PURDUE UNIVERSITY | Extension ENTOMOLOGY

Pest&Crop newsletter

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In This Issue

Black Moths Fluttering About Everywhere!

(John Obermeyer) & *(Christian Krupke)*

Most likely you have seen some black moths flying around farms, homes, and yards, especially to lights at night. This one prompts questions from time to time as we have “outbreak” years of this non-pest. These moths are actually mottled grayish-black and when at rest they have the triangular shape of a stealth fighter jet. These are likely the adult green cloverworm (Noctuidae: *Plathypena scabra*).

The slender green caterpillars feed on soybean foliage, as well as alfalfa, clover, and other leguminous plants – there are a great many of these plants around the Indiana countryside! Normally, fungal pathogens, as well as insect parasites and predators, keep green cloverworm populations at low levels in soybeans. For unknown reasons, those natural controls were not as effective this year and allowed the cloverworms to increase in number. The result is lots of the adult moths flying around lights and residences.

These moths are only a nuisance and will not harm people, houses, or yards . The moths will pass the winter in leaf litter and/or other sheltered areas and next spring the survivors will emerge and begin egg laying. They are not generally a pest in Indiana, but you can probably find a few in each soybean field if you look hard enough.

Green cloverworm moth on a window screen.

Armyworm Sneak Attack

(John Obermeyer) & *(Christian Krupke)*

There have been multiple enquiries over the last week concerning corn leaves and forage grasses disappearing! Areas of fields just completely denuded. Specialty and yellow dent non-Bt corn, as well as, many species of forage grasses were on the menu! Those inspecting the damaged areas found mostly frass (insect poop) all over the ground. In all situations, the damage was found too late for treatment considerations, as the few remaining true armyworm (*Pseudaletia unipuncta*) found were mature and soon to pupate.

Damage from armyworm late in the season is unusual, as we think of this pest only occurring in the spring. Normally, parasitic wasps/flies and disease pathogens, keep this pest from building up populations once temperatures and humidity rise. As we have heard many times this season from folks, “this is a strange year.”

The next generation of emerging armyworm moths, along with a similar species, the fall armyworm (*Spodoptera frugiperda*), from the Gulf States, will be looking for lush, green vegetation late this summer/early fall…think newly planted forages or cover crops. This might be the year to give these crops special attention once they are up and established. Happy scouting!

Armyworm defoliation to blue corn. (Photo credit: Matt Stine, Nicholson Consulting)

Armyworm damage to weedy, non-Bt corn (right) and negligible feeding on Bt corn (left).

Field Crop Update For Indiana

(Darcy Telenko)

Soybeans

We are starting to see a few diseases in soybean across Indiana. Foliar symptoms of sudden death syndrome and brown stem rot are also making an appearance, make sure you cut open the stem to verify. As a reminder, brown stem rot will cause a discoloration of the pith, while sudden death syndrome causes a discoloration of the vascular tissue (Fig. 1). 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.

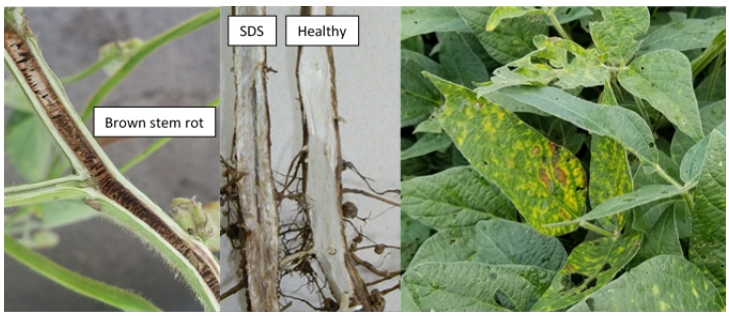

Figure 1. Discoloration of pith by brown stem rot, discoloration of vascular tissue by sudden death syndrome (SDS) verses a healthy stem, and foliar symptoms of either SDS or brown stem rot.

Corn

Tar Spot – We have confirmed seven counties with active tar spot as of August 12 for the 2020 season. These counties all had a previous history: Porter, LaPorte, St. Joseph, Elkhart, Marshall, Fulton, and Cass (Figure 2). Gray colored counties on the map are those we have found tar spot in previous years. In northern Indiana, we are starting to find multiple fields with tar spot beginning to move up in the canopy. I have scouted fields that have 100% of the plants infected with stroma (black spots) ranging from a few on a leaf to 5% severity. The sites where we are seeing the highest severity were those that had a significant history of tar spot and have had recent rain or irrigation. That being said, please keep a close eye on your fields. A well-timed fungicide application up to R3 will help reduced disease and protect yield.

Southern Corn Rust – We have added seven new counties this week to the **southern rust** map in Indiana since my last report. As a reminder, it is confirmed now in 14 counties in Indiana (figure 3). These include Gibson, Knox, Spencer, Perry, Lawrence, Jennings, Johnson, Boone, Benton, Tippecanoe, Randolph, Whitley, and St. Joseph. 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.

