

[Home](#)

[Current
Year](#)

[Past
Years](#)

[Subscribe](#)

PURDUE
UNIVERSITY.

Pest & Crop Newsletter

Purdue Cooperative Extension Service

IN THIS ISSUE

Issue 14, July 2, 2015 • USDA-NIFA Extension IPM Grant

[CLICK HERE FOR A PDF VERSION OF THIS ISSUE](#) 

[Agronomy Tips](#)

[How Late Can I Replant Corn?](#)

[Planting Soybean for Grain or Cover?](#)

Insects, Mites, and Nematodes

[Windshield Splatter: Insect Pest Update](#)

[Corn Earworm Trap Report](#)

[Western Bean Cutworm Pheromone Trap Report](#)

[Armyworm Pheromone Trap Report](#)

Weather Update

[Moisture and Temperature Accumulations](#)



How Late Can I Replant Corn? – (Bob Nielsen) –

Even though essentially all of Indiana's 2015 corn crop was planted on the first go around, frequent and excessive rains from late May to date, and the subsequent ponding, flooding, or saturated soil conditions have caused extensive damage to the first planting on tens of thousands of acres around

the state (Nielsen's very conservative estimate). Some growers, in desperation, are asking "How late can I replant corn?" in hopes of recouping some lost yield / income potential from severely damaged fields.

Most of the time when I receive this question in the last week of June, my stock answer to growers in the northern half of Indiana is "Perish the thought" simply because there are too few remaining calendar days and, more importantly, Growing Degree Days (GDDs), in the growing season to safely mature most adapted hybrids of corn prior to a killing fall freeze (Nielsen, 2015).

However, "desperate times call for desperate measures" and so one can speculate on whether or not corn could be planted the first week of July and safely mature. One of the primary keys to answering this questions lies with the relative maturity ratings of hybrids and, more importantly, their expected GDD requirements from planting to physiological maturity (Nielsen, 2012b). The common range of relative hybrid maturities grown in Indiana ranges from about 104 to 118 "days" or hybrid GDD ratings from about 2500 to 2800 GDDs from planting to physiological maturity.

We also know from past research that hybrids respond to delayed planting by maturing in fewer GDDs than expected (Nielsen et al., 2002). Our research some years ago indicated that for every day of planting delay beyond May 1, hybrids mature approximately 7 fewer GDDs than expected. That research included planting dates out to mid-June. We can only speculate that the reduction in GDDs to maturity continues beyond that date, but for the sake of argument, let's say that the trend continues. A hybrid planted on July 1 might mature in 420 fewer GDDs than expected (approximately 60 days x 7).



What to do now?

If this response to delayed planting holds true out to early July, then the next step is to estimate how many GDDs one might expect from that date to a date of your choosing in the fall. For this, the online [U2U Growing Degree Tool](#) offers some assistance in estimating GDD accumulations for specific counties and planting dates. Let's use Randolph County along the eastcentral side of the state where there are currently quite a few acres of severely damaged 1st-planting corn. The GDD Tool indicates that October 21 is the average first killing freeze date in the fall (28°F), so let's use that as our ending date. The U2U Growing Degree Tool estimates that 1963 GDDs would accumulate "on average" from July 1 to October 21, with a range of 1615 to 2123 GDDs.

Now, let's work backward to relate that GDD estimate and the estimate that a hybrid planted July 1 may mature in 420 fewer GDDs than expected to estimate what relative hybrid maturity might have a chance of maturing safely. Get out your pencils...

The estimated 1963 GDD accumulation plus the 420 GDDs "gained" by the delayed planting might be equal to a hybrid maturity with a rated 2383 GDDs to maturity. With that estimate in hand, visit with your seed dealer and find out what relative hybrid maturity that would equate to. For many

seed companies, a hybrid GDD rating estimate of 2383 would be in the neighborhood of a 95 to 100 "day" corn hybrid.

What if the remainder of the growing season remains a bit on the cool side (like it has been most of the season so far)? Use the low end of the GDD range provided by the U2U GDD tool and repeat the calculations. The estimated 1615 GDD accumulation plus the 420 GDDs "gained" by the delayed planting might be equal to a hybrid maturity with a rated 2035 GDDs to maturity. This would be equal to a relative hybrid maturity rating of 75 to 80 "days". Quite a difference compared to running the numbers with the "average" expected GDDs from July 1.

Another factor to consider is the consequence of the ending date you choose to run these calculations. I chose the average date of a killing fall freeze for my example. Understand, that a hybrid that simply matures on that date still requires quite a bit of field drydown of the grain before it reaches a harvestable moisture content. If you choose dates earlier than the average fall killing freeze to provide for more days of field drying, that will result in even fewer available GDDs to mature the crop in the first place.

The bottom line with this discussion is that it may well be possible to replant damaged corn fields in the northern half of Indiana as late as early July with hybrid maturities more suitable for parts of Minnesota or Wisconsin. But, therein lies some more challenges. Such early hybrid maturities are not adapted to the central Corn Belt for several reasons. In particular, one needs to focus on identifying candidate hybrids that have good genetic disease resistance "packages" for our important diseases here in Indiana, especially gray leaf spot, northern corn leaf blight, and some of the ear and stalk rot diseases. Furthermore, I suspect that available seed supplies for these early maturity hybrids may be difficult to obtain, either due to short supply or the logistics of moving seed from the northern Corn Belt to Indiana.

