
# IN THIS ISSUE

Issue 8, May 18, 2017 • USDA-NIFA Extension IPM Grant

## Insects, Mites, and Nematodes

## Weeds



## Plant Diseases



## Weather Update




## A Busy Black Cutworm Catching Season – *(John Obermeyer and Christian Krupke)* -

- Thanks to the pheromone trap cooperators!
- Near record number of moths caught this spring.
- According to heat unit accumulations, NOW is the time to be scouting!

Every spring, dozens of cooperators throughout the state put forth considerable effort in trapping for the arrival and intensity of black cutworm moths. This year, especially, they were very busy showing off their counting skills! I'm personally indebted to these faithful bug counters, hoping you also appreciate their efforts as reported in the "Black

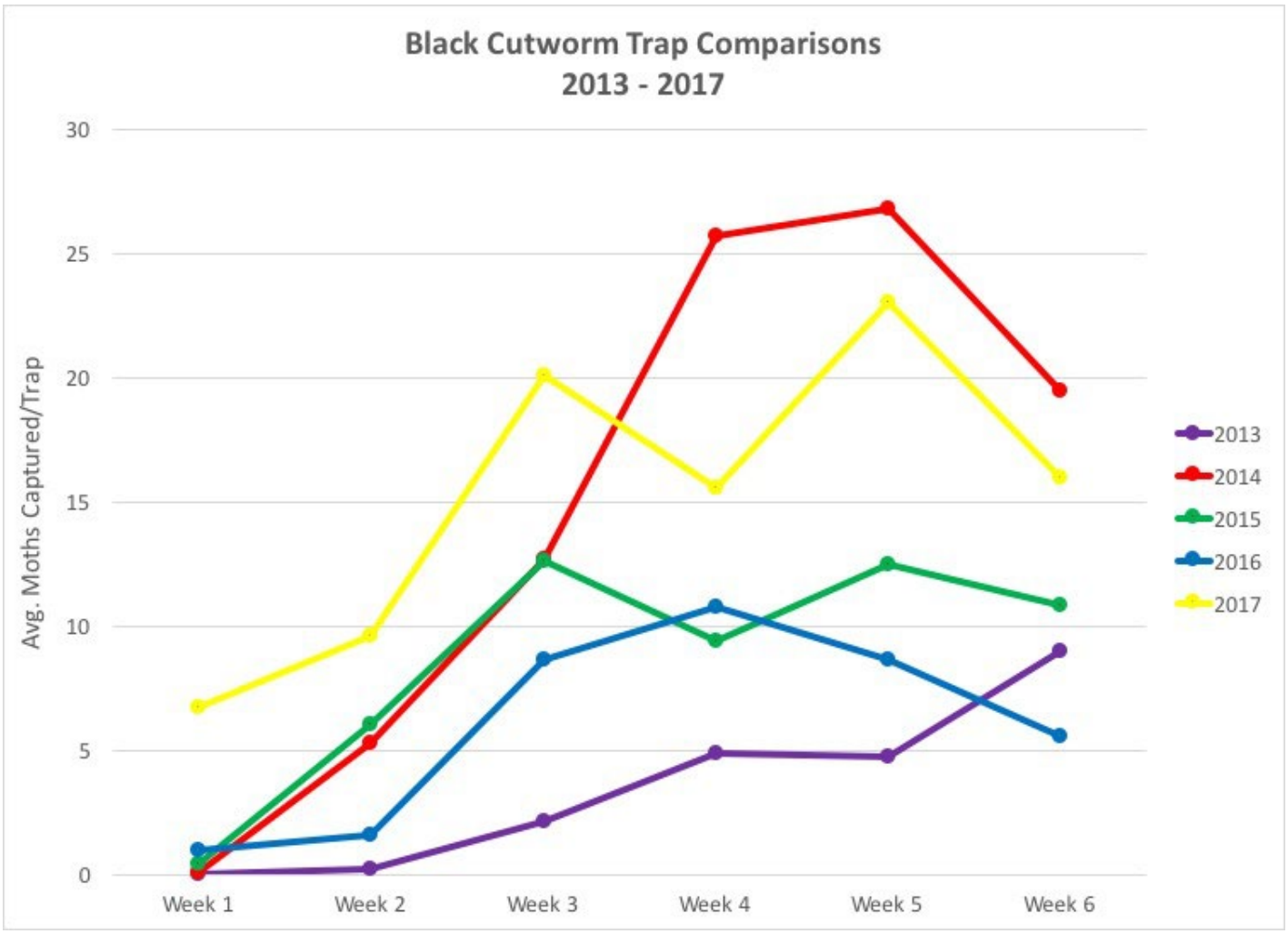
Cutworm Adult Pheromone Trap Report." If you recognize a name or two on this list of reporters, by county, please thank them!

