

Pest & Crop newsletter

Purdue Cooperative Extension Service and USDA-NIFA Extension IPM Grant

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In This Issue

- [European Corn Borer; Scout Tall, Unprotected Corn](#)
- [Armyworm Moth Trapping Ends with Impressive Numbers](#)
- [Armyworm Pheromone Trap Report - 2019](#)
- [Purdue Weed Science Field Day - NEW DATE!](#)
- [Prevented Planting—Turning Lemons into \(Organic\) Lemonade](#)
- [Weed Science Research Associate Position](#)
- [Indiana Climate and Weather Report - 6/13/2019](#)

European Corn Borer; Scout Tall, Unprotected Corn

(John Obermeyer)

Gary Kauffman, a northern Indiana crop consultant, shared with me his observation of European corn borer moth activity this past week. Certainly, these moths have been emerging and actively mating/egg laying throughout the state. The female moths are attracted to many hosts, tall, early lush corn being one. As I drive through the countryside, there are a few islands of corn that match this description. These “trap” crops, if not protected with specific Bt traits, should be scouted for the characteristic shot-hole, whorl feeding. This pest, neglected for some years, has unpleasantly surprised producers that have chosen to forgo traited corn. Fortunately, first-generation corn borer infestations can be treated successfully if caught before larvae enter the midrib of leaves and/or stalk. Happy scouting!



Shot-hole feeding by European corn borer.

Armyworm Moth Trapping Ends with Impressive Numbers

(John Obermeyer)

The Purdue Ag Centers (PACs) throughout the state have faithfully been capturing, and counting, armyworm moths throughout the spring. From the recent surge in moth numbers, it is obvious that the next generation of armyworm has begun. These moths will be attracted to dense, lush grasses of all types. This could be pastures, uncontrolled grass weeds in field crops, or even ornamental grasses at home. Many years, this is the “back 40” that gets planted and neglected because of distance or inaccessibility. Consider, Bt-traits will have little to no suppression of armyworm this late in the season. Because of the current maturity of small grains and grassy cover-crops, they won’t likely be targeted for egg-laying by this surge. Though with this large of a moth flight, there will be unique fields that will be attacked by this pest. Predicting which ones...good luck with that.



Mid July armyworm damage in a late-planted, grassy cornfield.

Armyworm Pheromone Trap Report - 2019

(John Obermeyer)

County/Cooperator	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10
Dubois/SIPAC Ag Center	5	24	91	74	8	3	77	82	153	966
Jennings/SEPAC Ag Center	0	2	9	11	6	1	0	0	67	141

County/Cooperator	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10
Knox/SWPAC Ag Center	105	34	78	200	185	43	42	87	0	241
LaPorte/Pinney Ag Center	0	127	312	52	51	39	186	13	591	87
Lawrence/Feldun Ag Center	148	60	124	327	376	29	134	637	779	860
Randolph/Davis Ag Center	0	193	183	420	446	236	162	50	0	265
Tippecanoe/Meigs	8	5	127	120	361	82	291	251	499	681
Whitley/NEPAC Ag Center	4	191	384	392	1222	739	1349	605	193	310

Wk 1 = 4/4/19-4/10/19; Wk 2 = 4/11/19-4/17/19; Wk 3 = 4/18/19-4/24/19; Wk 4 = 4/25/19-5/1/19; Wk 5 = 5/2/19-5/8/19; Wk 6 = 5/9/19-5/15/19; Wk 7 = 5/16/19-5/22/19; Wk 8 = 5/23/19 - 5/29/19; Wk 9 = 5/30/19-6/5/19; Wk 10 = 6/6/19-6/12/19

Purdue Weed Science Field Day – NEW DATE!

(Bill Johnson), (Bryan Young) & (Marcelo Zimmer)

The **Purdue Weed Science** team is hosting an educational field day for farmers, agricultural industry professionals, Extension educators, consultants and others who apply herbicides.

Due to weather delays in getting plots established, the Purdue Weed Day will be held later this year than in the past. Join us on July 11th at the **Throckmorton Purdue Agricultural Center**, 8343 U.S. 231 S., Lafayette for coffee and donuts and to view our local research.