The final comment I would make is that growers who carry crop insurance policies need to visit with their crop insurance agents before taking the risky step of replanting corn this late in the season. There may be unforeseen ramifications to your coverage that would frustrate you later.

This article contains quite a few "ifs", "ands", and "buts". That should give you a hint of the riskiness of replanting a damaged corn crop back to corn at these late dates. But, as I said earlier... for some growers "desperate times call for desperate measures".

Related Reading

Nielsen, R.L. (Bob). 2012a. Heat Unit Concepts Related to Corn Development. Corny News Network, Purdue Univ. [online] <http://www.kingcorn.org/news/timeless/HeatUnits.html> [URL accessed June 2015].

Nielsen, R.L. (Bob). 2012b. Interpreting Corn Hybrid Maturity Ratings. Corny News Network, Purdue Univ. [online] <http://www.kingcorn.org/news/timeless/HybridMaturity.html> [URL accessed June 2015].

Nielsen, RL (Bob). 2015. Hybrid Maturities for Delayed Planting. Corny News Network, Purdue Extension. <http://www.kingcorn.org/news/timeless/HybridMaturityDelayedPlant.html> [URL accessed June 2015].

Nielsen, Robert L., Peter R. Thomison, Gregory A. Brown, Anthony L. Halter, Jason Wells, and Kirby L. Wuethrich. 2002. Delayed Planting Effects on Flowering and Grain Maturation of Dent Corn. *Agron. J.* 94:549-558.

Useful to Usable (U2U). 2015. Corn Growing Degree Day Tool. Useful to Usable Project, Purdue Univ. [online] <https://mygeohub.org/groups/u2u/gdd> [URL accessed June 2015].

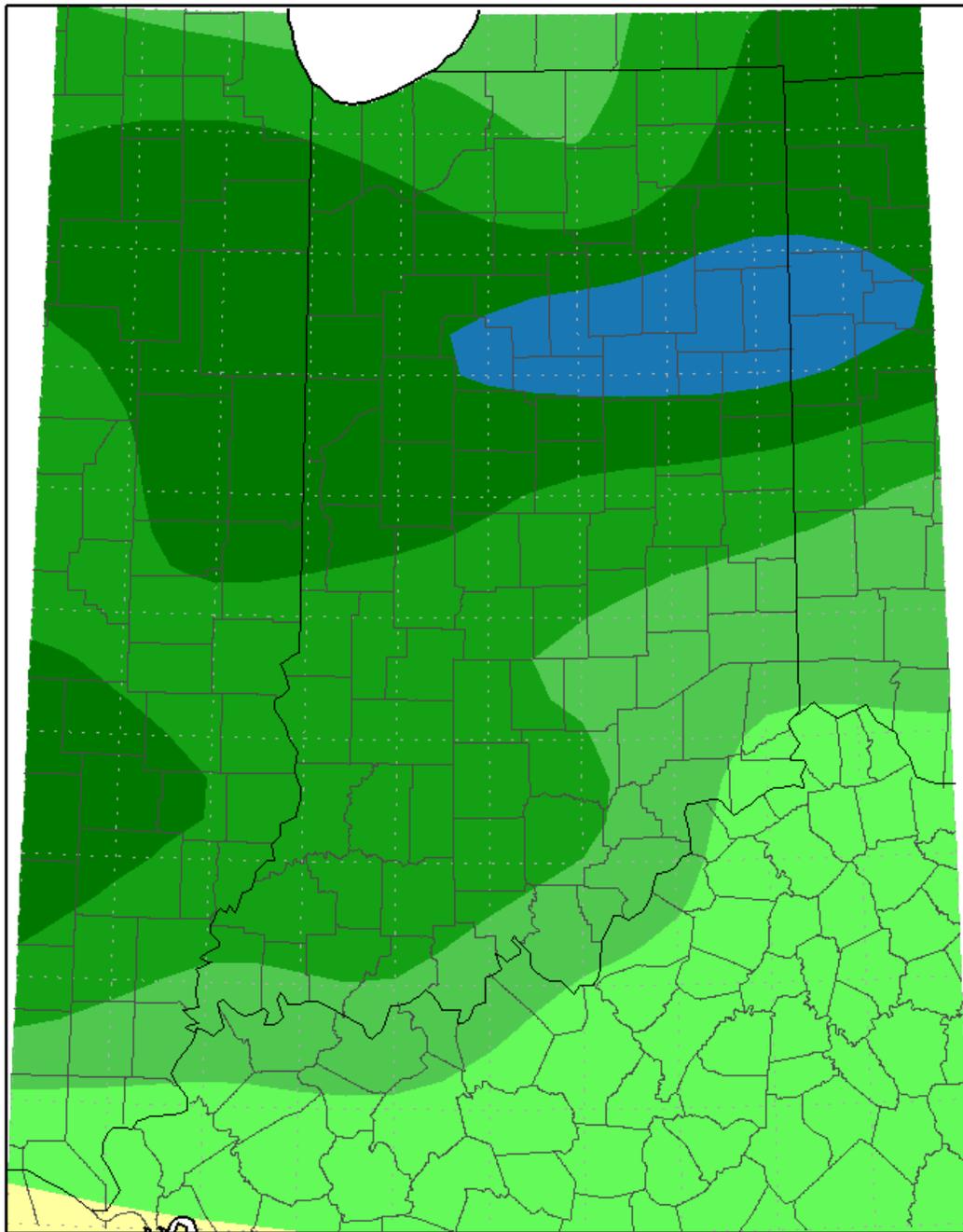
[back to top](#)