As you can see from the past year's trap comparison graph, 2017 black cutworm moth catches started at an incredible pace. With this and a larval development model (see the accompanying "Black Cutworm Development Map") it allows us to alert pest managers to be scouting emerging corn.

NOW IS THE TIME TO SCOUT!!!

Scout high-risk fields for cutworm corn leaf feeding and/or cutting. Don't be overly reliant on seed-applied insecticides or traited corn to protect your stand, they will not withstand severe pressure. Fields yet to be planted to corn are especially prone to damage, as the cutworms are likely established and feeding on weedy growth as you read this.

Happy Scouting!




*Black cutworm moth catch comparison.*

back to top

# Black Cutworm Adult Pheromone Trap Report

| County | Cooperator | BCW Trapped | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Wk 1 3/23/17-3/29/17 | Wk 2 3/30/17-4/5/17 | Wk 3 4/5/17-4/12/17 | Wk 4 4/13/17-4/19/17 | Wk 5 4/20/17-4/26/17 | Wk 6 4/27/17-5/3/17 | Wk 7 5/4/17-5/10/17 | Wk 8 5/11/17-5/17/17 |
| Adams | Kaminsky/New Era Ag | | | 13 | 35 | 61* | 48* | 30* | 21 |
| Adams | Roe/Mercer Landmark | 11 | 17* | 7 | 42 | 28* | 35* | 40* | 54* |
| Allen | Anderson/Syngenta Seed | | 0 | | | | | 12 | 1 |
| Allen | Gynn/Southwind Farms | 2 | 1 | 0 | 15 | 21* | 52* | 50* | 46* |
| Allen | Kneubuhler/G&K Concepts - Trap 1 | | 0 | 19* | 36 | 60* | 41* | | 24 |
| Allen | Kneubuhler/G&K Concepts - Trap 2 | | 9 | 2 | | 0 | 10 | | 1 |
| Bartholomew | Bush/Pioneer Hybrids | 1 | 13* | 13 | 17 | 28* | 36* | 38* | 4 |
| Clay | Bower/Ceres Solutions - Clay City | 0 | 0 | 7 | 4 | 2 | 4 | 0 | 0 |
| Clay | Bower/Ceres Solutions - Bowling Green | 0 | 0 | 0 | | 1 | 1 | 0 | 0 |
| Clay | Bower/Ceres Solutions - Brazil | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| Clinton | Emanuel/Boone Co. CES | 8 | 9 | 6 | 10 | 5 | 8 | 14* | 3 |
| DeKalb | Hoffman/ATA Solutions | 0 | 0 | 0 | 1 | 0 | 3 | 3 | 1 |
| Dubois | Eck/Purdue CES | 14 | 28* | 41* | 4 | 4 | 40* | 16 | 6 |
| Elkhart | Kauffman/Crop Tech Inc. | 0 | 0 | 6 | 16 | 28* | 36* | 20* | |
| Fayette | Schelle/Falmouth Farm Supply Inc. | 5 | 33* | 5 | | 3 | 10 | 14 | |
| Fountain | Mroczkiewicz/Syngenta | 7 | 18* | 31* | 93* | 43* | 44* | 50* | 22* |
| Fulton | Jenkins/N. Central Coop - Talma | 0 | 5 | 10 | 13 | 6 | 39* | 5 | 7 |
| Fulton | Ranstead/NCC Coop - Rochester | 0 | 0 | 0 | 3 | 6 | 11 | 1 | 1 |
| Gibson | Schmitz/Gibson Co. CES | | | | 0 | 0 | 0 | 1 | 0 |
| Hamilton | Campbell/Beck's Hybrids | 14 | 13 | 18 | 55* | 30* | 45* | 5 | 20 |
| Hamilton | Truster/Reynolds Farm Equipment | | 1 | | 1 | 2 | 4 | 0 | |
| Hendricks | Nicholson/Nicholson Consulting | 0 | 3 | 4 | 11 | 17* | 6 | 98* | 6 |
| Jasper | Overstreet/Jasper Purdue CES | 2 | 5 | 0 | 5 | 10 | 12 | 20 | 25 |
| Jasper | Ritter/Brodbeck Seeds | 1 | 3 | 10 | 32 | 28* | 10 | 7 | |
| Jay | Boyer/Davis PAC | | 3 | 14 | 19 | 19 | 43* | 28* | 34* |
| Jay | Shrack/Ran-Del Agri Services | 1 | 3 | 5 | 9 | 8 | 9 | 16 | 21* |
| Jay | Temple/Jay County CES | | | | | | | | |

