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Insects, Mites, and Nematodes

INSECTS, MITES, & NEMATODES

Western Bean Cutworm; Some Unpleasant Surprises in Northern Indiana Fields – *(Christian Krupke and John Obermeyer) -*

- Moth flight and egg laying is nearly complete.
- By now, most larvae have entered the ear, making control very difficult.
- Consider the factors listed below before attempting treatments.

Pest managers in northern Indiana counties have been tracking this pest throughout the moth flight and egg laying period. Some are frustrated because egg masses found were well below the 5% plants infested threshold, but are now finding larvae in, or around, the ear. Remember, although there is a definite peak in trap catch, western bean cutworm moth flight occurs over multiple weeks (6 or more). For some fields, this adds up to a constant barrage of new eggs. During that period, egg mass scouting **must** occur at least weekly, shorter intervals being better. Female moths do not lay eggs at random and use many factors (e.g., color, growth stage, architecture, etc.) to choose a plant/plants to lay eggs. This results in a clumped distribution in a field. Visiting multiple locations throughout a field increases the chance of finding one of these “clumps”. Consider that each egg mass may produce 20-50 larvae. Even with 70-80% larval mortality from abiotic and biotic factors, the survivors will spread out to neighboring plants. In other words, 1

egg mass equals multiple larvae.

Since we are past the point where we can easily contact and kill newly emerged larvae, the current challenge is to identify fields that are infested, assess the size and location of the larvae, and determine if treatments are still warranted and likely to pay off. In at least ten different areas of the field, carefully examine the ear and ear zone of 10 consecutive plants. Include the secondary ear in your examination. Determine the percentage of plants infested and the size and activity of the larvae. This will require peeling back the husk over the ear tip to look for a worm and/or frass and/or damage. Also carefully pull back leaves and leaf sheaths adjacent to the ear. Again, you may find larvae, and entrance holes into the side of the ear. Smaller larvae, <1", are more active moving in and out of the ear. Larger larvae generally remain in the ear and feed on kernels. As temperatures increase, the larvae are more likely to remain inside the ear.

Treatment for field corn with the majority of larvae in the ear is not likely to provide strong results. Our foliar sprays are all contact/stomach insecticides and a larva in the ear isn't contacting any outside surfaces - which is where all the insecticide residue will be. In the past, some folks that treated when larvae were in the early stages of entering the ear were satisfied with the results (but follow the Restricted Entry Interval that is on the product's label). Consider the following before treating:

- Control in corn that has already pollinated, will likely be less than 50%.
- 1 larva/ear at dent stage corn is approximately equal to a 4 bushel/acre loss (Nebraska and Iowa data).
- Ear damage opens the door for molds, a concern in food grade corn.
- Larvae in the ear will NOT be controlled. Larvae that are still exposed in leaf sheaths or axils, or that exit the ear, can be controlled. Larvae less than an inch are the most likely to exit the ear.
- Larvae become less mobile as temperatures increase.
- Increased carrier volume will improve the canopy penetration into the ear zone.
- Insecticides will provide about a week of efficacy at best. Rain, high heat and even sunshine will reduce longevity of the residues on plants.
- Pre-Harvest intervals for insecticides, on the label, must be followed (most are 21 to 30 days).
- Synthetic pyrethroids are the recommended insecticides. There is some misconception that organophosphate insecticides (e.g., Lorsban, Lannate) will give "fumigant" activity in the canopy. They do "stink" more than pyrethroids, but that is NOT added insecticidal activity. Both organophosphates and synthetic pyrethroids are CONTACT insecticides. The smell doesn't hurt the insects, they must crawl across residues to receive toxic doses.
- Approved insecticides, their rates, and pre-harvest intervals can be viewed at: **https://extension.entm.purdue.edu/publications/E-219/E-219.html** look under western bean cutworm.

Gently pulling back these silks revealed WBC frass, with the larva found at the ear tip.

Small WBC larva and damage revealed after pulling the shucks beyond the ear tip.

WBC larva outside the ear and exit hole.