Planting Soybean for Grain or Cover? – (Shaun N. Casteel, Soybean Specialist) –

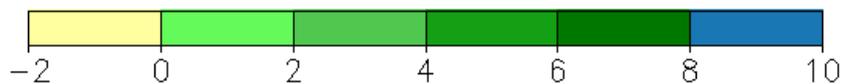
Planting soybean for the first time or as a replant in large flooded areas is under consideration for many this July. Yes, this July. Rainfall totals for June have reached historic levels for the northern half of Indiana. Many areas received 6 to 8 inches more than their monthly average and several counties from the central to eastern portion received 8 to 10 inches more than their average for June (Figure 1). These conditions have prevented planting for many fields and drowned out soybeans and corn in fields that were planted. Field drying is slow and many will not likely be able

to plant until after the 4th of July.

Accumulated Precipitation (in): Departure from Mean May 31, 2015 to June 29, 2015



Mean period is 1981–2010.



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

Figure 1. Rainfall deviation (inches) from the average for June (May 31 to June 29, 2015). (Indiana State

Late Planting For Grain

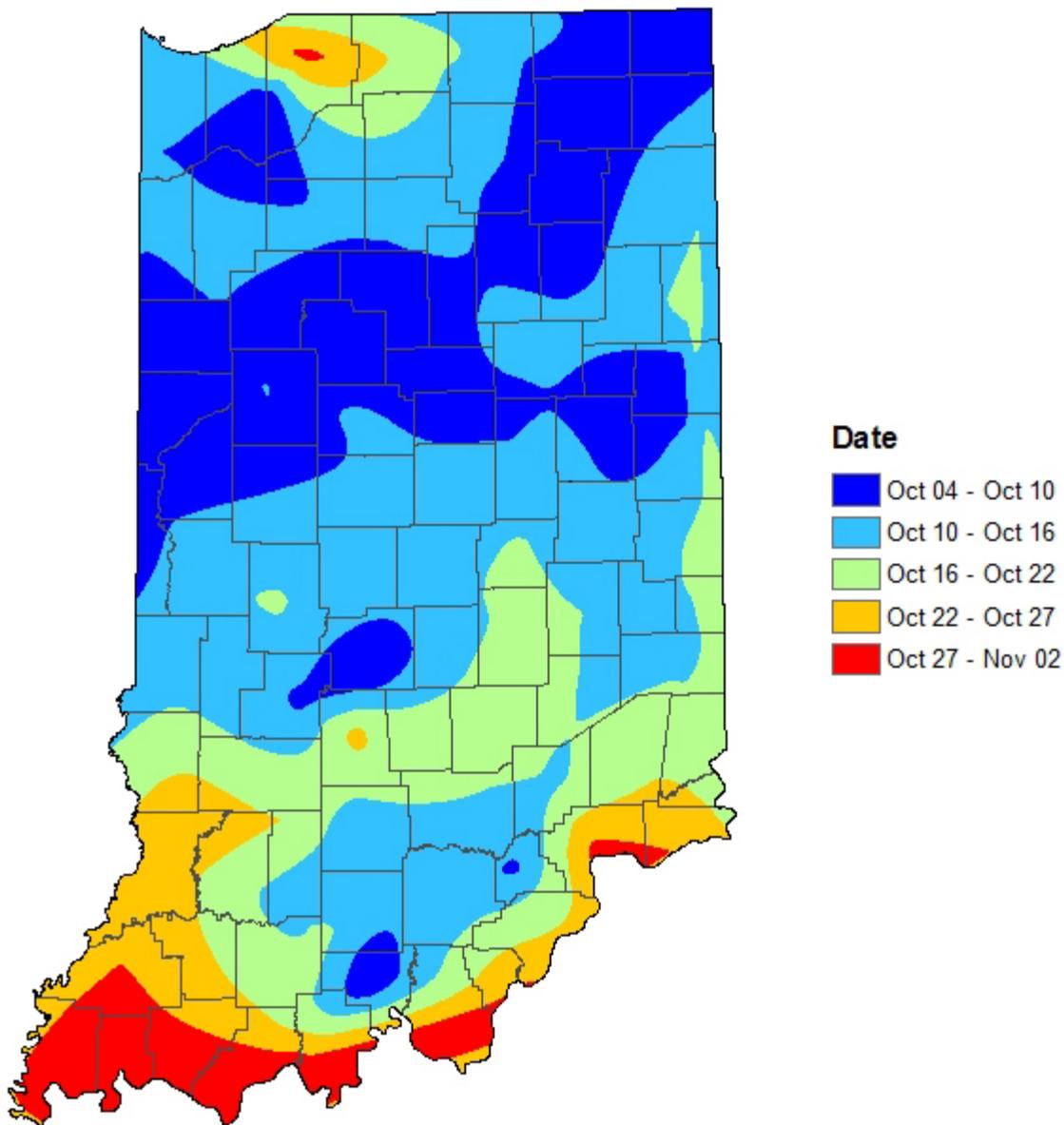
We recommend shortening the maturity group by 0.5 unit and increase the seeding rates under normal, late planting conditions, which would be June 15-30 for northern third, June 20-July 5 for central third, and June 25 to July 10 for southern third of Indiana. That recommendation is quickly expiring (and really expired for northern Indiana).

