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Pest & Crop Newsletter

Purdue Cooperative Extension Service

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Issue 17, July 29, 2016 • USDA-NIFA Extension IPM Grant

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INSECTS, MITES, & NEMATODES

Spider Mites in Corn – (Christian Krupke and John Obermeyer) -

- Spider mites in Indiana field corn are uncommon.

Use caution while interpreting spider mite information from western states.

- Mite species/environments vary considerably across the Corn Belt.
- While scouting, must go beyond the end rows to determine infestation.

Spider mite damage in field corn is a rarity in the Eastern Corn Belt, and very little is understood about their potential effect on yield in the Midwest even after some experience in the drought of 2012. As we visit with, or read our colleagues' information out west, we feel that we're comparing apples to oranges. Mite species and humidity levels are two of the glaring differences.

Two-spotted spider mites (*Tetranychus urticae*) are our enemy in field crops, including soybeans, as well as many homeowner and greenhouse plants, while out in the Western Corn Belt, their primary species is the Bank's grass mite (*Oligonychus pratensis*) with some two-spotted mites mixed in. There are several subtle differences in identification, biology, and damage between the two species, but the most important one to readers is that two-spotted spider mites are more difficult to kill. In addition, two-spotted mites are prone to building pesticide-resistant populations. In short, we've got the tougher pest. And because of that, pesticide carrier volumes are recommended to be increased to at least 5 gpa by air and 20 gpa by ground.

Drought is the root of spider mite problems in Indiana. Though not all areas of the state are impacted by the dry conditions, all counties have had higher humidity in recent days. Though high humidity (>50%) doesn't stop spider mites, it certainly slows down water loss from plants, and therefore lowers plant stress and the mites' reproductive rates. It also makes mite populations prone to epizootics ("plagues" of fungal disease), which we saw locally during the last week.

Spreading through a cornfield is not as easy for spider mites as in soybeans. Mites can either walk from plant to plant via touching leaves or they "balloon" with spun webs, allowing the wind to transport them. Certainly this must be a slow process, because wind movement in the lower canopy of cornfields is quite limited. Make certain that spider mites have moved beyond the end rows, walking well into the field to determine their presence and colonization of leaves is crucial.

We still remain doubtful that spider mite treatments in yellow-dent corn are warranted. However, if fields with decent yield potential (150+ bu/a) have spider mite colonies established on lower leaves (discolored), and spreading to the ear leaf or above, then treating before the dent stage may be justified. It will not be easy to get treatments down to where the mites are most numerous though. As previously mentioned, high amount of carrier (5 by air, 20+ by ground) is strongly recommended. Consider that spider mites are usually most actively colonizing the underside of

lower leaves so canopy penetration is necessary. We have no experience to draw from in treating corn for spider mites, but those products registered for use in Indiana are dimethoate, etoxazole (Zeal), hexythiazox (Onager), propargite (Comite), and spiromesifen (Oberon).



Levels of spider mite damage to corn leaves.

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Fall Armyworms Making Their Presence Known – (Rick Foster and John Obermeyer) –

Fall armyworms are only able to survive the winter in extreme southern US, along the Gulf Coast and in Florida. Fall armyworms tend to migrate northward gradually, with each

successive generation moving several hundred miles further north. They reach Indiana every year, but their populations are unpredictable in timing, numbers, and location. This week we have received reports of fall armyworm infestations in corn from southwest Indiana and northern Elkhart County, so they are throughout the state. However, infestations tend to be spotty, with individual fields or even portions of a field showing damage, with neighboring fields uninfested.



Fall armyworm caterpillar labeled to show diagnostic features.