“Highlights for the event will be Enlist, Xtend, and Liberty Link soybean weed control programs and exploratory work with herbicide tolerance in industrial hemp,” said **Bill Johnson**, Purdue professor of weed science. “In addition, we will have information on waterhemp and giant ragweed control, weed control with cover crops in corn and soybean, and other projects our graduate students are working on.”

Registration will begin at 8:00 AM EDT, and the program will begin at 8:30. We will view the plots on the west side of Highway 231 in the early part of the morning, and at a second site 1 mile east of TPAC during the latter part of the morning. The Throckmorton PAC farm is located approximately 5 miles south of Lafayette on the corner of county road 800S and U.S. 231 South. For those attending the 2019 Purdue Weed Day at Throckmorton, we have applied for 3 CCH’s for category 1. Please register [HERE](#). You may also call Lisa Gross at 765-494-9871.

Prevented Planting—Turning Lemons into (Organic) Lemonade

(Michael O'Donnell)

During this incredibly challenging 2019 planting season, Indiana corn and soybean farmers are faced with difficult planting decisions. We have passed the June 5 date to begin electing prevented planting on corn acres, and the June 20 soybean date is quickly approaching. With more rain in the forecast, we could see substantial acreage across Indiana in this prevented planting scenario. Policy and market dynamics are further complicating these decisions. For farmers continuing to face delays due to saturated soils, prevented planting may appear to be a rather sour outcome in what is already a challenging agricultural economy. Can we turn these proverbial lemons into lemonade?

Farmers with livestock or neighboring livestock operations in need of forage could look at generating some revenue from these prevented planting acres by seeding forage-type cover crops that could be harvested or grazed starting November 1, and still provide a full prevented planting payment (see [RMA prevented planting provisions](#) and speak with your crop insurance agent).

Alternatively, this could be a pathway to transition acreage to certified organic production. Demand for organic grains has been growing for years, driven largely by expansion of organic poultry and egg production. However, domestic production has not kept pace with demand, resulting in significant imports of organic corn and soybeans. According to estimates from Mercaris, 27% of U.S. organic corn supply was imported during the 2017/2018 crop year, while 76% of organic soybean supply was imported ([The Organic and Non-GMO Report, 2019](#)). Prices for organic corn and soybean have sustained premiums over conventional prices, with the latest USDA National Organic Grain Report ([USDA AMS, 2019](#)) pegging feed-grade corn at \$8.73 (8.00-9.75) and feed-grade soybean at \$18.81 (18.00-19.50). Organic field crop acreage has been lagging in Indiana compared to other Midwest states, but we did see approximately 33% increase in acreage from 2016-2018 (USDA NASS, 2017; Mercaris, 2018) as some Indiana grain farmers have looked for higher return opportunities compared to current conventional grain markets.

Three Year Organic Transition Process

A major barrier to entering the organic marketplace is the three-year (or 36-month) transition process mandated by the National Organic Program ([7 CFR 205](#)), where no prohibited substances or methods (synthetic pesticides/fertilizers, GMOs, sewage sludge/biosolids) can be applied to the acreage in transition before it is eligible for organic certification. This presents a financial risk where a farmer must raise crops and manage the acreage without prohibited substances, which often results in reduced yields as the soil and farmer shift to a new management system. Meanwhile, the crops raised in transition must be marketed as conventional. Some farmers find they can sustain decent yields with good management and secure small premiums by raising non-GMO and food-grade crops on contract, but returns are still generally lower in the transition years.