If soybeans are to be planted for grain harvest, we need to shorten the maturity group by 1.0 unit relative to the full season for your area and plant at least 200,000 seeds/acre. We will mature about 7 to 10 days faster with that shorter season variety (i.e., 2.5 vs. 3.5 maturity), which is critical for grain production in the northern half of Indiana. High seeding rates are needed to push the plants and first pods higher, produce more nodes on area basis, and canopy faster.

The next and most critical decision is to backdate 90 days from the typical fall freeze (Figure 2). If the fall freeze is typically October 10th, then soybeans need to be planted and emerged by July 10th to have a chance of producing harvestable grain this fall. Soil moisture and temperatures should allow soybeans to emerge quickly (4 or 5 days in many cases). Basically, you could substitute July for October in the legend of Figure 2 to determine the date that soybean should be planted and emerged (plus or minus a couple days).

The soybean could mature completely in some years. While in other years, the soybean is nearing the end of seed fill (R6 – full seed) or leaves are dropping and pods are turning yellow-brown (R7 – first signs of physiological maturity). In the latter cases, the freeze could arrest seed fill resulting in small seeds that are sometimes green in color, but are still harvestable.

Average Date of First Fall Frost 32 F or Lower



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

Figure 2. Average fall freeze (32°F) dates for Indiana. (Indiana State Climate Office, www.iclimat.org). You can substitute July for October to have a guideline for the last opportunity to have soybeans planted and emerged for harvestable grain.

My hope is that you will be able to finish planting soybeans and be able to produce harvestable grain. If this is the case, you will likely produce 50 to 60% of your typical yields from your normal

planting periods. If you are not able to plant before these 90-day backdates, the chances of producing harvestable grain decreases substantially.

Late Planting For Cover

Even still, we should plant something in these fields and large drowned out areas to help suppress weeds, take up moisture and nutrients, and to stabilize the soil for this year and next year. We can maintain the course of planting soybeans as a cover after your target 90-day backdates. The need to shorten the maturity group is not needed since the goal would be to produce biomass and cover the ground. We have attempted to plant double crop soybeans in the northern half of Indiana with success in 1 out of 3 tries (keep in mind the soil moisture limited quick stand establishment). In other words, we have planted soybeans as a cover in 2 out of 3 tries with mid-July emergence dates. If you are in the northern half of Indiana, my estimate of biomass production will be around 3,000 to 4,000 lb of dry biomass/acre with approximately 60 to 100 lb of N/ac in the biomass alone. Soybean will have nodulation and N fixation, so additional N will be in the soil as well.

Another option is to be diligent in weed control (herbicide, tillage, etc.), but I prefer to plant soybeans even if it as a cover or look at other crop options – short-term forage or cover crops. You will need to be mindful of restrictions based on previously applied herbicides, which may kill the other options, be off-label, and/or not be allowable for foraging. One more advantage with planting soybean, even as a cover, will be the ability to spray the whole field with your typical herbicide program to control weeds.

[back to top](#)



INSECTS, MITES & NEMATODES

Windshield Splatter: Insect Pest Update– (John Obermeyer) -

As many have asked or made note, insect numbers, other than mosquitoes and fungus gnats, seem to be lower. No surprise that the moisture extremes have had an impact on those insects depending on the soil to complete at least a portion of their life cycle.

Japanese beetles are now appearing throughout the state, and will continue to emerge (from grubs in the soil) for several weeks. Even on a “normal” year it is difficult to assess how abundant they are in the state. From my perspective, they seem to be lower so far. Typically this pest is quite spotty in the state, and soybean defoliation and/or corn silk feeding is noticeable, but hardly justified to treat.