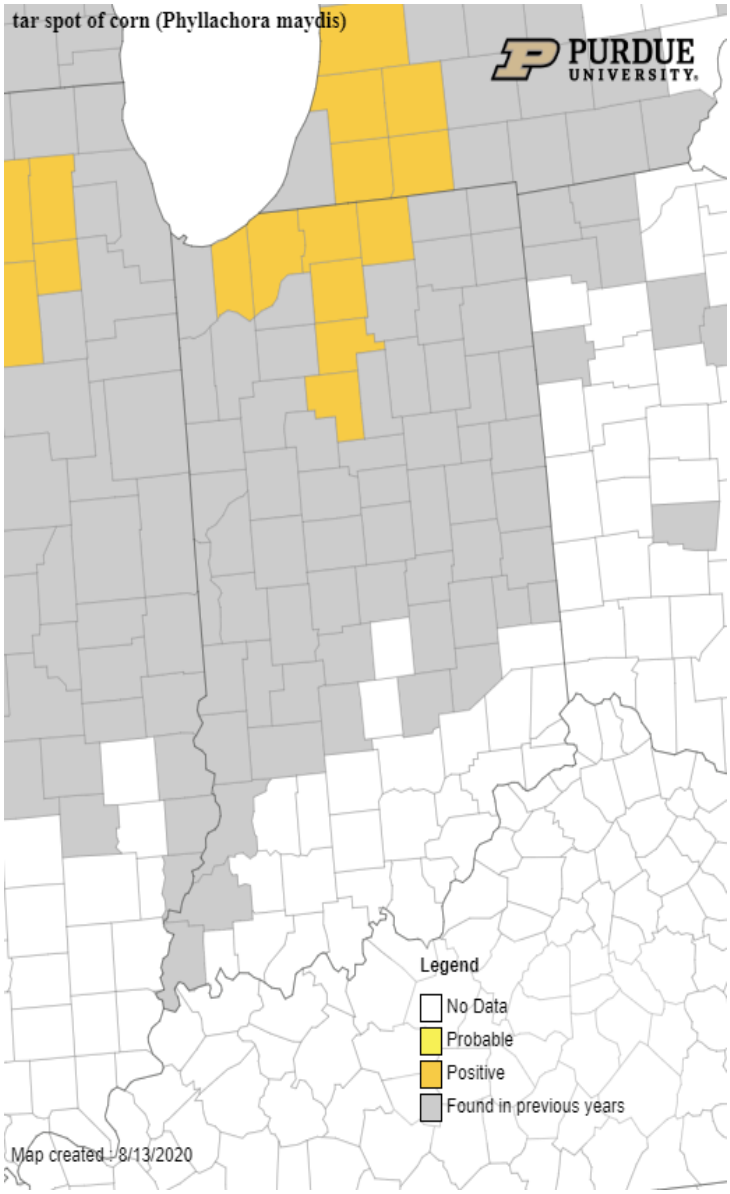

Figure 2. Map of counties confirmed for active tar spot in Indiana as of August 13, 2020. Gray counties are those that we have found tar spot in previous years.

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We again are requesting if you have any suspect locations to please update us and send a sample for both tar spot and southern corn rust. I am especially interested in those counties we have yet to scout or receive a sample. Even if your county is yellow, 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 or call 765- 496-5168.

