonal drought outlook is predicting drought conditions to continue to improve between now and the end of September (U.S. Drought Monitor categories of D1 through D4) - which is great news! The forecast of rain over the next week, however, is not predicting high amounts across most of the state. Eastern and southeastern Indiana may miss out on much of these events through next Thursday. However, current models are favoring another storm system to move in from the northwest by the end of next week. If that holds true, then most of Indiana should be spared from too many drought concerns. Climate outlooks are favoring above-normal precipitation over the next several weeks, though the probabilities are relatively low. It is still hurricane season, however. While Indiana is not within the typical track of hurricanes, several have known to enter the Midwest region as remnants of hurricanes. These can still bring a lot of rainfall over a short period of time. While none of these storms are anticipated to impact Indiana anytime soon, do not rule these out for the rest of the season. Due to the nature of these storm events, it is often difficult for climate outlooks to pick up these signals beyond a few weeks.



Figure 1. U.S. Drought Monitor status for Indiana based upon conditions through Tuesday, August 1, 2023.

Can you believe that the July temperature averages in Indiana were near normal? The month ended with such above-normal temperatures that our memories soon forget how mild the month actually was, otherwise. The other explanation for how mild the temperatures were last month had to do with the use of the 1991-2020 period for comparison. That 30-year period was already breaking temperature records, so now our "hot" months are being considered rather typical when considering climatological normal (i.e., 30-year) periods. Temperatures are expected to stay near normal over the next several weeks, if not for the rest of August. However, the seasonal outlook (that includes August through October) is slightly favoring above-normal temperatures for Indiana.

Modified accumulated growing degree days continue to lag behind the recent 30-year average for April 15^{th} through August 2^{nd} (Figures 2 and 3).



 1200
 1400
 1600
 1800
 2000
 2200

 Figure 2. Modified growing degree day (50°F / 86°F) accumulation from April 15-August 2, 2023.
 August 2, 2023.



Figure 3. Modified growing degree day (50°F / 86°F) accumulation from April 15-August 2, 2023, represented as the departure from the 1991-2020 climatological average.

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