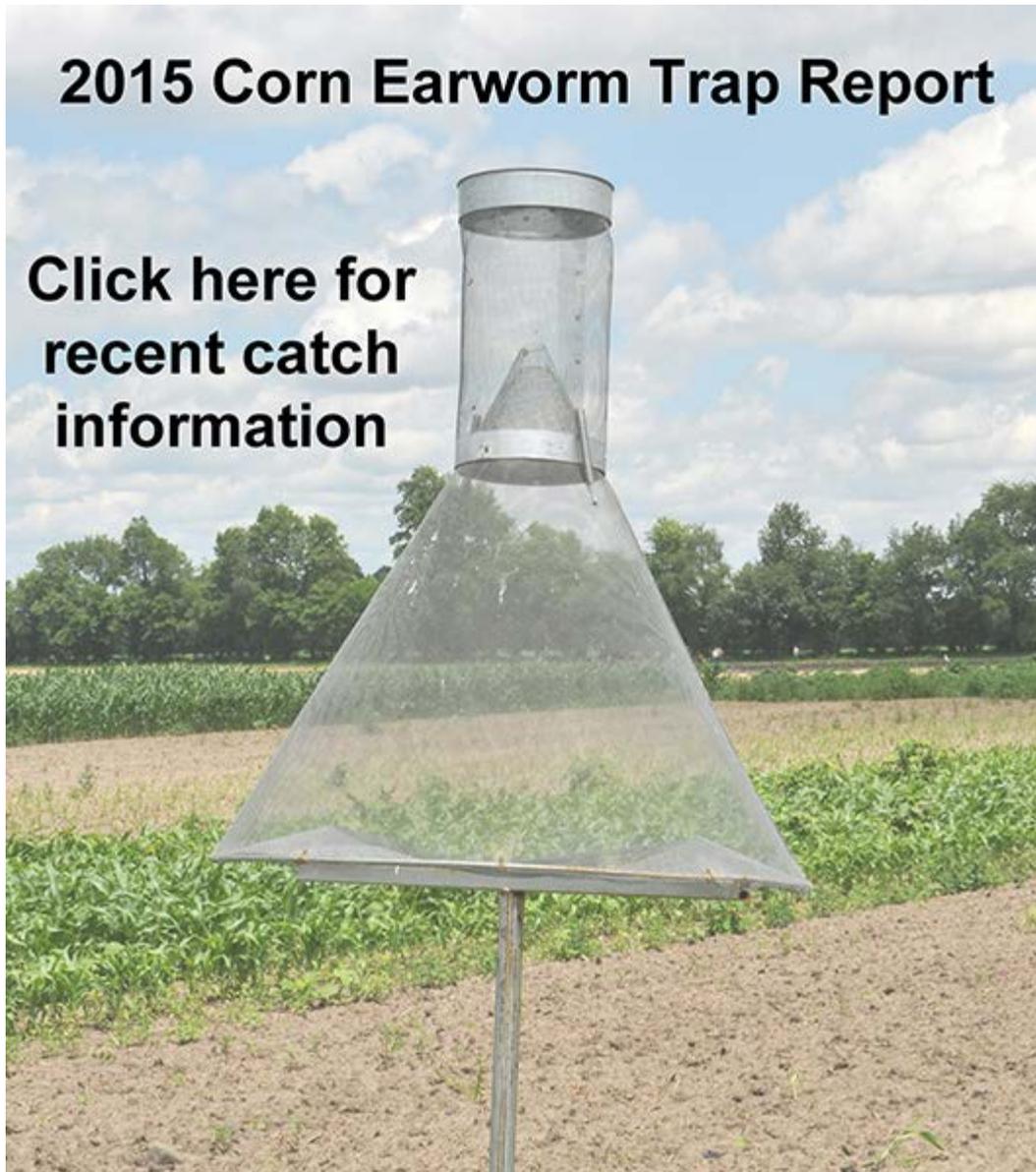
Male western corn rootworm beetle waiting for a mate.

The week of June 29, we captured our first male western corn rootworm beetle in Tippecanoe County. The males emerge a few days before the females. Beetle emergence will go on for weeks, so this is just the beginning. As stated in an earlier article, we suspect many hatching rootworm larvae drowned, which should equate to a lower beetle population this year. This insect is known as the “silk beetle,” although it has been some years since I have seen them be of concern except in late-market sweet corn. Heavy rainfall events that have trended for many years in early June, has certainly had an overall impact on this “billion dollar” insect in Indiana.

Two weeks ago, our trap cooperators began monitoring for the emergence/flight of the western bean cutworm. This insect spends a considerable amount of time in the soil throughout fall, winter, and spring. Though it is early in the trapping process, catches so far have been very low. The recent catches are reported below. It would not be surprising for the moth catches to remain low, we shall find out!

Happy Scouting!

[back to top](#)



Corn Earworm Trap Report.

[back to top](#)

Western Bean Cutworm Pheromone Trap Report

County:	Adams
Cooperator:	Kaminsky/New Era Ag
Wk 1	0
Wk 2	0
County:	Adams
Cooperator:	Roe/Mercer Landmark
Wk 1	0
Wk 2	0
County:	Allen
Cooperator:	Anderson/Syngenta Seed
Wk 1	0
Wk 2	0
County:	Allen
Cooperator:	Gynn/Southwind Farms
Wk 1	0
Wk 2	0
County:	Allen
Cooperator:	Kneubuhler/G&K Concepts
Wk 1	0
Wk 2	0
County:	Bartholomew
Cooperator:	Bush/Pioneer Hybrids
Wk 1	0
Wk 2	0
County:	Boone

Cooperator:	Campbell/Beck's Hybrids
Wk 1	0
Wk 2	0
County:	Clay
Cooperator:	Bower/Ceres Solutions/Brazil
Wk 1	
Wk 2	0
County:	Clay
Cooperator:	Bower/Ceres Solutions/Bowling Green
Wk 1	
Wk 2	0
County:	Clinton
Cooperator:	Emanuel/Boone Co. CES
Wk 1	0
Wk 2	0
County:	Clinton
Cooperator:	Foster/Purdue Entomology
Wk 1	
Wk 2	0
County:	DeKalb
Cooperator:	Hoffman/ATA Solutions
Wk 1	
Wk 2	
County:	Dubois
Cooperator:	Eck/Purdue CES
Wk 1	0
Wk 2	0

County:	Elkhart
Cooperator:	Kauffman/Crop Tech Inc.
Wk 1	1
Wk 2	1
County:	Fayette
Cooperator:	Schelle/Falmouth Farm Supply Inc.
Wk 1	
Wk 2	0
County:	Fountain
Cooperator:	Mroczkiewicz/Syngenta
Wk 1	0
Wk 2	0
County:	Fulton
Cooperator:	Jenkins/N. Central Coop-Rochester
Wk 1	0
Wk 2	1
County:	Fulton
Cooperator:	Jenkins/N. Central Coop-Kewana
Wk 1	1
Wk 2	2
County:	Gibson
Cooperator:	Schmitz/Gibson Co. CES
Wk 1	0
Wk 2	0
County:	Hamilton
Cooperator:	Campbell/Beck's Hybrids
Wk 1	0