Prevented planting could provide an opportunity to accelerate this process. One important consideration in transition is timing the process to limit risk. The 36-month transition means that a crop can be harvested 36 months after the last application of a prohibited substance. In other words, a crop can be planted while the acreage is still in transition and then harvested once the 36-month transition is complete and organic certification is attained. If the last application of a prohibited substance occurs prior to fall harvest, then 3 years later the crop on that acreage could be harvested as organic, meaning that only two growing seasons must be managed without an organic crop being harvested. Even though this is a 36-month transition process, if timed properly, you would only face two years of marketing transitional crops in the conventional marketplace. With prevented planting, this could “buy” approximately one year of the transition process if no prohibited substances were applied to acreage since the 2018 growing season. Assuming you maintain records of all applications of inputs, these records can serve as documentation for the start of your transition process on a given field. Learn more about the transition process with the following guide from USDA AMS: [“A Guide for Conventional Farmers Transitioning to Organic Certification.”](#)

There are a couple of things to consider before we look at hypothetical transition strategies:

You do not have to transition your entire operation– An operation can have different fields under conventional and organic management, operating as a “parallel” operation. Some farmers maintain both conventional and organic fields over time, while others transition the entire operation in a phased approach with fields transitioned to organic production over time.

Chose fields that are reasonably well-drained, with low weed pressure and good soil fertility– If the field that is in prevented planting this year stays wet in a “normal” year, it’s probably not well suited to organic row crop production given the need for timely cultivation passes to manage weeds. If the field has high weed pressure, challenging perennial weed populations, or poor fertility, it may not be best for immediate transition. It would be wise to address weed challenges and soil fertility issues before initiating the transition process.

If you find yourself in a prevented planting situation on acreage that has not had prohibited substances applied since the 2018 growing season, you could be eligible for organic certification of a crop harvested in 2021. With current prices, most farmers transitioning acreage look to produce corn as their first organic crop to maximize returns following the transition years. ***In a prevented planting situation, how might you plan the transition to be setup for success with an organic corn crop in 2021?***

Organic Transition Strategies to Consider on Prevented Planting Acreage

2020 Wheat

Planting a winter wheat crop in fall 2019 would allow you to generate some revenue in 2020, while creating a large time window for a subsequent cover crop to fix nitrogen for the 2021 corn crop. On the 2019 prevented planting acreage, consider seeding a warm-season legume cover crop (like cowpeas, sunn hemp, or soybean) or cover crop mix to fix nitrogen and provide ground cover this summer. Terminate this cover crop by tillage in late summer or early fall to prepare a seedbed for the fall-seeded winter wheat crop. In 2020, frost seed red clover by mid-March (as soil conditions permit). After wheat is harvested in summer 2020, the red clover should be allowed to flourish and may need to be clipped once in late summer. It is not recommended that you make hay from this clover, as the primary objective is to feed the soil, suppress weeds, and fix nitrogen for the subsequent corn crop. In spring 2021, terminate the red clover by tillage 10-14 days ahead of the intended corn planting date. As an alternative to frost seeding red clover, some organic farmers will drill a multi-species cover crop mix after wheat harvest that includes warm- and cool-season annual legume and grass cover crop species.

2020 Soybean

Alternatively, you could plant a cereal rye cover crop in fall 2019 followed by a soybean crop in 2020, but this strategy leaves little time to plant a nitrogen fixing legume cover crop in 2020 ahead of the 2021 corn crop. If you take this route, plant a short season soybean variety as early as possible, so that it can be harvested in time to provide a window for seeding a cover crop mix with cool-season legumes (like crimson clover and winter peas that could be mixed with oats and radish). This strategy presents a higher agronomic risk compared to other scenarios that provide more reliable windows of time for cover crops to be established, and maximize time for nitrogen fixation ahead of the 2021 corn crop.

2020 Hay

Many farmers prefer to transition acreage with hay. Perennial hay crops can increase soil organic matter, fix nitrogen, suppress weeds,

and generate revenue if you have hay markets. However, hay can deplete nutrients from the soil, particularly potassium and phosphorus. Be sure to identify sources of organic-approved nutrient resources (e.g., poultry litter) and compare the potential returns from hay sales relative to cost of production with maintenance of nutrient levels. To prepare for seeding a hay crop, consider seeding a “fast” warm season cover crop like buckwheat to keep the ground covered, suppress weeds, and capture solar energy until we reach the ideal late-summer hay-seeding window in August. Buckwheat can reach full flower in just 6-8 weeks after seeding, and should be terminated by mowing or tillage before seed production begins. Buckwheat decomposes readily when incorporated as a green manure crop.

