

# Pest & Crop newsletter

**Purdue Cooperative Extension Service and USDA-NIFA Extension IPM Grant**

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## Storm Fronts May Carry More Than Rain

(Christian Krupke) & (John Obermeyer)

- Weather systems originating in the south will often carry insects north with them.

- Potato leafhopper and a wide range of moth pest species (armyworms and cutworms) could be more abundant in coming weeks.

As Tropical Storm Cristobal peters out over the upper Midwest, it's time for a reminder about how many southern insect species recolonize Indiana each year – sometimes on weather fronts just like this one. Weather events that originate from the due south are less common than our typical winds out of the west, and carry different potential for insect pests.

Potato leafhopper doesn't overwinter here, and typically peaks in numbers in the later weeks of June and into July, while feeding on a wide variety of plants – not just potato – and including alfalfa, and many vegetables, fruits, and ornamentals. Like many winged insects, leafhoppers use their wings primarily for dispersal, to colonize new and different areas with more favorable climate and less competition. But wings aren't enough, and to accomplish these long-range migrations, insects "go with the flow" and fly high into the jet-stream where they can be transported passively, by prevailing winds, often for hundreds of miles. carried along by prevailing winds. Where they drop will depend on when a high-pressure system meets a low-pressure system, resulting in rainfall and insect deposition.



Large numbers of potato leafhopper attracted to light at night.

Similarly, fall armyworm, has likely made its arrival to Indiana sooner than its normal assist from late-summer hurricanes originating from the Atlantic Ocean. This armyworm species has many legume and grass hosts, most recognized for feeding in late-planted field/sweet corn and "blasting-out" the whorls or feeding in the ears. Any of you that scouted the many late-planted fields of 2019 likely saw some late-season, and likely non-economic whorl feeding by this pest. Over the past several years, this pest has been tearing through many parts of Africa, where it is finding new hosts and few natural enemies. Fall armyworm is known to be resistant to most Bt-traits, and is historically difficult to control with foliar insecticides if the early window is missed.



Fall armyworm "blasting" to VT corn.

Bottom line – anytime large weather systems move through our area, especially during springtime, there is potential for sudden and

unexpected pest outbreaks to follow. Be vigilant, and happy scouting.

## Armyworm Pheromone Trap Report – 2020

(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	724	84	4	28	108	83	23	20	69	156
Jennings/SEPAC Ag Center	60	75	11	15	35	46	5	9	5	39
Knox/SWPAC Ag Center	1162	308	56	168	64	11	49	129	54	39
LaPorte/Pinney Ag Center	115	65	0	21	455	176	591	1214	214	109
Lawrence/Feldun Ag Center	974	347	57	741	753	416	380	301	81	151
Randolph/Davis Ag Center	117	207	16	51	15	18	104	211	22	22
Tippecanoe/Meigs	225	wind dmg.	6	54	151	221	360	223	12	130
Whitley/NEPAC Ag Center		9		38		214	715	633	128	68

Wk 1 = 4/2/20-4/8/20; Wk 2 = 4/9/20-4/15/20; Wk 3 = 4/16/20-4/22/20;  
Wk 4 = 4/23/20-4/29/20; Wk 5 = 4/30/20-5/6/20; Wk 6 =  
5/7/20-5/13/20; Wk 7 = 5/14/20-5/20/20; Wk 8 = 5/21/20 - 5/27/20; Wk  
9 = 5/28/20-6/3/20; Wk 10 = 6/4/20-6/10/20; Wk 11 = 6/11/20-6/17/20

## Well Now What Do I Do if I Can't Spray A Dicamba Product In Xtend Soybean?

(Bill Johnson) & (Marcelo Zimmer)

By now most of you are aware of the ruling in the 9th Circuit Court that vacates the labels Xtendimax/Fexapan, and Engenia. As of Friday morning, June 5, most regulatory agencies in the states are scrambling to interpret and communicate the short term future of using these products to control weeds in Xtend soybeans to growers in their respective states. The Illinois Department of Ag has issued a stop use and sale of these products. In Indiana, the Office of the Indiana State Chemist will post their guidance at this website - <https://www.oisc.purdue.edu/pesticide/dicamba.html>. Here is the statement that was posted this morning at 9:30 am.

### Dicamba Use in Indiana after June 3, 2020:

If you are reading this, you are probably already aware that on June 3, 2020 the United States Court of Appeals for the Ninth Circuit issued an opinion vacating the federal registrations for the dicamba herbicides Engenia (EPA Reg. No. 7969-345), FeXapan (EPA Reg. No. 352-913), and Xtendimax (EPA Reg. No. 524-617). The federal registration for Tavium (EPA Reg. No. 10-1623) is NOT impacted by this opinion.