Wk 2	0
County:	Hamilton
Cooperator:	Truster/Reynolds Farm Equipment
Wk 1	0
Wk 2	0
County:	Hendricks
Cooperator:	Nicholson/Nicholson Consulting
Wk 1	0
Wk 2	0
County:	Henry
Cooperator:	Schelle/Falmouth Farm Supply Inc., Millville
Wk 1	
Wk 2	0
County:	Jasper
Cooperator:	Overstreet/Purdue CES
Wk 1	0
Wk 2	
County:	Jasper
Cooperator:	Ritter/Brodbeck Seeds
Wk 1	1
Wk 2	0
County:	Jay
Cooperator:	Boyer/Davis PAC
Wk 1	0
Wk 2	0
County:	Jay
Cooperator:	Shrack/Ran Del Agri Services

Wk 1	0
Wk 2	0
County:	Jay
Cooperator:	Temple/Jay County CES
Wk 1	
Wk 2	2
County:	Jennings
Cooperator:	Bauerle/SEPAC
Wk 1	0
Wk 2	1
County:	Knox
Cooperator:	Bower/Ceres Solutions/Freelandville
Wk 1	
Wk 2	0
County:	Knox
Cooperator:	Bower/Ceres Solutions/Vincennes
Wk 1	
Wk 2	0
County:	Knox
Cooperator:	Bower/Ceres Solutions/Frichton
Wk 1	
Wk 2	0
County:	Lake
Cooperator:	Kleine/Kleine Farms
Wk 1	
Wk 2	0
County:	Lake

Cooperator:	Moyer/Dekalb Hybrids, Shelby
Wk 1	0
Wk 2	2
County:	Lake
Cooperator:	Moyer/Dekalb Hybrids, Schneider
Wk 1	1
Wk 2	0
County:	LaPorte
Cooperator:	Rocke/Agri-Mgmt Solutions, Wanatah
Wk 1	0
Wk 2	5
County:	LaPorte
Cooperator:	Rocke/Agri-Mgmt Solutions, LaCrosse
Wk 1	0
Wk 2	2
County:	Miami
Cooperator:	Early/Pioneer Hybrids
Wk 1	
Wk 2	0
County:	Miami
Cooperator:	Myers/Myers Ag Service
Wk 1	
Wk 2	2
County:	Montgomery
Cooperator:	Stine/Nicholson Sonsulting
Wk 1	0
Wk 2	0

County:	Newton
Cooperator:	Moyer/Dekalb Hybrids, Lake Village
Wk 1	0
Wk 2	1
County:	Porter
Cooperator:	Leuck/PPAC
Wk 1	0
Wk 2	1
County:	Putnam
Cooperator:	Nicholson/Nicholson Consulting
Wk 1	0
Wk 2	0
County:	Randolph
Cooperator:	Boyer/DPAC
Wk 1	0
Wk 2	0
County:	Rush
Cooperator:	Schelle/Falmouth Farm Supply Inc.
Wk 1	
Wk 2	0
County:	Shelby
Cooperator:	Simpson/Simpson Farms
Wk 1	0
Wk 2	0
County:	Sullivan
Cooperator:	Bower/Ceres Solutions/Sullivan
Wk 1	

Wk 2	0
County:	Tippecanoe
Cooperator:	Bower/Ceres Solutions
Wk 1	
Wk 2	2
County:	Tippecanoe
Cooperator:	Nagel/Ceres Solutions
Wk 1	0
Wk 2	0
County:	Tippecanoe
Cooperator:	Obermeyer/Purdue Entomology
Wk 1	
Wk 2	0
County:	Tippecanoe
Cooperator:	Westerfeld/Monsanto
Wk 1	0
Wk 2	0
County:	Whitley
Cooperator:	Walker/NEPAC
Wk 1	0
Wk 2	0

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

[back to top](#)

Armyworm Pheromone Trap Report

County/Cooperator:**Dubois/SIPAC Ag Center**

Wk 1	0
Wk 2	0
Wk 3	1
Wk 4	0
Wk 5	2
Wk 6	1
Wk 7	0
Wk 8	4
Wk 9	0
Wk 10	3
Wk 11	1
Wk 12	5
Wk 13	6

County/Cooperator:**Jay/Davis Ag Center**

Wk 1	0
Wk 2	0
Wk 3	2
Wk 4	0
Wk 5	4
Wk 6	1
Wk 7	0
Wk 8	0
Wk 9	0
Wk 10	0
Wk 11	3
Wk 12	
Wk 13	

County/Cooperator: Jennings/SEPAC Ag Center

Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	1
Wk 6	0
Wk 7	0
Wk 8	2
Wk 9	4
Wk 10	0
Wk 11	3
Wk 12	11
Wk 13	9

County/Cooperator: Knox/SWPAC Ag Center

Wk 1	
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	1
Wk 6	0
Wk 7	0
Wk 8	2
Wk 9	3
Wk 10	1
Wk 11	1
Wk 12	4
Wk 13	0

County/Cooperator: LaPorte/Pinney Ag Center

Wk 1	0
Wk 2	0
Wk 3	3
Wk 4	0
Wk 5	17
Wk 6	35
Wk 7	29
Wk 8	5
Wk 9	0
Wk 10	11
Wk 11	87
Wk 12	88
Wk 13	108

