

# Pest & Crop newsletter

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

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## Soybean Defoliating Caterpillars Late in the Season

(John Obermeyer) & (Christian Krupke)

The painted lady butterfly, *Vanessa cardui*, is mostly orange mottled with black and white markings. This is a migratory species flying from and to Mexico and the Southwestern United States in the spring and fall. Adults arrive in Indiana in the spring and lay their eggs on several species of plants. Although they feed on many weed species, their preferred host is Canada thistle. Several generations occur in Indiana before they begin their migration southwestward in the fall. The larvae, known as thistle caterpillars, are generally dark in color, with conspicuous yellowish markings on their bodies. The larvae are covered with many branching spines. Larvae reach a length of about 1-1/4 inches. The larvae feed within webbed enclosures on the upper leaves and may defoliate entire patches of weeds and feed in a similar manner on soybean. For reasons unknown, this species has been higher in numbers throughout the Corn Belt this season, some reported near treatment threshold levels. Fortunately, they are usually clumped in distribution and not threatening whole fields.



Thistle (painted lady) caterpillar within webbing on soybean.



Painted lady butterfly feeding on clover.

Green cloverworm is a sporadic foliage-feeding pest of soybean and is potentially destructive through September, especially this year with so many late-maturing fields. The larva has a narrow white stripe on each side of its body and four pairs of prolegs. Early larval instars skeletonize the underside of soybean leaves, leaving the upper leaf surfaces intact. More mature larvae consume all leaf tissue, leaving only the major veins and giving the plants a ragged, hail-damaged appearance. Green cloverworm larval populations usually do not reach damaging levels due to their susceptibility to attack by parasites and pathogens. High larval populations now may result in large numbers of moths flying in a couple weeks. These black moths are attracted to lights at night and can become quite a nuisance around homes and buildings.



Green cloverworm feeding on soybean.



Silver-spotted skipper caterpillar revealed from unrolled soybean leaves.



Green cloverworm moth in clover.



Silver-spotted skipper butterfly.



Diseased green cloverworm.

Why does the woollybear caterpillar cross the road? The white, yellow or brown “woolly” or furry worms range in length from 1/4 to 2 inches. Mature larvae leave the plant, seek a protective place, and pupate inside a thin silken cocoon which is covered with the hairs from their bodies. There are two generations per year, with only the second or mid season larval population posing a potential threat to soybean...which occasionally happens. Usually, when populations increase they succumb to epizootics, meaning they become diseased. The adults, known as tiger moths, can commonly be seen in the spring and mid summer at night near bright lights. These moths, with a 1-1/2 to 2-inch wing span, have snow-white, yellowish, or white and black-spotted wings with abdomens that are white to yellow.

The creepy looking caterpillar award goes to the silver-spotted skipper, *Epargyreus clarus*. These larvae are up to 2 inches in length, have brownish-red heads with two orange spots and a yellowish-green body. Larvae can often be found in leaves that have been rolled together and held by the caterpillars’ silken threads. Feeding damage is generally localized to a few surrounding plants. Adult skippers, which are commonly seen feeding on flowers late in the summer, have an obvious silver-white splotch on each wing.



Woollybear caterpillar feeding on soybean.



Tiger moth, woollybear caterpillar adult, found on soybean leaf.



Diseased woollybear caterpillar.

Defoliation treatment thresholds are greater than 15% during pod fill (R4-R5) and greater than 25% once seed is full size (R6).

## 2019 Corn Earworm Trap Report

(Laura Ingwell)

## 2019 Corn Earworm Trap Report

[Click here for recent catch information](#)



## Field Crop Update for Indiana

(Darcy Telenko)

### **Soybeans**

We are starting to see a number of diseases in soybean across Indiana. This week in our plots in both northern and southern Indiana initial foliar symptoms of sudden death syndrome are making an appearance. In addition, we continue to see frogeye leaf spot and Septoria brown spot – the levels of both of these diseases were very low and our soybean are about R4 (beginning pod) to R5 (full pod). I suspect that if we continue to receive intermittent rain, we might start to see a bit more disease in soybean.

### **Corn**

**Tar Spot** - We have confirmed 11 counties with active tar spot as of August 28 for the 2019 season. These counties all had a previous history: Elkhart, Jasper, Kosciusko, La Porte, Lagrange, Lake, Marshall, Noble, Porter, Pulaski, and St. Joseph (figure 1). I have included the 2018 tar spot map from Indiana for your reference (figure 2), as we are starting to find multiple fields, some heavily infested with tar spot, in northern Indiana. I have scouted fields that have 100% of the plants infected with stroma (black spots) ranging from a few on a leaf to >40% severity (figure 3). Unfortunately, the sites where we are seeing the highest severity were those that were planted early, before the wet spring, and have had good moisture all season. Luckily, at least the sites I have been in thus far, the corn has reached R5 and we hope it has minimal effect on yield. That being said, please keep a close eye on your late plantings. We have seen variable symptoms from a few stroma (black spots) on a leaf to many (figure 3). We again are requesting if you have any suspect locations to please update us and send a sample. I am especially interested in those counties we have yet to scout or receive a sample. Even if your county is red, I am also interested in learning if you have tar spot on your farm and what you

might be seeing - feel free to send me an email/photo at [dtelenko@purdue.edu](mailto:dtelenko@purdue.edu) or call 765- 496-5168.