Soil Building

Some organic farmers will forego harvesting crops from transitional acreage, focusing instead on soil building. If you don’t need to generate revenue from transitional acreage in 2020, this approach should set you up for the highest likelihood of success with an organic corn crop in 2021. You could seed successions of annual cover crop mixes, incorporating them as green manures, which also creates windows for applying and incorporating soil amendments to address any nutrient deficiencies. Alternatively, when we reach the August 2019 seeding window for hay/pasture, you could seed a diverse mix of perennial legumes and grasses that are clipped a couple times each year, rather than being harvested as hay. If you have the ability to rotationally-graze the transitional acreage with cattle, this option would be a great way to focus on soil building while contributing to the productivity of your livestock enterprise.

Transitioning acreage to certified organic production presents a diversification opportunity for Indiana grain farmers, and prevented planting acreage in 2019 may serve as a means to accelerate the transition process. Should you decide to pursue transition on prevented planting acreage, it is recommended that you review your 2019 cover cropping / cropping scenario with your crop insurance agent to ensure that the plan does not violate the provisions for a prevented planting payment.

Do you have questions about organic transition, certification, and production? Contact Michael O’Donnell, Purdue Extension Educator of Organic & Diversified Agriculture at modonnel@purdue.edu or 765-284-8414. Visit www.purdue.edu/dffs/organicag to learn about upcoming programs and to find more resources on organic production.

Weed Science Research Associate Position

(Bill Johnson)

The weed science program at Purdue University is searching for a research associate to provide support and leadership for our Field and greenhouse research program. See the link below or contact Dr. Bill Johnson if you have questions regarding the position.

Job Summary

Responsibilities for this position will include but are not limited to:

- Planning, directing and conducting field, greenhouse and laboratory experiments related to weed management in agronomic crops; including planning experiments, planting and managing the growth of plants, pesticide applications, collection of data and harvesting
- Working in conjunction with Purdue research personnel in weed science, agronomy and plant pathology, researchers at other universities and at various companies that fund some of this

- research
- Data management and analysis
- Preparing reports that will be submitted to a variety of groups including funding agencies and private industry
- Preparing manuscripts for publication in peer-reviewed journals and other presentations to the scientific community
- Facilitating the research of graduate students in the weed science program by managing research materials, ordering supplies, maintaining instruments and equipment, and coordinating the use of shared greenhouse, field and lab space
- Supervising undergraduate student employees

Required:

- Bachelor's degree in an agronomic or weed science field, M.S. in Weed Science preferred
- 2 years experience in planning, directing and performing greenhouse and field research for weed management and/or crop production
- Experience with data management and analysis
- Experience in preparation of manuscripts and research presentations
- Computer spreadsheet, word processing, graphical presentation, and industry specific software (ARM) skills
- Ability to work independently and supervise undergraduate student employees
- Valid U.S. or Canadian driver's license

Follow this link for more information and to apply for the position.

https://careers.purdue.edu/job/West-Lafayette-Research-Associate-Agricultural-and-Environmental-Sciences-IN-47906/566213700/?locale=en_US

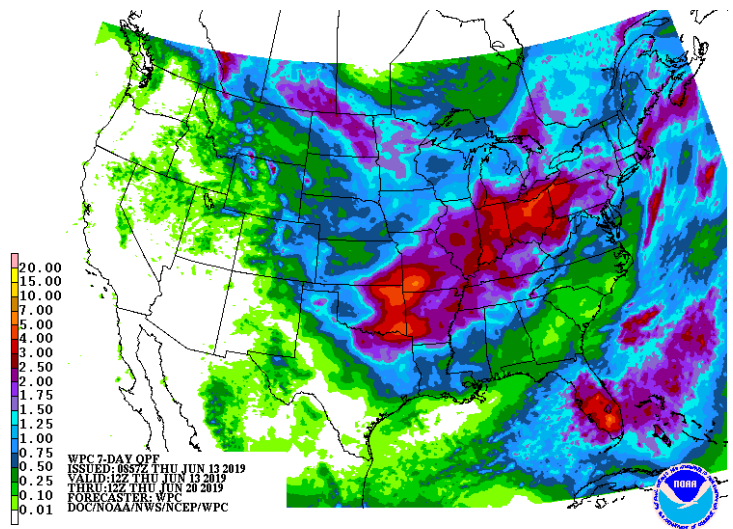
Indiana Climate and Weather Report – 6/13/2019