County/Cooperator: Lawrence/Feldun Ag Center

Wk 1	0
Wk 2	2
Wk 3	0
Wk 4	1
Wk 5	0
Wk 6	11
Wk 7	3
Wk 8	5
Wk 9	7
Wk 10	12
Wk 11	19
Wk 12	37
Wk 13	13

County/Cooperator:**Randolph/Davis Ag Center**

Wk 1	0
Wk 2	0
Wk 3	0
Wk 4	0
Wk 5	0
Wk 6	0
Wk 7	0
Wk 8	0
Wk 9	0
Wk 10	0
Wk 11	6
Wk 12	2
Wk 13	1

County/Cooperator:**Tippecanoe/Meigs**

Wk 1	0
Wk 2	0
Wk 3	1
Wk 4	0
Wk 5	0
Wk 6	0
Wk 7	0
Wk 8	0
Wk 9	0
Wk 10	0
Wk 11	2
Wk 12	13
Wk 13	21

County/Cooperator:	Tippecanoe/Meigs (Hartstack)
Wk 1	
Wk 2	
Wk 3	
Wk 4	7
Wk 5	548
Wk 6	406
Wk 7	58
Wk 8	13
Wk 9	7
Wk 10	93
Wk 11	256
Wk 12	496
Wk 13	270

County/Cooperator:	Whitley/NEPAC Ag Center
Wk 1	0
Wk 2	1
Wk 3	5
Wk 4	2
Wk 5	17
Wk 6	25
Wk 7	4
Wk 8	0
Wk 9	5
Wk 10	3
Wk 11	9
Wk 12	5
Wk 13	27

County/Cooperator:

Whitley/NEPAC Ag Center (Hartstack)

Wk 1

Wk 2

Wk 3

Wk 4

Wk 5

Wk 6

792

Wk 7

404

Wk 8

137

Wk 9

103

Wk 10

Wk 11

Wk 12

Wk 13

Wk 1 = 4/2/15 - 4/8/15; Wk 2 = 4/9/15 - 4/15/15; Wk 3 = 4/16/15 - 4/22/15; Wk 4 = 4/23/15-4/29/15;

Wk 5 = 4/30/15-5/6/15; Wk 6 = 5/7/15-5/13/15; Wk 7 = 5/14/15-5/20/15; Wk 8 = 5/21/15-5/27/15;

Wk 9 = 5/28/15-6/3/15; Wk 10 = 6/4/15-6/10/15; Wk 11 = 6/11/15-6/17/15; Wk 12 = 6/18/15-6/24/15; Wk 13 = 6/25/15-6/30/15

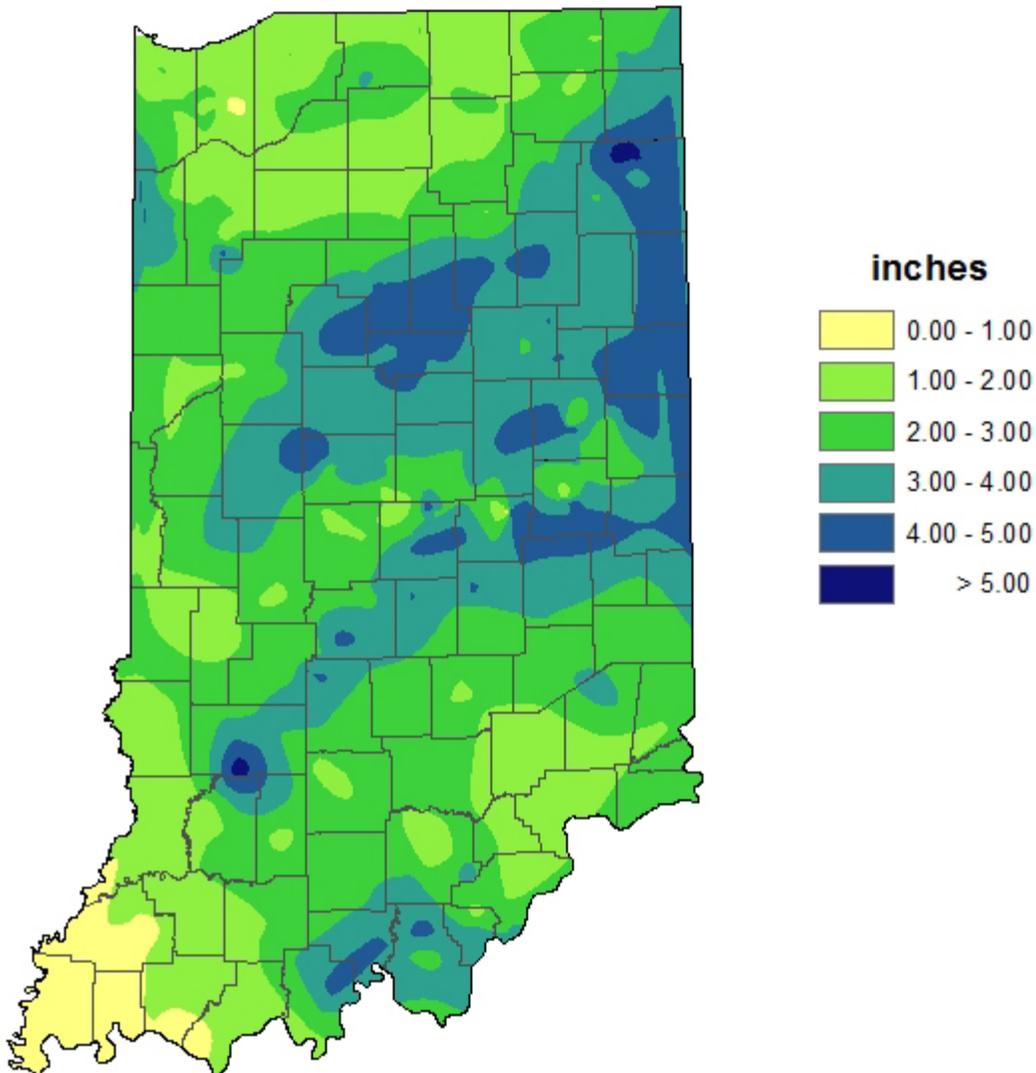
[back to top](#)