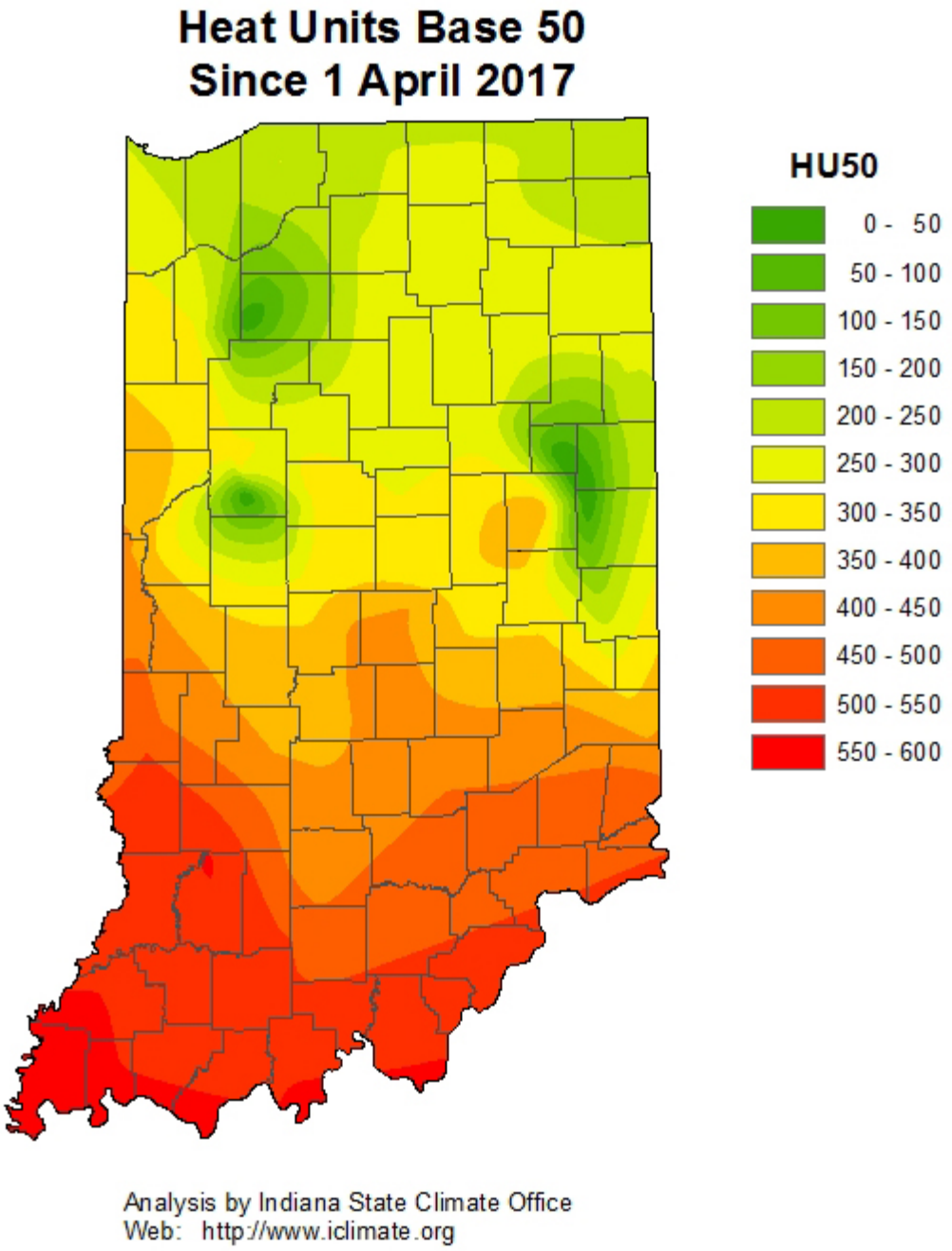
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Jennings | Bauerle/SEPAC | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Knox | Bower/Ceres Solutions - Freelandville | 0 | 0 | 0 | 13* | 4 | 3 | 0 | 0 |
| Knox | Bower/Ceres Solutions - Vincennes | 0 | 0 | 0 | | 2 | 2 | 4 | 5 |
| Kosciusko | Klotz/Etna Green | 0 | 0 | 4 | 9 | 5 | 41* | 21* | 3 |
| Lake | Kleine/Kleine Farms | 4 | 16* | 60* | 83* | 90* | 62* | 69* | 123* |
| Lake | Moyer/Dekalb Hybrids - Shelby | 5 | 5 | 20* | 27 | 6 | 5 | 7 | 2 |
| Lake | Moyer/Dekalb Hybrids - Schneider | 2 | 5 | 5 | 12 | 20 | 12 | 14 | 14 |
| LaPorte | Rocke/Agri-Mgmt Solutions | | | 4 | 41 | 9 | 38* | | 13 |
| Madison | Truster/Reynolds Farm Equipment | | 0 | | 0 | 0 | 0 | 0 | |
| Marshall | Harrell/Harrell Ag Services | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marshall | Klotz/SR 10 & SR 331 | 0 | 0 | 0 | 8 | 9 | 20* | 7 | 9 |
| Marshall | Miller/North Central Coop | 0 | 0 | 0 | 2 | 1 | 9 | 5 | 4 |
| Miami | Early/Pioneer Hybrids | 0 | 0 | 0 | 3 | 2 | 3 | 0 | 0 |
| Newton | Moyer/Dekalb Hybrids - Lake Village | 2 | 6 | 2 | 8 | 8 | 21 | 10 | 19* |
| Porter | Leuck/PPAC | 5 | 3 | 18 | 25 | 8 | 22 | 6 | 2 |
| Pulaski | Capouch/M&R Ag Services | 0 | 0 | 1 | 10 | 10 | 8 | 2 | 1 |
| Pulaski | Leman/North Central Coop | | 0 | 10 | 21 | 30* | 23 | 1 | 3 |
| Putnam | Nicholson/Nicholson Consulting | | 2 | 6 | 2 | 8 | 2 | 4 | 3 |
| Randolph | Boyer/DPAC | | 1 | 0 | 1 | 2 | 4 | 1 | 1 |