(Beth Hall)

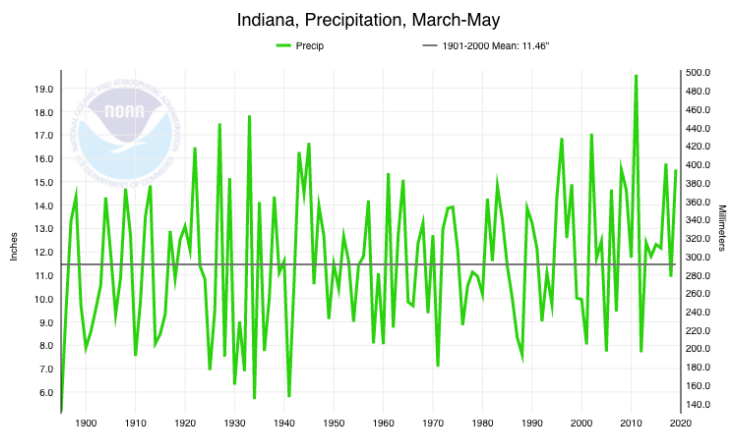
After a welcomed break in the rain for most of the state over the last 7-10 days, that window will close again by this weekend. In fact, the 7-day precipitation forecast (Figure 1) is predicting 2"-4" across Indiana by next Thursday (June 20th). Beyond that date, the climate outlook is showing strong confidence that above-normal precipitation amounts will continue through the following week (June 25th) and into early July. Be prepared for pooling water and potential flash flooding!

How unusual has this spring been for Indiana? Believe it or not, this past March-May came in as the 11th wettest spring (15.52") with respect to the 1895 through 2019 (125 years) time period! The record spring was in 2011 when 19.58" fell across the state (Figure 2). What is interesting to consider is in 2011, after the record-breaking March-June precipitation, the rain all but stopped falling for July through October (Figure 3). Could that happen again this year?

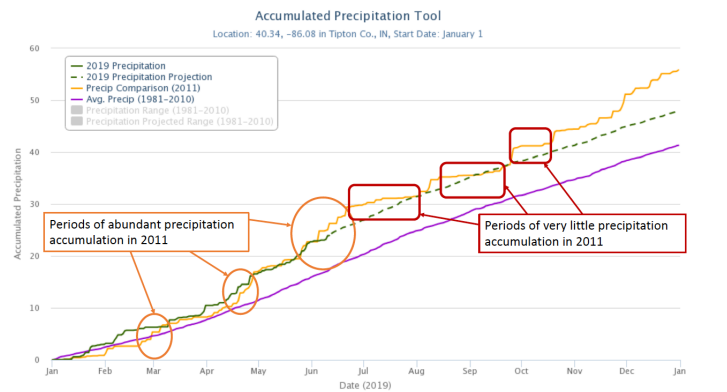
With regard to temperatures, Indiana has been near normal for the first half of June causing accumulated growing degree-days to be within 50 units of normal across the state. Climate outlooks are predicting strong confidence of below-normal temperatures for the end of June into early July.



7-day precipitation forecast representing June 13 – 20, 2019. Source: NOAA Weather Prediction Center.



Time series of state-wide precipitation for Indiana for the spring months of March-May from 1895-2019.



Comparison of precipitation accumulation between 2019 (green line) and 2011 (orange line). Purple line represents the average precipitation accumulation over the 1981-2010 period. The dashed green line represents a projection of the remainder of the 2019 calendar year assuming accumulation follows a rate similar to the climatological accumulation rate. Highlighted circles regions outlined by either circles or rectangles illustrate that while 2011's accumulated precipitation exceeded 2019 leading into summer, the late-summer through mid-fall months experienced very little precipitation.

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