WEATHER UPDATE

Precipitation

Total Precipitation June 25 - July 01, 2015 CoCoRaHS network (418 stations)

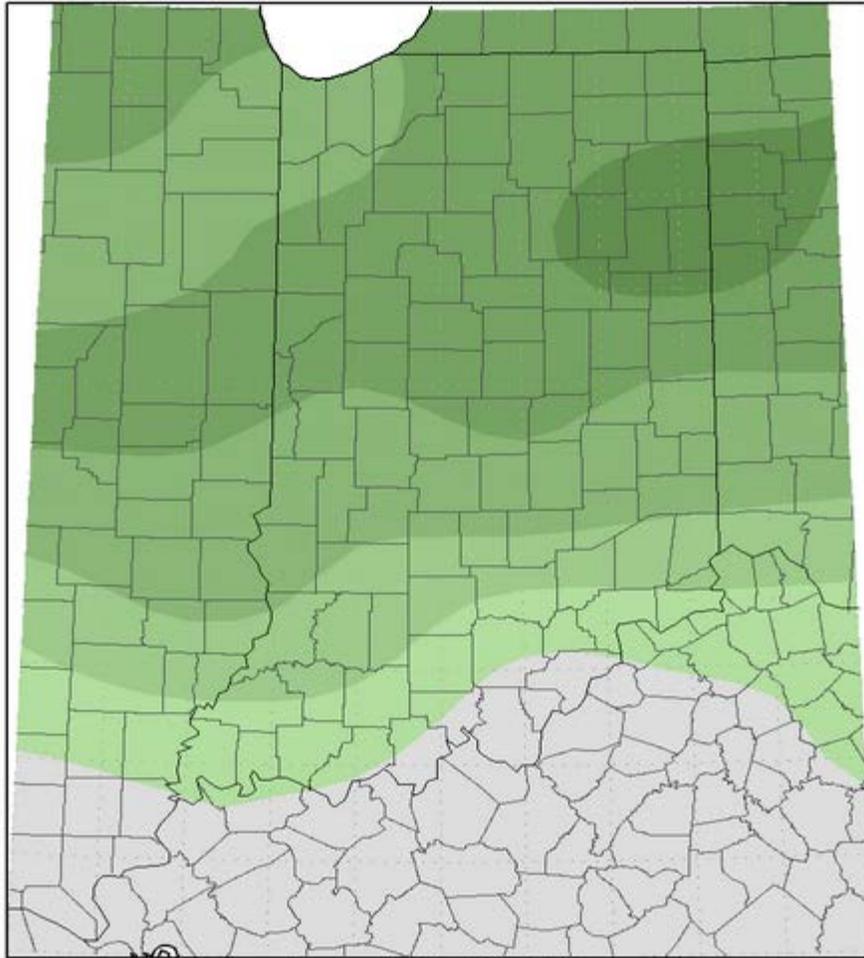


Analysis by Indiana State Climate Office
Web: <http://www.iclimat.org>

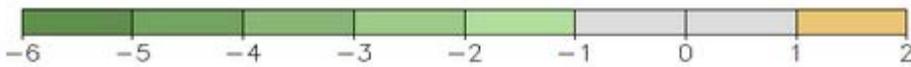
[back to top](#)

Temperature

Average Temperature (°F): Departure from Mean
June 23, 2015 to June 29, 2015



Mean period is 1981–2010.



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

[back to top](#)



Pest&Crop Newsletter

Purdue Cooperative Extension Service

THANKS FOR READING

Contact Information

- Purdue Extension Entomology
901 W. State Street
West Lafayette, IN, 47907
- (765) 494-8761
- luck@purdue.edu
- [@PurdueExtEnt](https://twitter.com/PurdueExtEnt)
- [PurdueEntomology](https://www.facebook.com/PurdueEntomology)

1-888-EXT-INFO

Subscribe

If you would like to be alerted by e-mail when the current issue of the Pest&Crop is available on-

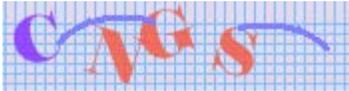
line, please enter your e-mail address and click the submit button.

Name:

Email Address:

Word Verification:

Please enter the verification code as seen to continue.



[Reload Image](#) | [\(Audio\)](#)

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](#)

[Purdue University](#) | [College of Agriculture](#) | [Entomology](#) | [Extension](#)

[Copyright © 2015, Purdue University, all rights reserved, site author Entomology Extension](#)

Website developed by the Entomology Department at Purdue University

[An equal access/equal opportunity university](#)