[View the opinion](#) (pdf, 237kb)

So regulatory compliance questions already asked of OISC include: 1) Can these three products still be sold and distributed in Indiana? 2) Can these three products still be used in Indiana? The following status and guidance is being provided for Indiana dealers, distributors, and users/applicators. **BECAUSE THIS GUIDANCE CAN CHANGE SIGNIFICANTLY ON A DAILY BASIS, YOU ARE ENCOURAGED TO VISIT THIS SITE FREQUENTLY.**

1. OISC has contacted U.S. EPA for federal guidance, but at this time has received none. This could change at any time.
2. These three products currently have state registrations with OISC. The Court's opinion did not address state registrations for these products. Indiana pesticide law does not currently require federal registration as a condition of state registration. OISC has not initiated any suspension or cancellation orders for these products at this point. Therefore, the state registrations are still valid until any necessary suspension or cancellation process can be taken.
3. Until further notice, under state pesticide law, these products can continue to be distributed and used in Indiana.
4. The state registrations for these products require that use may NOT occur after JUNE 20, 2020, regardless of any other state or federal action on these registrations.
5. **AGAIN, BECAUSE THIS GUIDANCE CAN CHANGE SIGNIFICANTLY ON A DAILY BASIS, YOU ARE ENCOURAGED TO VISIT THIS SITE FREQUENTLY FOR UPDATES.**

In the short term it would be prudent to make alternative plans for postemergence weed control in Xtend soybeans.

- The ruling affects Xtendimax/Fexapan and Engenia, but not the Tavium product (dicamba + metolachlor). As of today, OISC is allowing Xtendimax/Fexapan and Engenia to be distributed and

used. But that could change on short notice. If OISC stops the sale and use of these products, there is still one dicamba product (Tavium) that can be applied up to June 20. However, keep in mind the cut off date for Tavium is the V4 stage of soybean growth, and many fields are probably past the stage.

- For fields that have waterhemp, the most broad spectrum herbicides that can be tank mixed with glyphosate for control of glyphosate and ALS resistant weeds will be fomesafen, lactofen, or acifluorfen. Remember that these are group 14 (PPO inhibiting) herbicides and will not control PPO resistant waterhemp that is very prevalent in some, but not all parts of the state. These herbicides will also help with controlling morningglories.
- For fields that do not have waterhemp, the group 14 herbicides mentioned above will help with many broadleaf weeds, but will be weak on marestail, lambsquarter, and large giant ragweed.
- For fields that have giant ragweed and marestail that is not ALS resistant, cloransulam or chlorimuron can be used.
- If you have giant ragweed and marestail that is glyphosate and ALS resistant, your best bet is to apply the highest rate of glyphosate allowed by the label and tank mix a ½ rate of cloransulam and a ½ rate of chlorimuron with it and have a hand weeding crew ready for deployment.
- For fields that have lambsquarters, a product that has thifensulfuron, imazamox, or flumiclorac in it will help.

At this time this is the best advice we can offer for control of these weeds in Xtend soybean. The use of these alternative products will require more thought and planning than we have grown accustomed to. It won't be as simple as just dumping something different in the tank and heading to the field to spray away. Keep in mind that sprayer set up with the proper nozzles, carrier volume, and adjuvants will be key components for these alternative herbicide applications to be successful.

## Birdsfoot Trefoil – An Underutilized Pasture Legume

(Keith Johnson)

Article is in memory of Henry Mayo, Purdue University Extension Sheep Specialist and a birdsfoot trefoil advocate.

You don't see birdsfoot trefoil in many Indiana pastures. This perennial legume is in full bloom now with obvious bright yellow-orange flowers. The positive characteristics of this forage makes this legume worthy of consideration. Overgrazing must be avoided if birdsfoot trefoil is to survive. Basal leaves must not be grazed if birdsfoot trefoil is to remain in the pasture. With many livestock producers utilizing rotational stocking and better awareness that overgrazing should be avoided, this forage has a place in many Indiana pastures.

Information that follows about birdsfoot trefoil is from the Purdue Forage Field Guide (ID-317) with some modifications. Pictures were provided by the Purdue University Crop Diagnostic Training and Research Center.

**Minimum Soil Requirements:** Somewhat poorly drained, medium fertility, pH 6.0-6.8.

**Plant Characteristics:** Perennial legume. Has taproot and yellow-orange flowers. Grows 15-44 inches tall. Appears to have five leaflets per leaf, but the two at the base of the stem are considered stipules by



some agronomists. Has high palatability, good winter hardiness, and fair drought tolerance. Maintains quality better than many other legumes because of a high leaf to stem ratio. If needed, deferring grazing until viable seed are present in seedpods can increase birdsfoot trefoil composition.