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2017 Western Bean Cutworm Pheromone Trap Report – *(John Obermeyer)* -

		WBC Trapped					

County	Cooperator	Week 1 6/22/17 - 6/28/17	Week 2 6/29/17 - 7/5/17	Week 3 7/6/17 - 7/12/17	Week 4 7/13/17 - 7/19/17	Week 5 7/20/17 - 7/26/17	Week 6 7/27/17-8/2/17
Adams	Kaminsky/New Era Ag	0	6	4	0	5	1
Adams	Roe/Mercer Landmark	0	8	6	1	0	4
Allen	Anderson/Syngenta Seed	0	4	26	34	14	1
Allen	Gynn/Southwind Farms	0	8	13	15	19	
Allen	Kneubuhler/G&K Concepts/Harlan	0	4	13	4	0	1
Allen	Kneubuhler/G&K Concepts/Koch	0	10	0	4	0	5
Bartholomew	Bush/Pioneer Hybrids	0	0	0	0	0	1
Clay	Bower/Ceres Solutions/Clay City		0	0	0		
Clay	Bower/Ceres Solutions/Brazil		0	0	0		
Clinton	Emanuel/Boone Co. CES	1	1	1	0	1	5
Clinton	Foster/Purdue Entomology	0	0	2	1	1	0
DeKalb	Hoffman/ATA Solutions			87	174	167	18
Dubois	Eck/Purdue CES	0	1	0	0	1	1
Elkhart	Kauffman/Crop Tech Inc.		35	156	150	95	3
Fayette	Schelle/Falmouth Farm Supply Inc.	1	1	0	0	0	
Fountain	Mroczkiewicz/Syngenta	41	31	14	4	0	1
Fulton	Jenkins/N. Central Coop/Talma	379	385	167	76	5	0
Fulton	Ranstead/N. Central Coop/Rochester			309	46	15	3
Gibson	Schmitz/Gibson Co. CES	0	0	2	0	0	2
Hamilton	Campbell/Beck's Hybrids	3	2	2	2	0	0
Hendricks	Nicholson/Nicholson Consulting	0	1	1	1	2	0
Jasper	Overstreet/Purdue CES	438	410	304	237	103	0
Jasper	Ritter/Brodbeck Seeds	302	171	124	97	14	
Jay	Boyer/Davis PAC	5	1	0	3	1	2
Jay	Shrack/Ran Del Agri Services	0	0	0	1		
Jay	Temple/Jay County CES/Pennville	0	1	3	2	0	2
Jay	Temple/Jay County CES/Redkey	3	4	7	2	0	1
Jennings	Bauerle/SEPAC	0	0	0	1	0	0
Knox	Bower/Ceres Solutions/Vincennes		0	0	0		
Knox	Bower/Ceres Solutions/Freelandville		0	0			
Kosciusko	Klotz/Etna Green	75	112	92	46		19
Lake	Kleine/Kleine Farms	0	4	41	11	0	19

Lake	Moyer/Dekalb Hybrids, Shelby	157	108	63	16	20	7
Lake	Moyer/Dekalb Hybrids, Schneider	246	151	101	93	63	1
LaPorte	Rocke/Agri-Mgmt Solutions, Wanatah	120	122	321	138	10	18
LaPorte	Smith/Co-Alliance/LaPorte	0	11	29	22	7	7
LaPorte	Smith/Co-Alliance/Fish Lake	6	20	109	107	115	72
LaPorte	Smith/Co-Alliance/Union Mills	15	19	122	100	40	24
LaPorte	Smith/Co-Alliance/LaCrosse	35	149	337	112	17	9
Marshall	Harrell/Harrell Ag Services		4	118	149	6	0
Marshall	Klotz/SR 10 & SR 331	29	81	130	90	13	2
Marshall	Miller/North Central Coop			48	43	10	
Miami	Early/Pioneer Hybrids	189	216	140	154	9	3
Newton	Moyer/Dekalb Hybrids, Lake Village	16	139	262	193	32	9
Porter	Leuck/PPAC	11	17	335	287	68	4
Pulaski	Capouch/M&R Ag Services	42	49	94	50	20	4
Pulaski	Leman/North Central Coop	4	22	34			
Putnam	Nicholson/Nicholson Consulting	0	2	0			
Randolph	Boyer/DPAC	2	2	3	0	4	0
Rush	Schelle/Falmouth Farm Supply Inc.		0	0	0	0	
Shelby	Fisher/Shelby Co. Co-Op	0	0	0	0	0	1
Shelby	Simpson/Simpson Farms	4	5	2	0	0	0
Starke	Capouch/M&R Ag Services	0	184	246	10	7	2
Starke	David Wickert/Wickert Consulting	5	28	21	10	4	2
Starke	Larry Wickert/Wickert Consulting	136	292	185	16	4	8
St. Joseph	Barry/Helena	3	28	108	56	26	5
St. Joseph	Gary Battles	1	12	16	16	10	0
St. Joseph	Carbiener/Union Twp.	0	11	50	19	7	0
St. Joseph	Smith/Co-Alliance/Granger	7	46	87	69	95	95
St. Joseph	Smith/Co-Alliance/New Carlisle	0	3	69	93	109	100
Sullivan	Bower/Ceres Solutions/Farmersburg		0	0	0		
Tippecanoe	Bower/Ceres Solutions/Sullivan		0	8	0		
Tippecanoe	Bower/Ceres Solutions/Lafayette		15	25	24		
Tippecanoe	Nagel/Ceres Solutions	1	1	6	1	0	0
Tippecanoe	Obermeyer/Purdue Entomology	0	0	0	0	0	0
Tippecanoe	Westerfeld/Monsanto	2	3	0	0	2	4
Tipton	Campbell/Beck's Hybrids	0	2	0	0	0	0