| Rush | Schelle/Falmouth Farm Supply Inc. | | 6 | 10 | 1 | 3 | 17* | 0 | |
| Shelby | Fisher/Shelby County Co-op | 2 | 3 | 5 | 5 | 0 | 10 | | 6 |
| Shelby | Simpson/Simpson Farms | 7 | 49* | 41* | 67* | 37 | 41* | 27* | 27* |
| Starke | Capouch/M&R Ag Services | 0 | 0 | 6 | 28 | 21* | 22* | 10 | 8 |
| Starke | Wickert/Wickert Consulting - California Twnshp | 1 | 1 | 3 | 4 | 11 | 37* | 18* | 18* |
| Starke | Wickert/Wickert Consulting - Railroad Twnshp | 0 | 0 | 0 | 0 | 9 | 17* | 11 | 8 |
| St. Joseph | Barry/Helena | | | 1 | 3 | 15* | 20* | 7 | 5 |
| Sullivan | Bower/Ceres Solutions - Farmersburg | 0 | 1 | 2 | 14 | 18* | 6 | 1 | 2 |
| Sullivan | Bower/Ceres Solutions - Sullivan | 6 | 21* | 14* | 16* | 6 | 7 | 4 | 5 |
| Tippecanoe | Bower/Ceres Solutions | 0 | 0 | 0 | 7 | 3 | 12* | 9 | 0 |
| Tippecanoe | Westerfield/Monsanto Research Farm | 0 | 0 | 13 | 11 | 16 | 8 | 18* | |
| Tippecanoe | Nagel/Ceres Solutions | 30 | 47* | 44* | 89 | 14 | 8 | 16 | 21 |
| Tippecanoe | Obermeyer/Purdue Entomology | 2 | 5 | 11 | 5 | 20* | 9 | 11* | 3 |
| Tipton | Campbell/Beck's Hybrids | 10 | 17 | 11 | 73* | 33* | 119* | 8 | 31* |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Vermillion | Bower/Ceres Solutions | | 0 | 0 | | 0 | 0 | 0 | 0 |
| Wabash | Enyeart/North Central Coop | | | | 0 | | | 25 | |
| Whitley | Walker, Richards/NEPAC1 - Main | 10 | 28* | 37* | 81* | 87* | 149* | 90* | 67* |
| Whitley | Walker, Richards/NEPAC2 - Kyler | 3 | 8 | 17* | 36* | 33* | 79* | 45* | 28* |