Fall armyworms will feed on corn at all stages of development and will feed on all above ground plant parts. However, their typical late arrival in Indiana (July-August) means that we are mostly concerned about feeding on kernels in the ear. Because of the higher value of the crop, sweet corn, seed corn, and popcorn growers should be particularly observant for possible fall armyworm infestations. Late planted sweet corn can be attacked during the whorl stage and may require an insecticide application in the late whorl/early tassel emergence stage in addition to the normal earworm spray program. Seed corn and popcorn

are beyond the whorl stage now but may benefit from an insecticide application if damaging populations are observed. Very late-planted (e.g., replanted drowned out areas) field corn is rarely economic to treat. The pyrethroid insecticides still provide good control of fall armyworm in the US, although resistance has been observed in Puerto Rico.



Fall armyworm feeding on kernels.





Fall armyworm damage to whorl.

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

County:	Adams
Cooperator:	Kaminsky/New Era Ag
Wk 1	0
Wk 2	3
Wk 3	3
Wk 4	1
Wk 5	
County:	Adams
Cooperator:	Roe/Mercer Landmark
Wk 1	0
Wk 2	0
Wk 3	4
Wk 4	7
Wk 5	2
County:	Allen
Cooperator:	Anderson/Syngenta Seed
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0
County:	Allen
Cooperator:	Gynn/Southwind Farms
Wk 1	0

Wk 2	0
Wk 3	15
Wk 4	28
Wk 5	4

County:	Allen
Cooperator:	Kneubuhler/G&K Concepts
Wk 1	1
Wk 2	2
Wk 3	1
Wk 4	6
Wk 5	9

County:	Bartholomew
Cooperator:	Bush/Pioneer Hybrids
Wk 1	0
Wk 2	1
Wk 3	0
Wk 4	0
Wk 5	0

County:	Clay
Cooperator:	Bower/Ceres Solutions/Brazil
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0

County:	Clay
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Cooperator:	Bower/Ceres Solutions/Bowling Green
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0

County:	Clay
Cooperator:	Bower/Ceres Solutions/Clay City
Wk 1	0
Wk 2	lost trap
Wk 3	0
Wk 4	0
Wk 5	0

County:	Clay
Cooperator:	Bower/Ceres Solutions/Clinton
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0

County:	Clinton
Cooperator:	Emanuel/Boone Co. CES
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	4
Wk 5	1

County:	Clinton
----------------	----------------

Cooperator:	Foster/Purdue Entomology
Wk 1	0
Wk 2	0
Wk 3	2
Wk 4	2
Wk 5	0
County:	DeKalb
Cooperator:	Hoffman/ATA Solutions
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	60
Wk 5	77
County:	Dubois
Cooperator:	Eck/Purdue CES
Wk 1	1
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0
County:	Elkhart
Cooperator:	Barry/Helena-Goshen
Wk 1	6
Wk 2	8
Wk 3	50
Wk 4	36
Wk 5	

County:	Elkhart
Cooperator:	Kauffman/Crop Tech Inc.
Wk 1	9
Wk 2	58
Wk 3	100
Wk 4	75
Wk 5	180

County:	Fayette
Cooperator:	Schelle/Falmouth Farm Supply Inc.
Wk 1	0
Wk 2	0
Wk 3	2
Wk 4	0
Wk 5	

County:	Fountain
Cooperator:	Mroczkiewicz/Syngenta
Wk 1	8
Wk 2	29
Wk 3	18
Wk 4	13
Wk 5	3

County:	Fulton
Cooperator:	Jenkins/N. Central Coop-Rochester
Wk 1	0
Wk 2	23
Wk 3	50
Wk 4	23
Wk 5	23

County:	Fulton
Cooperator:	Jenkins/N. Central Coop-Kewana
Wk 1	2
Wk 2	91
Wk 3	122
Wk 4	130
Wk 5	28

County:	Gibson
Cooperator:	Schmitz/Gibson Co. CES
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0

County:	Hamilton
Cooperator:	Campbell/Beck's Hybrids
Wk 1	1
Wk 2	8
Wk 3	0
Wk 4	0
Wk 5	0

County:	Hamilton
Cooperator:	Truster/Reynolds Farm Equipment
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0