Vermillion	Bower/Ceres Solutions/Clinton		0	0	0		
Wabash	Enyeart/North Central Coop	1	10	15		4	
Whitley	Richards/NEPAC	23	70	39	13	5	1
Whitley	Richards/NEPAC			182	101	23	6

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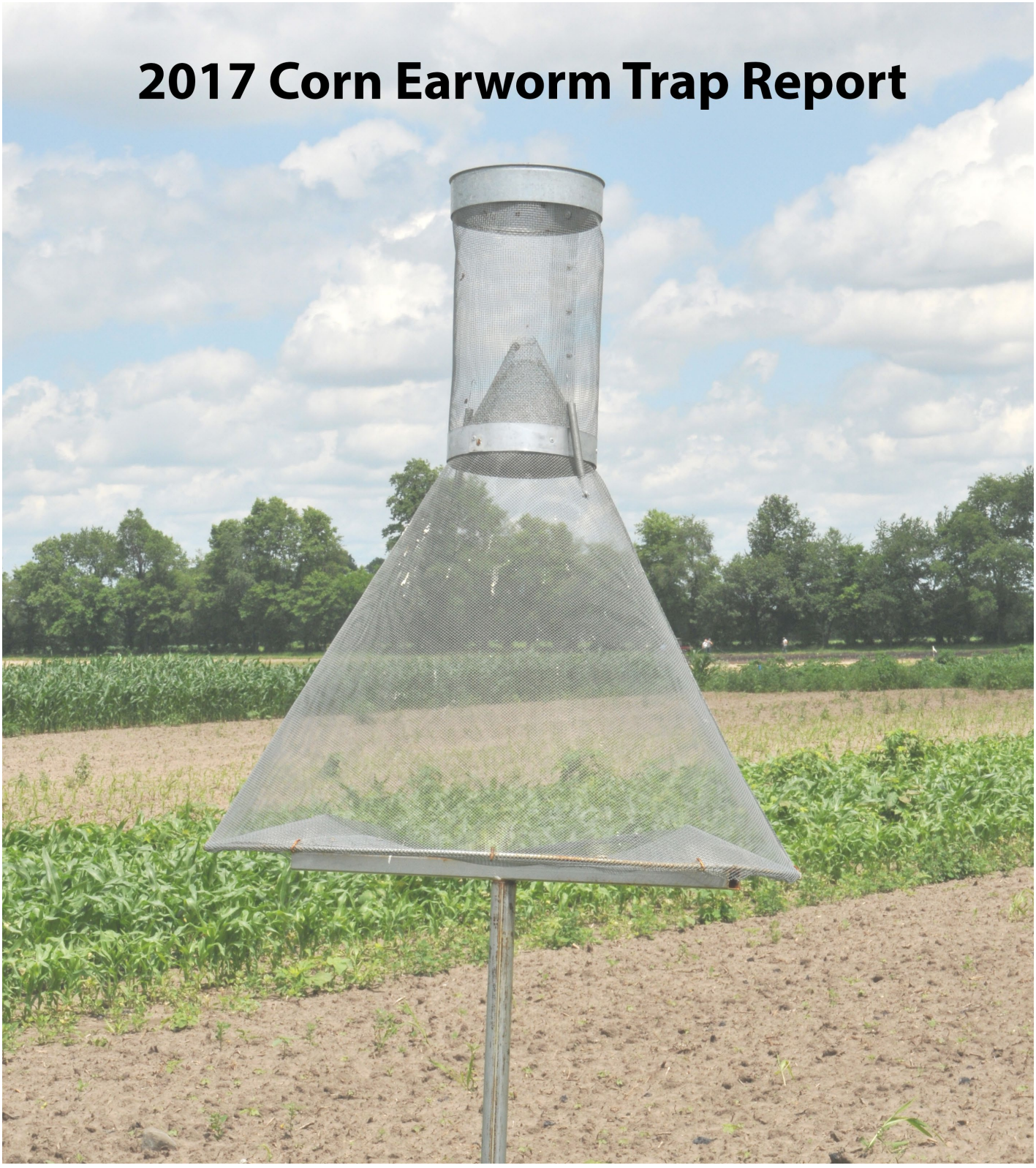
2017 Corn Earworm Pheromone Trap Report – *(John Obermeyer)* -