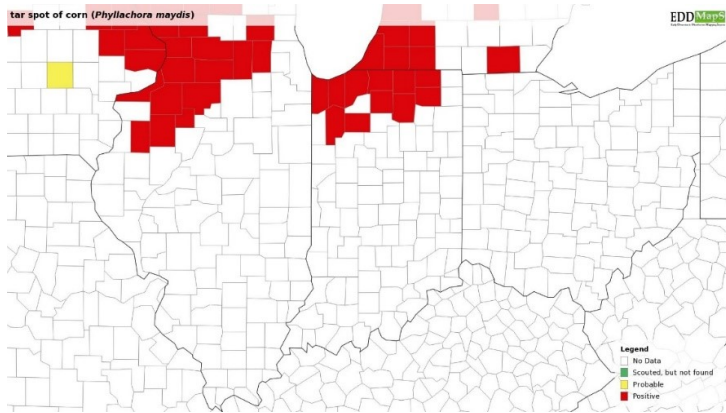


Figure 1. Map of counties confirmed for tar spot as of August 28, 2019.

**Tar Spot Distribution**

■ 2018 Positive Confirmation

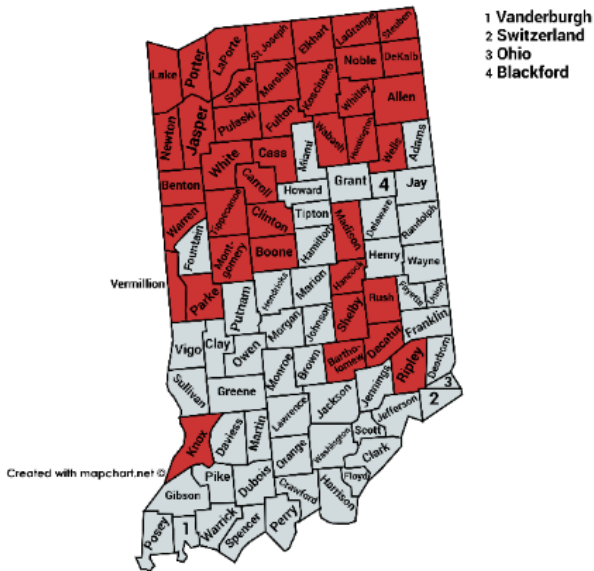
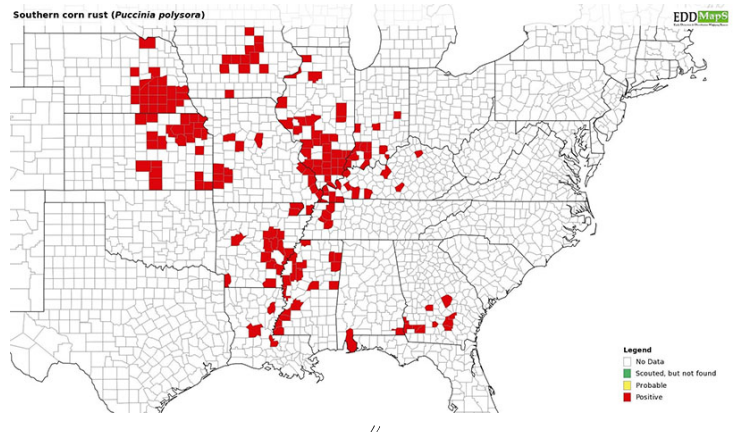


Figure 2. 2018 tar spot distribution in Indiana. Red counties indicate tar spot was confirmed.



Figure 3. Tar spot symptoms on leaves both on the lower and the upper canopy, on husks, and causing the lower canopy to rapidly senesce (dry up). (Photo Credit: Darcy Telenko)

We have added one new county, Floyd, to the **southern rust** map in Indiana since my last report. As a reminder, it has been confirmed in 12 counties in Indiana (figure 4). These include Daviess, Dubois, Floyd, Gibson, Henry, Knox, Martin, Morgan, Posey, Spencer, Vigo, and Washington counties and suspected in Sullivan and Putnam. Keep scouting and if you suspect it, please send a sample to the Purdue Plant Pest Diagnostic Lab (PPDL). Southern rust can cause significant yield loss if it builds up to high levels during silking and corn fill. Therefore, it is very important to keep a close eye out for this disease this season to make timely management decisions.