Yellow blossoms appear with long day/short night hours.



Leaf arrangement of birdsfoot trefoil.



Birdsfoot trefoil umbel inflorescence.



Birdsfoot trefoil seedpod with immature seed.

**Seed Characteristics:** Seeds per pound: 370,000. Emergence time: 7 days. Optimal germination temperature: 68°F. Seeding dates: March 1-May 1 or August 1-September 1. Pure live seed per acre: 4-6 pounds. Inoculate seed with a specific rhizobia bacteria.





Birdsfoot trefoil seed.

**Uses and Comments:** A good complement with adapted cool-season grasses when used as pasture. **Not a bloat concern.** Some varieties are better for pasture as they are less erect in growth than those varieties best used as hay.

**Distribution:** The Upper Midwest and Northeast USA.

**Cautions:** Disease is a concern in high-humidity, high-temperature environments. **For best persistence, make sure basal leaves are present after grazing or cutting.**

If livestock producers have concern about bloat and do not permit their livestock to overgraze the forage, birdsfoot trefoil may be a worthy legume to include with cool-season grasses.

## Hemp Planting Continues Across Indiana

(Marguerite Bolt, [mbolt@purdue.edu](mailto:mbolt@purdue.edu))

Hemp planting continues across the state. Most grain and fiber growers have gotten their seed in the ground, but cannabinoid (CBD, CBG, etc.) growers continue to transplant. The drier weather has helped growers get in the field earlier than the 2019 season. New hemp applications continue to come through the state chemist office, but largely consist of small CBD grows.

Growers should expect to manage weeds early in the season to keep pressure low. The two herbicides available for use in hemp are for between row applications only. CBD growers may like these products but they will not work for grain or fiber growers because of the tight row spacing. You can find more information on the pesticides available for hemp here

[https://www.oisc.purdue.edu/pesticide/pdf/pest\\_hemp\\_product\\_list.pdf](https://www.oisc.purdue.edu/pesticide/pdf/pest_hemp_product_list.pdf).

We continue to find flea beetles in feral hemp populations, with over ten beetles per plant. We do not have a flea beetle threshold for hemp at this point. An artificial defoliation project in Virginia demonstrated that hemp grain yield was not affected by even high levels (75% leaf tissue removed) of defoliation, even as early as 20 days after planting (Britt and Kuhar 2019). They did conclude, the possibility that feeding injury could elicit different plant responses, like changes in chemistry. Hemp does appear to be a durable plant, able to handle large amounts of tissue removal. Defoliators like flea beetles are not the biggest concern at this point.

A more destructive pest for growers is the Eurasian hemp borer (EHB). As promised, I will continue to give updates on the progress of this pest.

An adult moth was found in Jasper County on May 27th. EHB larvae were found on June 9th in the same patch as the adult moth. They are incredibly tiny larvae and while some evidence of infestation is detectable through bulges in the stem, I found quite a few larvae at the terminal ends of plants. Minor dieback can be observed with a keen eye, but a hand lens may be helpful, especially for observing young larvae.

### Select Reference

Britt K and Kuhar T (2019) Effects of Defoliation in Grain Hemp. Science of Hemp Proceedings.



Eurasian hemp borer larva at the terminal end of a feral hemp plant. Jasper County, 6/9/20.



Bulge in the hemp stem caused by Eurasian hemp borer larvae.

## Is Drought In Our Future?

(Beth Hall)

The forecasts and climate outlooks over the next several weeks is calling for below-normal precipitation and above-normal temperatures (Figure 1). This could lead to rapid drying of soils and vegetation. There is some hope that this dry period will be short lived, with outlooks providing some confidence that above-normal precipitation may occur after June 20<sup>th</sup>.

The U.S. Drought Monitor (<https://droughtmonitor.unl.edu/>) is the national resource for tracking abnormally dry and drought conditions as well as monthly and seasonal drought outlooks. The June drought outlook, released May 31<sup>st</sup>, does not indicate the likelihood of drought

developing in the Indiana region. This may be good news as these outlooks often include larger-scale atmospheric patterns that would increase confidence of longer periods of dryness that would lead to the development of drought. Therefore, while we could be entering a period of dryness, there are no obvious indicators that this will be the beginning of a significant, long-lasting drought.

Temperatures have been warm with high humidity this past week, mostly due to the remnants of Tropical Storm Cristobal passing through the Midwest. However, a cold front is expected to follow that will bring drier and cooler temperatures to the area. Growing degree days are still lagging behind throughout Indiana, but are gradually catching up to past years.