Corn Earworm Trap Report

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Early August Weed Management Update – *(Bill Johnson and Joe Ikley)* -

Waterhemp – If you've struggled to control waterhemp with glyphosate, PPO inhibitors, or both, you most likely have a resistant weed population. To confirm resistance, go to the Purdue PPDL website and look for the form to submit a sample for herbicide resistance testing. At this time of the season, we are mostly interested in reducing the amount of seed produced by this weed. If you can find crews willing to walk fields and pull plants, you'll probably be money ahead in the long run. Planning for next year, assume you will need to go after this weed with a diverse herbicide program, Full rates of residual herbicides, possibly incorporating tillage back into your weed management plan.

Marestail - It's been a difficult year for marestail control as well. The wet cool weather during spring, and frequent rainfall events during the summer have hampered our ability to spray in a timely manner. Inevitably the folks that have had fewer problems with marestail have utilized an aggressive burn down program that includes both fall and spring applied herbicides. Now is the time to start planning for fall herbicide treatments on no-till acres. For marestail control with fall treatments, simply using something like 2,4-D plus dicamba is very effective at controlling the fall emerging plants. If you have an early harvest and need a little bit of residual in the fall, a couple ounces of metribuzin with the 2,4-D + dicamba can help.

Dicamba – It has been in a couple of weeks since our last article and we continue to get a pretty steady flow of suspected drift samples into the clinic and drift complaints turned into the Office of the Indiana State Chemist. If you're interested in the exact number of drift complaints and counties where symptomatic vegetation has been sent to the clinic, go to the office of the Indiana State chemist website. The complaints filed and sample maps are updated fairly frequently. It is still somewhat unclear at this time what the single most important mechanism of off-site movement from site of application to off-target vegetation. It appears it's a combination of physical drift, particle and vapor drift in temperature inversion conditions, and there are many instances where buffer distances have not been followed. EPA, State departments of Ag (or the OISC in Indiana), academics, and the herbicide manufacturers are all sifting through this information to try to make recommendations for label changes for 2018. At this point it is unlikely the regulatory agencies will be able to process all of the drift complaints and make label changes for this fall. We do believe however, that label changes regarding application conditions and parameters will take place in many states for the 2018 growing season.

Pasture Weed Control – This is the time of year when many folks get out to scout their pastures and we get questions about controlling a variety of different weeds in pasture

settings. In most cases mid-summer treatments are usually not as effective as fall treatments since we are usually in a dry period this time of year, and plants are not actively growing. Many herbaceous perennial plants can be effectively controlled if they're sprayed just prior to frost events that kill off the top growth. Woody plants on the other hand can be effectively controlled by cut stump treatments, which can be done almost any time of the year. For more information on how to control specific weeds in pastures, consult WS 16, the Weed Control Guide for Ohio, Indiana, and Illinois for specific information on controlling problematic weeds in pasture settings. There are a number of efficacy tables that show the most effective herbicides to use, and a section in the guide with a short narrative on some of the most problematic weeds that can be very helpful in planning control strategies.