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

back to top

## Black Cutworm Development Map




back to top

## Armyworm Pheromone Trap Report

| County | Cooperator | Wk 1 | Wk 2 | Wk 3 | Wk 4 | Wk 5 | Wk 6 | Wk 7 | Wk 8 | Wk 9 | Wk 10 | Wk 11 | Wk 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dubois | SIPAC Ag Center | 0 | 0 | 0 | 101 | 193 | 16 | 0 | 3 | | | | |
| Jennings | SEPAC Ag Center | 0 | 1 | 1 | 56 | 57 | 9 | 4 | 32 | 4 | | | |
| Knox | SWPAC Ag Center | 0 | 13 | 26 | 42 | 189 | 57 | 2 | 10 | 20 | | | |
| LaPorte | Pinney Ag Center | 0 | 0 | 3 | 352 | 936 | 382 | 154 | 445 | 750 | | | |
| Lawrence | Feldun Ag Center | 4 | 108 | 216 | 246 | 650 | 348 | 112 | 31 | 40 | | | |
| Randolph | Davis Ag Center | 0 | 29 | 41 | 528 | 1232 | 300 | 72 | 10 | 298 | | | |
| Tippecanoe | Meigs | 0 | 2 | 15 | 107 | 730 | 243 | 98 | 95 | 86 | | | |
| Whitley | NEPAC Ag Center | 0 | 34 | 90 | 537 | 1689 | 1349 | 855 | 665 | 1265 | | | |

Wk 1 = 3/16/17 - 3/22/17; Wk 2 = 3/23/17 - 3/29/17; Wk 3 - 3/30/17 - 4/5/17; Wk 4 - 4/7/18 - 4/12/17; Wk 5 - 4/13/17 - 4/19/17; Wk 6 - 4/ 20/17 - 4/26/17; Wk 7 = 4/27/17 - 5/3/17; Wk 8 = 5/4/17 - 5/10/17; Wk 9 = 5/11/17 - 5/17/17

back to top


## Purdue Offers Herbicide Resistant Weed Screening – *(Joe Ikley, Travis Legleiter and Bill Johnson) -*

The Purdue Weed Science group is again offering herbicide resistance screening for Palmer amaranth, waterhemp, and giant ragweed for the 2017 growing season. The resistance screens include glyphosate (group 9) and ALS-inhibitor (group 2) assays for giant ragweed, as well as glyphosate (group 9) and PPO-inhibitor (group 14) resistance screening for waterhemp and Palmer amaranth. We test for the most common mechanism of PPO-inhibitor resistance in waterhemp and Palmer amaranth.

PLEASE READ THE FINE PRINT: An important point to mention here is that researchers are discovering new mechanisms of resistance to these herbicides. New mechanisms of resistance require us to develop new assays to test for these mechanisms. At the current time we do not have the capability to test for all of the known resistance mechanisms, but we can test for the mechanisms that are currently occurring most frequently in the field. Please be sure to read the submission form and results form closely

when you submit samples and receive results.

Leaf tissue samples can be submitted for molecular DNA analysis that will allow results to be generated within a few weeks of submission. It is important to follow the directions on the submission form for collecting, storing, and shipping leaf tissue samples as this can have a large impact on the accuracy of the results. A video demonstrating the proper sample collection and shipping process can be found below.

Seed samples can also be submitted for analysis of herbicide resistance. This allows us to also screen for glyphosate resistance in giant ragweed. It is also important to follow the directions on the submission form for seed collection from the appropriate number of plants to assure quality results. The seed samples will take several months to return results as plants will need to be grown from seed in the greenhouse.

The submission form with instructions for collection, storage, and shipping can be found at the following link: **https://ag.purdue.edu/btny/weedscience/Documents/HerbicideResistancescreeningform.pdf**. The submission form can also be found on the front page of the Purdue Weed science website: **https://ag.purdue.edu/btny/weedscience/Pages/default.aspx**.

Please contact Julie Young (**young294@purdue.edu**, 765-494-0891) or Todd Abrahamson (**abraha15@purdue.edu**, 765-494-7071) with any questions or concerns you have when sampling or shipping a sample.

**back to top**

# PLANT DISEASES

## Problems in Ponded Corn – *(Kiersten Wise and Gail Ruhl)* -

Heavy rain and ponding in Indiana cornfields this spring have increased the prevalence of seedling blights. Two minor diseases, crazy top and Physoderma brown spot, may also be problematic in areas where corn was underwater for 24-48 hours.

Seedling blights are prevalent when cool, wet soil conditions persist after planting. These conditions favor infection by many of the organisms that cause soil-borne diseases. Cool, wet soils also slow plant growth and development and give pathogens more time to infect and damage the seedling.