# “New” Pest Of Hemp May Have Been Here For Years

(Marguerite Bolt, mbolt@purdue.edu)

As the growing season progresses and hemp farmers gear up for harvest, we are continuing to learn more about pests and pathogens affecting hemp in Indiana. Some of these pests and pathogens have not been previously found in hemp research plots, however, we have naturalized hemp (aka ditchweed) that could give us a better idea of what may attack cultivated hemp across the state. With this in mind, I went out to a population of ditchweed in Jasper county to try and find Eurasian hemp borer (*Grapholita delienseana*), a pest causing economic loss in Colorado. Educators in Wisconsin have positively confirmed Eurasian hemp borer (EHB) in CBD hemp, so I was not surprised to find larvae and pupae in ditchweed (Figure 1). I did not observe any adults in the ditchweed patch, but I did find adults on CBD plants at one of the farms nearby (Figure 2).



Figure 1. Top: Boring damage in ditch weed.



Figure 1. Bottom: Eurasian hemp borer (EHB) larva, notice the pink hue.

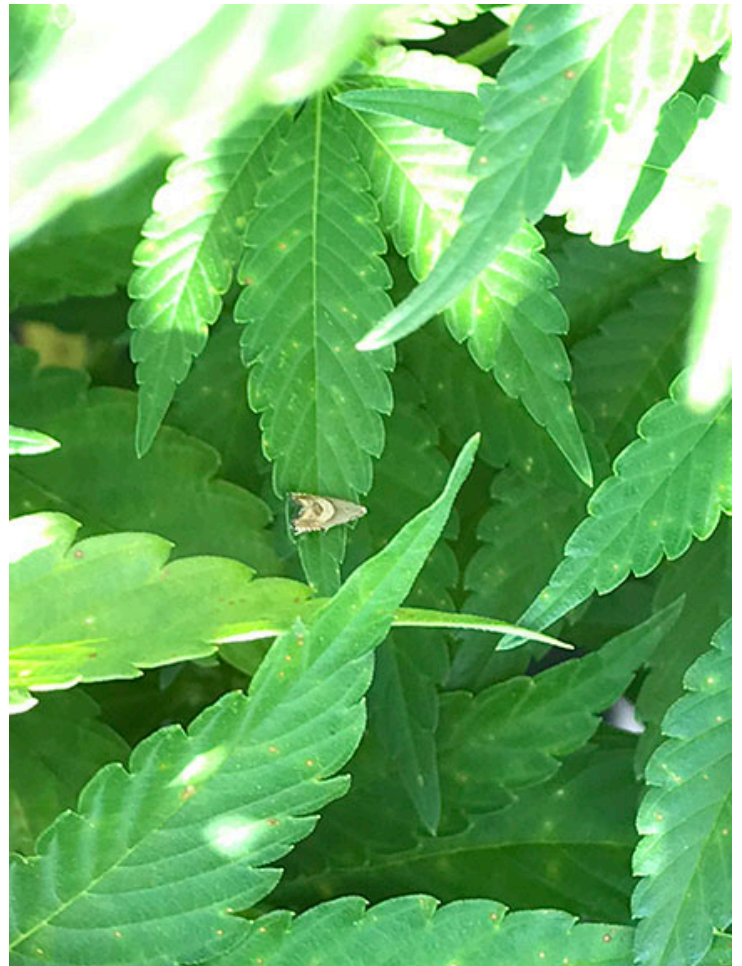


Figure 2. Adult EHB found in a CBD hemp field.

EHB is concerning to hemp growers because of its feeding behavior. Larvae bore into the stems and when boring is near the base of developing hemp flowers, direct damage to the flowers can occur. In CBD hemp production, growers are trying to maximize the size of the flowers since the highest concentration of glandular trichomes (which produce the CBD) are found on the female flowers. Growers should be on the look out for adults and for stem and flower damage.

In Colorado, it appears that EHB has three generations (Cranshaw, CSU hemp fact sheets), and the third generation of larvae are causing the most economic damage. I found EHB larvae on August 23<sup>rd</sup> which also coincides with female flower development for many of the CBD growers in the state, but I have not gotten reports of EHB damage yet. While there are no chemical control options, Cranshaw recommends removing hemp residue from the field after harvest because EHB overwinter as full-grown larvae. He also believes that larvae can use alternate hosts, like hops and knotweed, for overwintering. CBD growers are typically walking their fields to find male plants, they should take additional time to note any damage to the plants.