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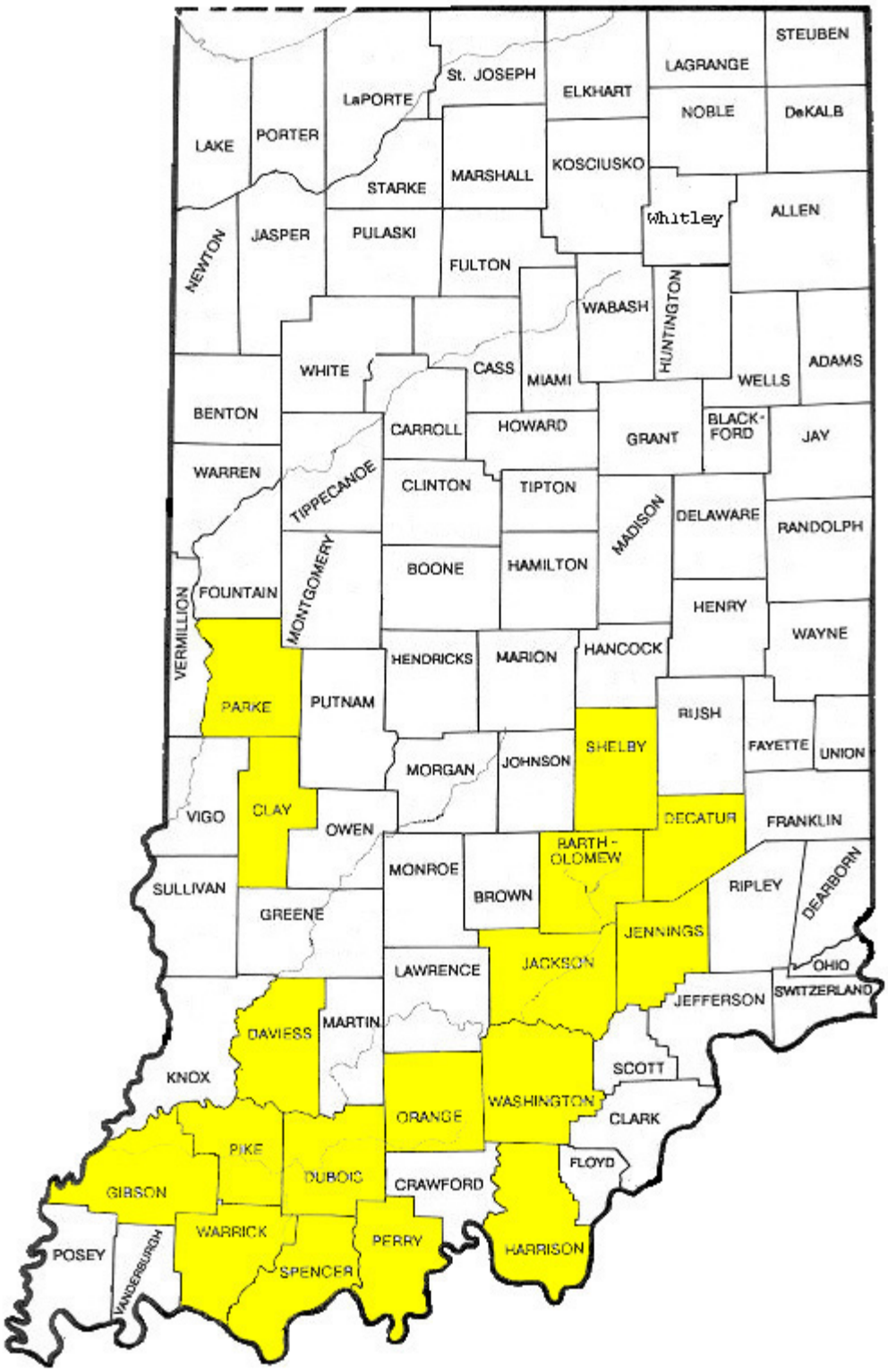
Updated Map of Confirmed Indiana Counties with Southern Rust – *(Gail Ruhl and Tom Creswell) -*

The following map is continually being updated as samples are received and analyzed by Purdue's Plant and Pest Diagnostic Lab. See the links below for sample submission and more information on southern rust.