Seedling blights are caused by a variety of soil or seed-inhabiting fungi. Infected seeds may rot after germination, preventing emergence, and plants that emerge have reduced root development and are often stunted. Roots of infected plants may be brown and discolored and can be soft or mushy. Infected plants may also have brown discoloration on the mesocotyl. Two of the most common seedling blights of corn are caused by Pythium and Fusarium species. Remember that to accurately determine the specific organism responsible for a suspected seedling blight issue, it is necessary to submit samples to a diagnostic lab such as the **Purdue Plant and Pest Diagnostic Lab**. This video demonstrates how to sample fields to diagnose seedling blight and stand establishment issues.

The risk of corn seedling blight decreases when crops are planted into warm, dry soils. These conditions allow seedlings to germinate and emerge rapidly. However, it is often necessary to plant into less than ideal soil conditions, and fungicide seed treatments provide some protection against seedling blights.

Crazy top is caused by a fungal-like organism called ***Sclerophthora macrospora***. This pathogen survives in soil and infects young corn plants when there is excess rain or ponding in the spring. Crazy top symptoms are most commonly observed at tasseling when distorted and malformed tassels appear in areas that were ponded or saturated (Fig. 1). However, in some fields symptoms may be less diagnostic, and include stunting, tillering, thin, yellow leaves, and barren plants.

*Fig. 1. Crazy top.*

Physoderma brown spot is caused by the fungus ***Physoderma maydis***, and also survives in soil and residue and infects corn plants when plants are ponded or excess water remains in the whorl. The symptoms typically appear in the late vegetative stages through pollination and are characterized by very small chocolate brown or yellow lesions on the leaves and midrib (Fig. 2). The lesions may appear in a banded pattern. The lesions can also be found on the stalk, leaf sheath, or ear husks. When summer weather is conducive for disease development, premature lodging due to stalk breakage may occur.