Wk 5	0
County:	Hendricks
Cooperator:	Nicholson/Nicholson Consulting
Wk 1	0
Wk 2	3
Wk 3	3
Wk 4	1
Wk 5	1
County:	Jasper
Cooperator:	Overstreet/Purdue CES
Wk 1	6
Wk 2	20
Wk 3	50
Wk 4	118
Wk 5	69
County:	Jasper
Cooperator:	Ritter/Brodbeck Seeds
Wk 1	0
Wk 2	112
Wk 3	87
Wk 4	52
Wk 5	4
County:	Jay
Cooperator:	Boyer/Davis PAC
Wk 1	
Wk 2	0
Wk 3	3
Wk 4	1

Wk 5	0
County:	Jay
Cooperator:	Shrack/Ran Del Agri Services
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0
County:	Jay
Cooperator:	Temple/Pennyville
Wk 1	
Wk 2	
Wk 3	1
Wk 4	
Wk 5	
County:	Jay
Cooperator:	Temple/RedKey
Wk 1	
Wk 2	
Wk 3	2
Wk 4	
Wk 5	
County:	Jennings
Cooperator:	Bauerle/SEPAC
Wk 1	0
Wk 2	1
Wk 3	0

Wk 4	1
Wk 5	0
County:	Knox
Cooperator:	Bower/Ceres Solutions/Vincennes
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0
County:	Knox
Cooperator:	Bower/Ceres Solutions/Frichton
Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0
County:	Lake
Cooperator:	Kleine/Kleine Farms
Wk 1	6
Wk 2	12
Wk 3	11
Wk 4	9
Wk 5	3
County:	Lake
Cooperator:	Moyer/Dekalb Hybrids, Shelby
Wk 1	25
Wk 2	93
Wk 3	103

Wk 4	418
Wk 5	32
County:	Lake
Cooperator:	Moyer/Dekalb Hybrids, Schneider
Wk 1	19
Wk 2	156
Wk 3	219
Wk 4	369
Wk 5	58
County:	LaPorte
Cooperator:	Rocke/Agri-Mgmt Solutions, Wanatah
Wk 1	50
Wk 2	120
Wk 3	158
Wk 4	157
Wk 5	65
County:	Madison
Cooperator:	Truster/Reynolds Farm Equip.
Wk 1	0
Wk 2	1
Wk 3	0
Wk 4	3
Wk 5	0
County:	Miami
Cooperator:	Early/Pioneer Hybrids
Wk 1	2
Wk 2	88

Wk 3	94
Wk 4	47
Wk 5	11
County:	Newton
Cooperator:	Moyer/Dekalb Hybrids, Lake Village
Wk 1	39
Wk 2	263
Wk 3	309
Wk 4	454
Wk 5	121
County:	Porter
Cooperator:	Leuck/PPAC
Wk 1	3
Wk 2	9
Wk 3	40
Wk 4	146
Wk 5	26
County:	Pulaski
Cooperator:	Capouch/M&R Ag Services
Wk 1	1
Wk 2	4
Wk 3	6
Wk 4	120
Wk 5	42
County:	Putnam
Cooperator:	Nicholson/Nicholson Consulting
Wk 1	0
Wk 2	0

Wk 3	2
Wk 4	0
Wk 5	0

County: Randolph

Cooperator: Boyer/DPAC

Wk 1	0
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Wk 2	2
------	---

Wk 3	0
------	---

Wk 4	1
------	---

Wk 5	2
------	---

County: Rush

Cooperator: Schelle/Falmouth Farm Supply Inc.