Counties confirmed for the presence of southern rust, August 3, source P&PDL and iPiPE .

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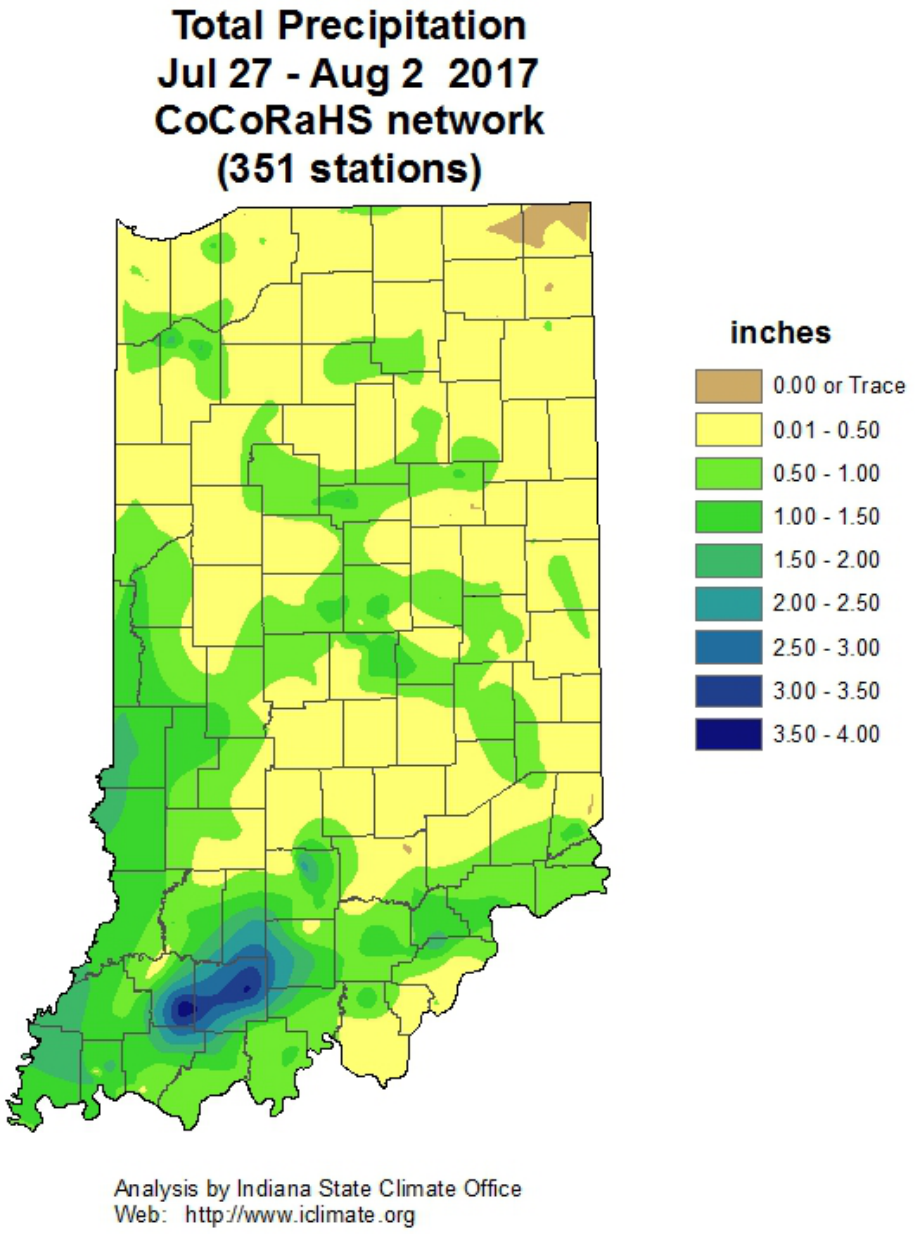
WEATHER UPDATE

Precipitation


Total Precipitation
Jul 27 - Aug 2 2017
CoCoRaHS network
(351 stations)
inches
0.00 or Trace
0.01 - 0.50
0.50 - 1.00
1.00 - 1.50
1.50 - 2.00
2.00 - 2.50
2.50 - 3.00
3.00 - 3.50
3.50 - 4.00
Analysis by Indiana State Climate Office
Web: http://www.iclimate.org