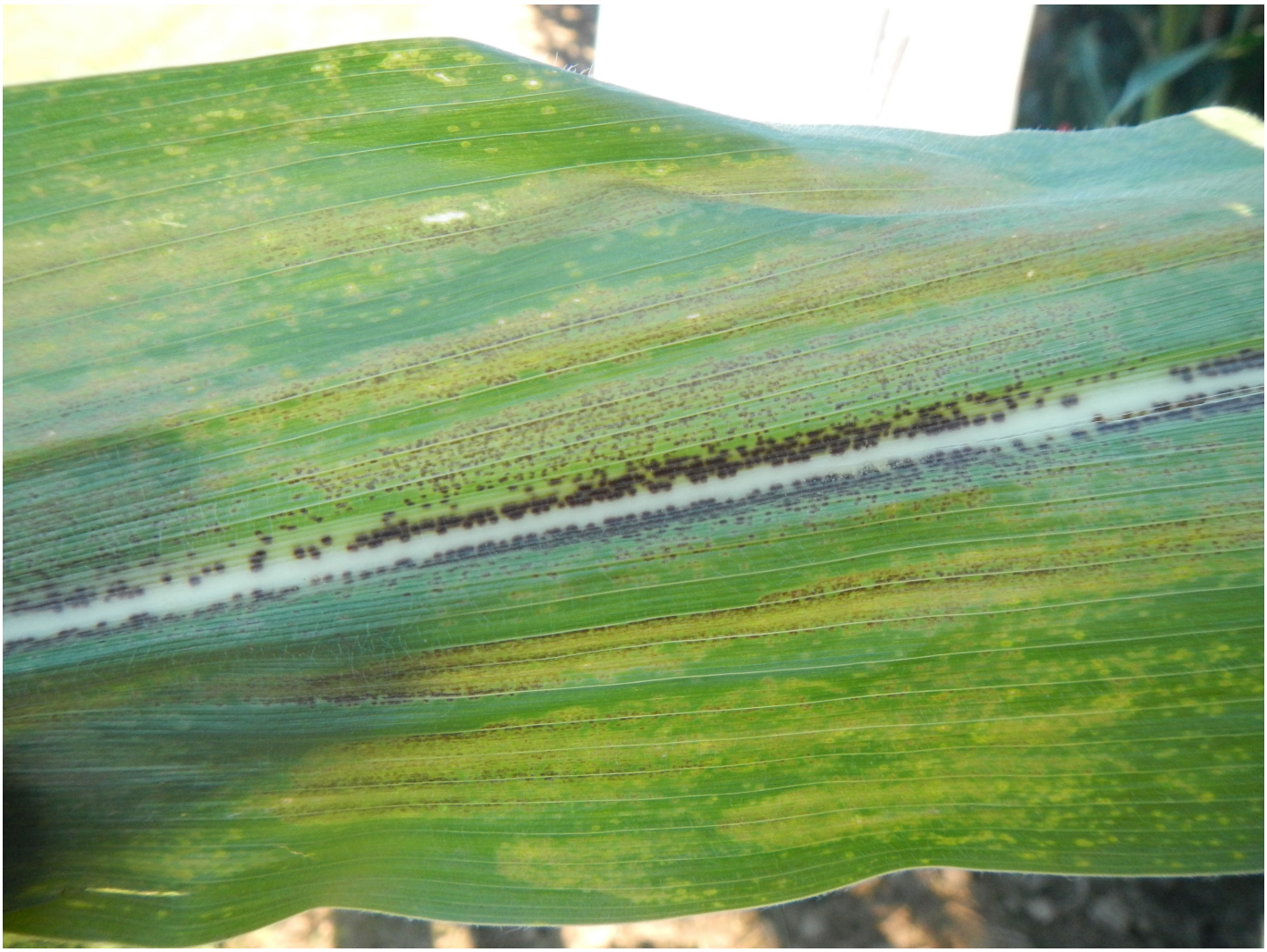


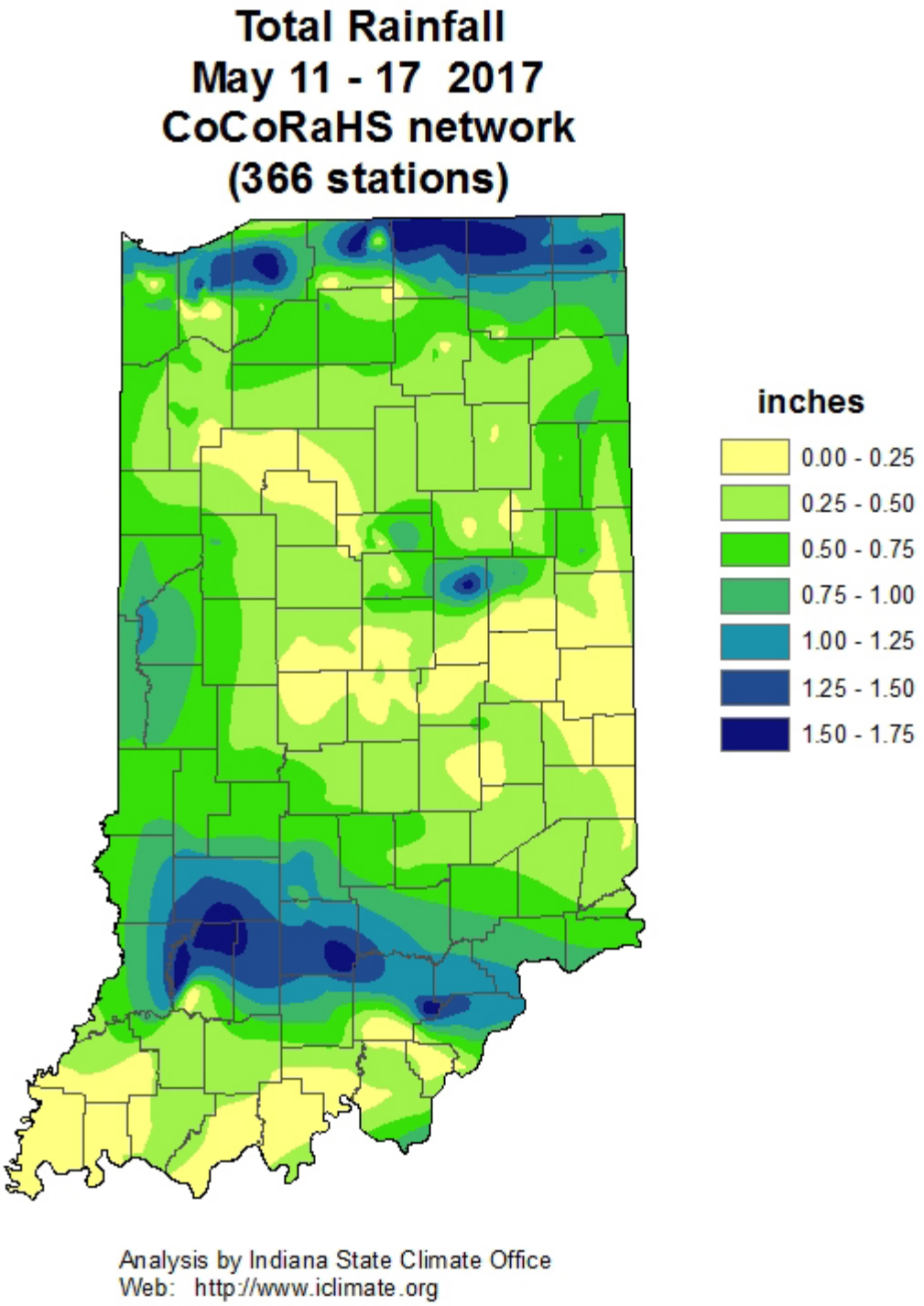
*Fig. 2. Physoderma brown spot.*

Physoderma brown spot management, but symptoms are usually not severe enough to warrant preventative fungicide applications.

back to top

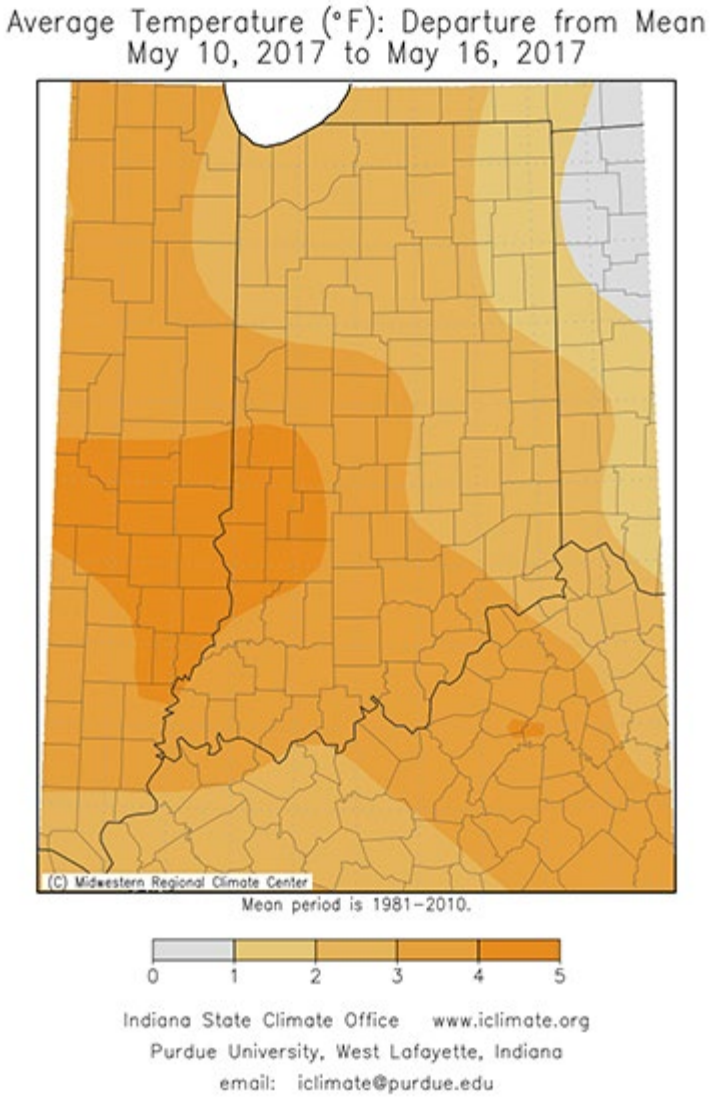
# WEATHER UPDATE

# Precipitation

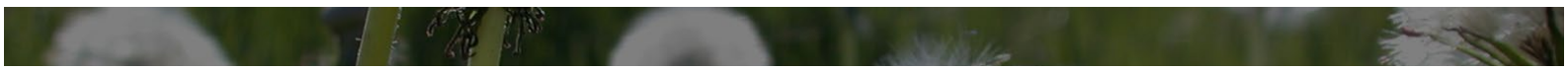



back to top

# Temperature




back to top




# THANKS FOR READING

## Contact Information

Purdue Extension Entomology

901 W. State Street

West Lafayette, IN, 47907

(765) 494-8761

luck@purdue.edu

@PurdueExtEnt

PurdueEntomology

765-494-8491

## Subscribe

If you would like to be alerted by e-mail when the current issue of the Pest&Crop is available on-line, please enter your e-mail address and click the submit button.

Name:

Email Address:

**Word Verification:**

Please enter the verficiation code as seen to continue.

Reload Image | (Audio)

Submit Reset

## DISCLAIMER:

***It is the policy of the Purdue University Cooperative Extension Service that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran. Purdue University is an Affirmative Action institution. This material may be available in alternative formats.***

back to top