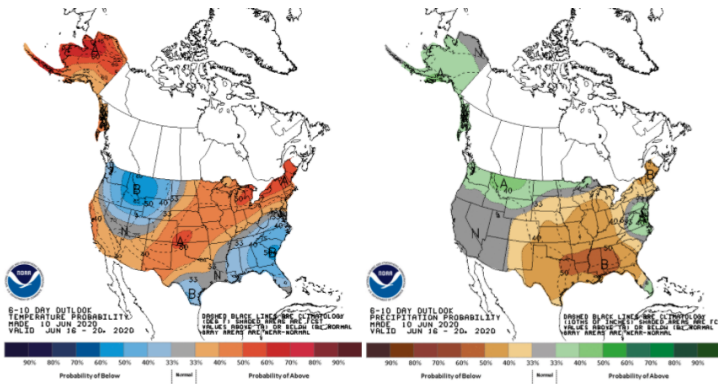


Figure 1. The 6-10-day climate outlook representing June 16-20 showing increased confidence of above-normal temperatures (left) and below-normal precipitation (right) over Indiana.

Growing Degree Day (50 F / 86 F) Accumulation

April 1 - June 10

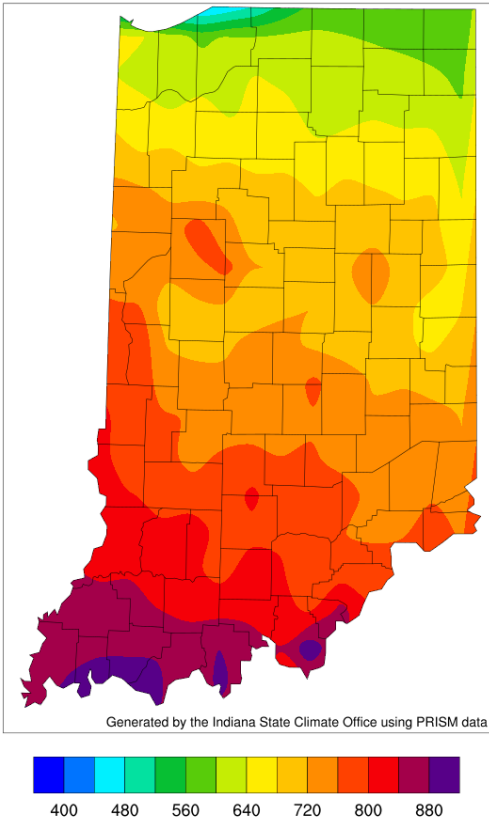


Figure 2. Accumulated modified growing degree days from April 1 - June 10, 2020.

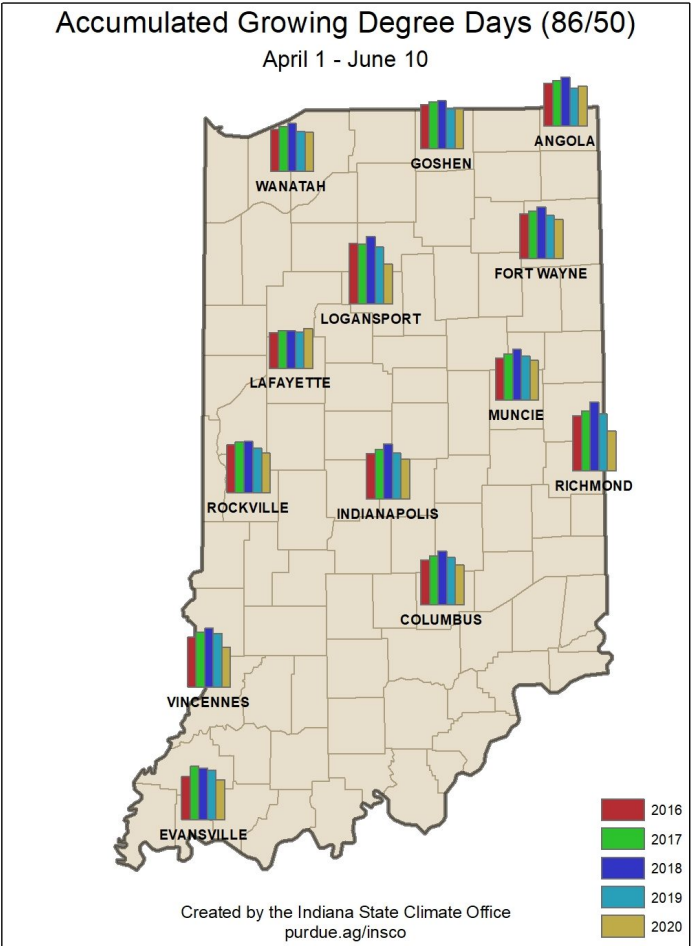


Figure 3. Comparison of accumulated modified growing degree days from April 1 - June 10 for 2016 through 2020.

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