Wk 1	0
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Wk 2	0
------	---

Wk 3	0
------	---

Wk 4	0
------	---

Wk 5	
------	--

County: Shelby

Cooperator: Fisher/Shelby Co. Co-Op

Wk 1	0
------	---

Wk 2	0
------	---

Wk 3	0
------	---

Wk 4	1
------	---

Wk 5	1
------	---

County: Shelby

Cooperator: Simpson/Simpson Farms

Wk 1	0
------	---

Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0

County: Sullivan

Cooperator: Bower/Ceres Solutions/Farmersburg

Wk 1	0
Wk 2	0
Wk 3	2
Wk 4	1
Wk 5	0

County: Sullivan

Cooperator: Bower/Ceres Solutions/Sullivan

Wk 1	0
Wk 2	3
Wk 3	3
Wk 4	1
Wk 5	1

County: Tippecanoe

Cooperator: Bower/Ceres Solutions

Wk 1	5
Wk 2	15
Wk 3	26
Wk 4	3
Wk 5	2

County: Tippecanoe

Cooperator: Nagel/Ceres Solutions

Wk 1	0
------	---

Wk 2	7
Wk 3	20
Wk 4	10
Wk 5	

County: Tippecanoe

Cooperator: Obermeyer/Purdue Entomology

Wk 1	0
Wk 2	1
Wk 3	2
Wk 4	1
Wk 5	0

County: Tippecanoe

Cooperator: Westerfeld/Monsanto

Wk 1	0
Wk 2	5
Wk 3	5
Wk 4	4
Wk 5	4

County: Tipton

Cooperator: Campbell/Beck's Hybrids

Wk 1	0
Wk 2	0
Wk 3	
Wk 4	1
Wk 5	0

County: Whitley

Cooperator: Walker/NEPAC

Wk 1	1
Wk 2	8
Wk 3	61
Wk 4	87
Wk 5	41

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2016 Corn Earworm Trap Report – (Rick Foster) –

2016 Corn Earworm Trap Report

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Corn Earworm Trap Report

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WEEDS

VIDEO: Purdue Offers Herbicide Resistance Weed Screening – (Travis Legleiter, Bill Johnson, and John Obermeyer) –

The Purdue Weed Science group is again offering herbicide resistance screening for Palmer amaranth, waterhemp, and giant ragweed for the 2016 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

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.

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.

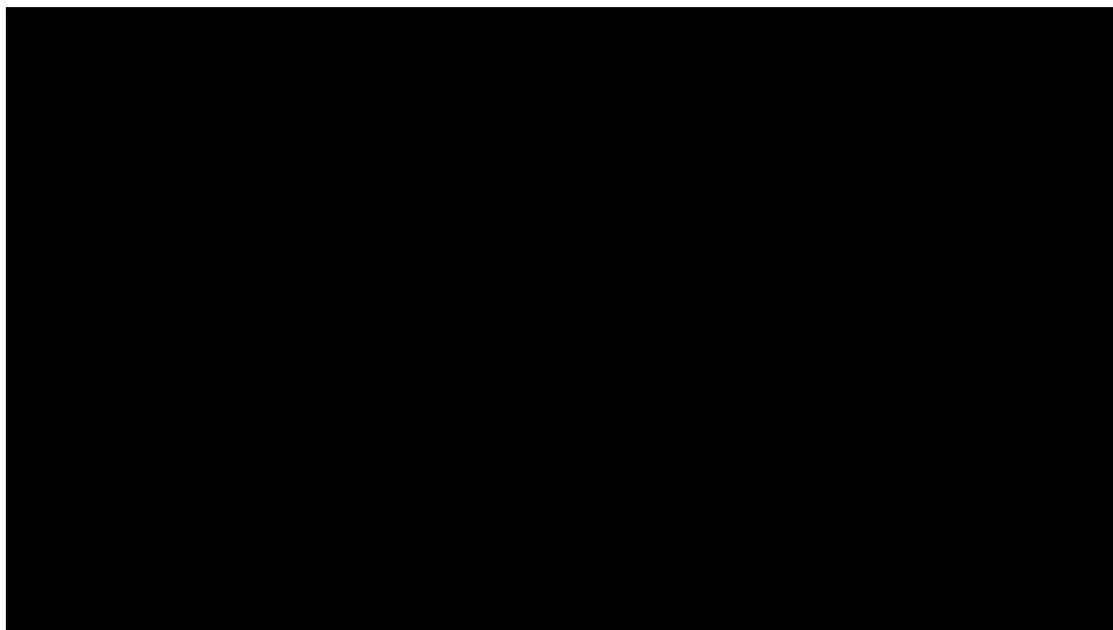
The submission form with instructions for collection, storage, and shipping can be found at the following link:

<https://ag.purdue.edu/btny/weedscience/Documents/2016HerbicideResistancescreeningform.pdf>

f. 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) with any questions or concerns you have when sampling or shipping a sample.