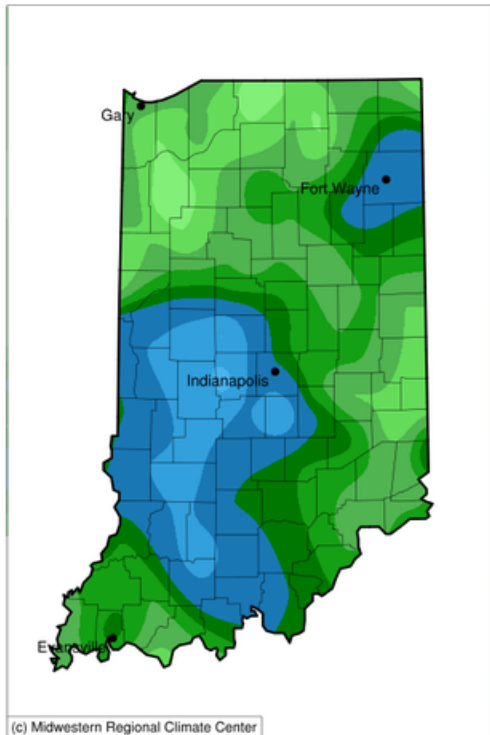
To learn more about Eurasian Hemp Borer, please see CSU hemp fact sheet [https://webdoc.agsci.colostate.edu/hempinsects/PDFs/Eurasian%20hem%20borer%20September%202018%20rewrite\(1\).pdf](https://webdoc.agsci.colostate.edu/hempinsects/PDFs/Eurasian%20hem%20borer%20September%202018%20rewrite(1).pdf)

8/29/2019

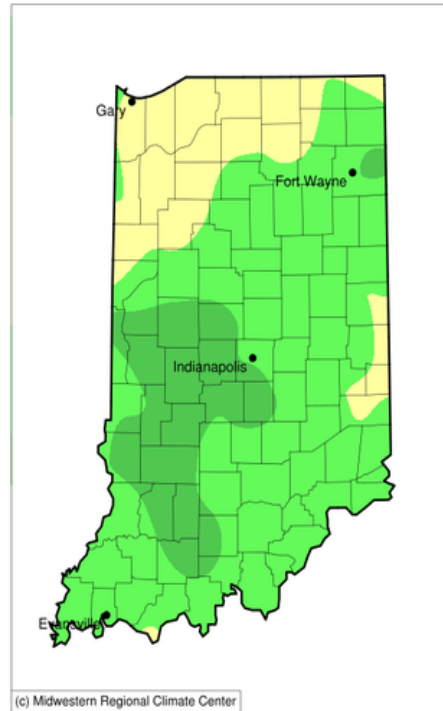
(Beth Hall)

The big story this week was the much-needed rain throughout most of Indiana that fell on Monday (August 19<sup>th</sup>). Since August 15<sup>th</sup>, this brought up to 5" of precipitation throughout west-central, southwest, and northwest Indiana (Figure 1). This was 2"-4" above normal for the past 2 weeks (Figure 2)! However, as we transition into September and hope temperatures stay warm to accelerate plant growth and catch up from a late-planting spring, climate outlooks are predicting higher probabilities for below-normal temperatures. Precipitation amounts are predicted to be neither above- or below normal for the first week of September, but should shift to higher probabilities of above-normal precipitation by the second week. Abnormally dry conditions continue throughout the state, but have not intensified. Where there was less rain earlier this week, relative soil moisture within the 10-40 cm depth remains below normal (Figure 3).

**Accumulated Precipitation (in)**  
August 15, 2019 to August 28, 2019

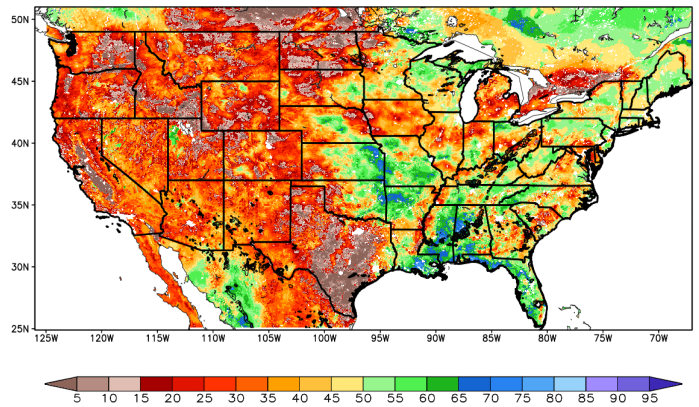


**Accumulated Precipitation (in): Departure from 1981-2010 Normals**  
August 15, 2019 to August 28, 2019



Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI,  
Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 8/28/2019 2:44:47 PM CDT

**10-40 cm Relative Soil Moisture (available water; %)** valid 00z 28 Aug 2019  
Precipitation in previous hour (1,2,5,10,15,20,25 mm contours)



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