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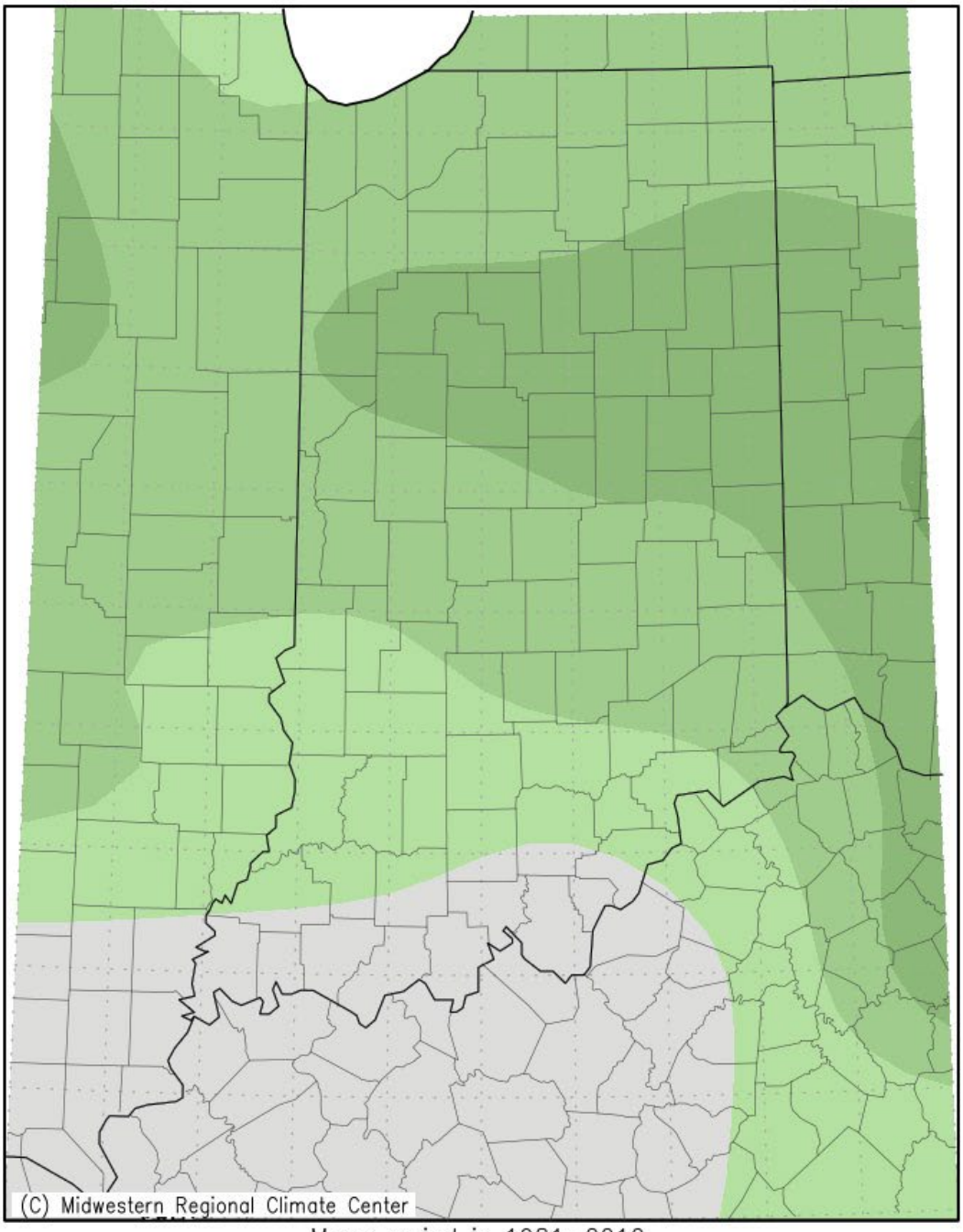
Temperature

Average Temperature (°F): Departure from Mean
July 25, 2017 to July 31, 2017



Mean period is 1981–2010.

Indiana State Climate Office www.iclimate.org
Purdue University, West Lafayette, Indiana
email: iclimate@purdue.edu

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THANKS FOR READING

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