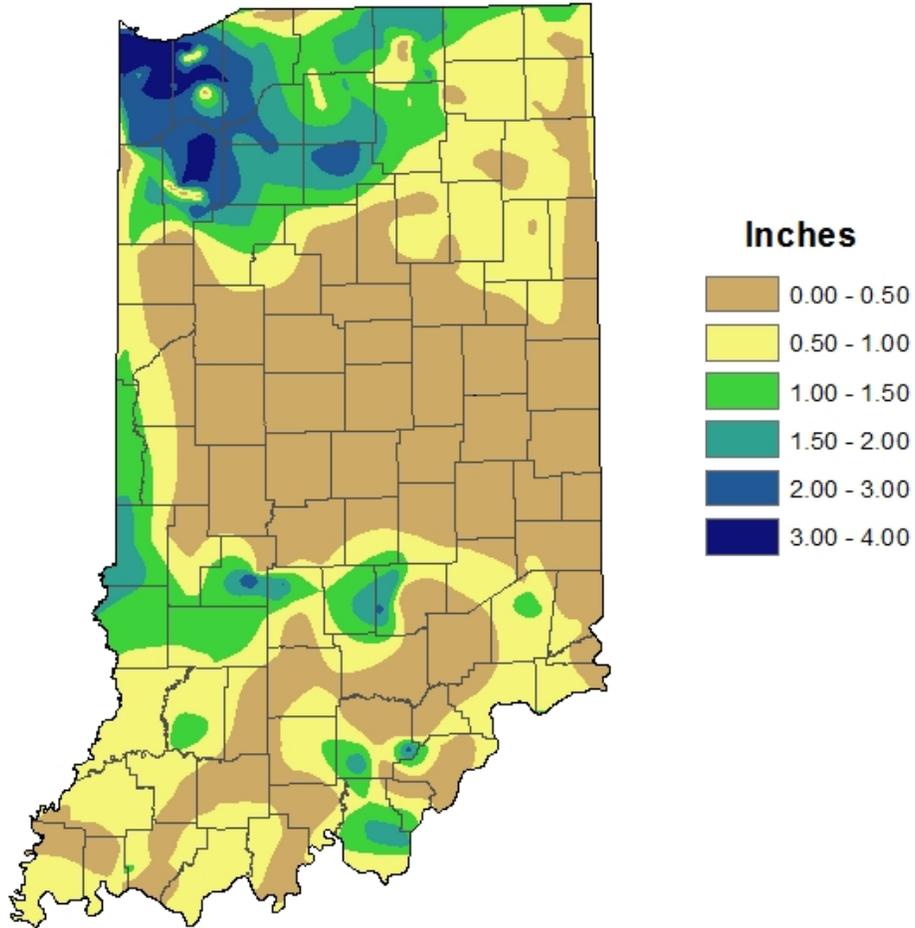


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WEATHER UPDATE

Precipitation

**Total Precipitation
Jul 21 - 27, 2016
CoCoRaHS Network
(348 Stations)**

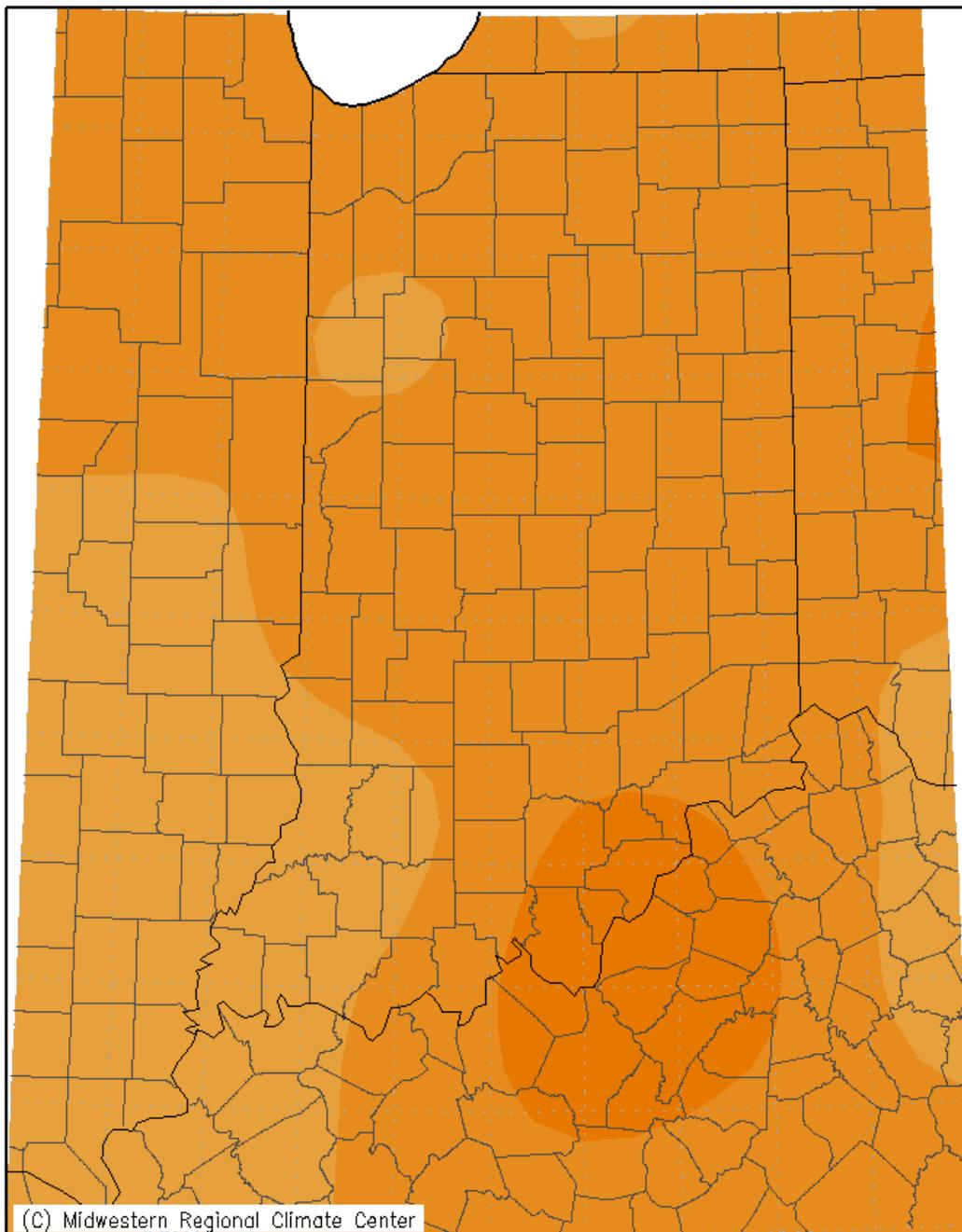


Analysis by Indiana State Climate Office
Web: <http://www.iclimat.org>

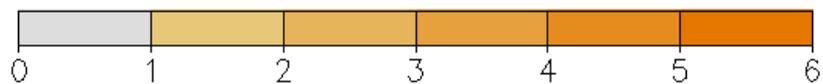
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Temperature

Average Temperature (°F): Departure from Mean July 19, 2016 to July 25, 2016



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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