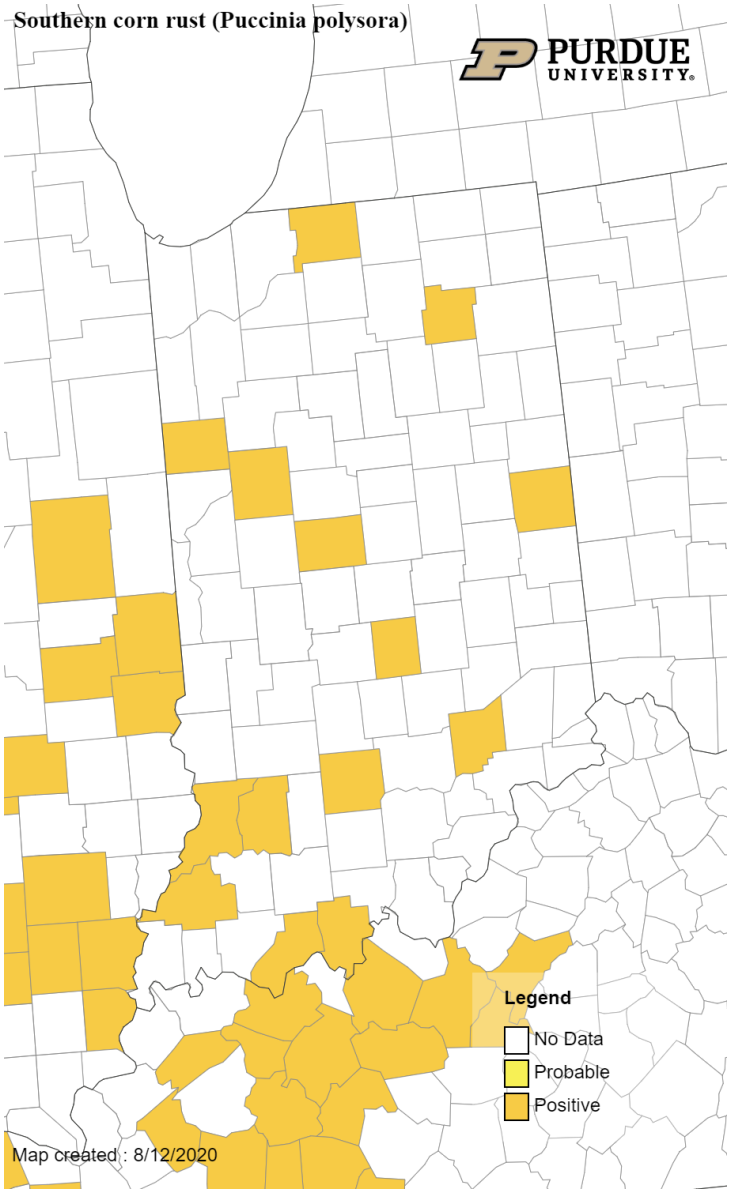

Figure 3. Map of counties confirmed for southern corn rust in Indiana as of August 12, 2020.

Sheep Refusal to Eat Hay Emphasizes The Importance Of Using Your Senses To Evaluate Hay

(Keith Johnson)

I received a phone call from a shepherd many years ago. He was confused as to why his ewes refused to eat what appeared to be beautiful alfalfa hay. I asked the shepherd to send me a couple of representative flakes from the small square bales the ewes did not want to eat.

Several days later, a sturdy brown box arrived from the shepherd. I opened the box and inside was some beautiful alfalfa hay; emerald green, late bud to early flower and great leaf retention. Very visually appealing hay. Why would any sheep refuse to eat such a fine specimen I asked myself as I moved my hand towards the hay in the box? Ouch! Within the beautiful smelling hay was a trace of Canada thistle, a very small trace, which was not visible to my eye. The spines on the thistle pierced my skin and several spines remained as I quickly withdrew my hand from the hay.

I called the shepherd back and told him what I had found in the hay. He said he would call me right back after he made a trip to the barn to inspect the mouths of his ewes. Within 30 minutes the shepherd called me back and reported that the mouths of the ewes were definitely irritated. If you can feel empathy for sheep, I was experiencing this emotion. I would refuse to eat this hay, too, even though a laboratory analysis would likely show that it had a protein content over 18 percent and a total digestible nutrient content in the mid 60's.

This reminded me of some research that had been done evaluating the nutritional quality of different weeds. Canada thistle was one of the weeds evaluated. Its nutrient profile was similar to alfalfa hay! Looking at a forage analysis wasn't going to tell me that Canada thistle was in this hay.

I truly believe that forage testing is a best management practice that all livestock owners should do. Laboratory results can be used to feed different hays in inventory in the right order as nutritional needs of cows, does, and ewes change as they go through their yearly cycle of maintenance, different months of gestation and lactation. A supplementation strategy can be developed, too. Excellent information about forage testing such as how to sample hay or silage, where to purchase hay probes and locations of certified laboratories can be found at the website *www.foragetesting.org*.

My experience with the shepherd and his ewes refusal to eat high quality hay as detailed by the numbers on a laboratory report, reminded me of how important it is to use your senses to evaluate hay, too. Previous to this encounter of hand meeting thistle, I would have used the words "visual appraisal" as hay was being assessed. However on this day, I opted to change the physical evaluation of hay to sensory analysis.

Using the senses of sight, smell, and touch along with chemical analysis determine forage quality. (Photo credit: Keith Johnson)

Sight can tell us what species are found in the hay, maturity of the crop at harvest, leaf retention or loss during harvest, whether there is mold, and the presence of foreign objects. But it wasn't sight that first told me that this beautiful looking hay had a problem waiting for the ewes; it was touch. **Touch** can tell you whether the hay was made too moist and whether it is heating due to this excess moisture. Palatability can be reduced if hay is so coarse that it irritates the mouth of the consuming animal. **Smell** can determine whether hay is musty from the presence of molds that are not noticeable with the eyes. Hay that smells more like tobacco rather than hay is an indication that it heated during the curing process and likely has a high unavailable protein content. A vinegar smell is an indication that hay was recently baled with organic acid preservatives at baling to reduce the microorganism population that causes heating and molds to form. I haven't opted to use taste or hearing to evaluate forages, but rest assured your livestock have used taste to assess the feed source that you provide.

For more information about sensory analysis of hay, Purdue Extension publication "Sensory Analysis of Hay Quality for the First Time Buyer" can be found at *https://www.extension.purdue.edu/extmedia/AY/AY-374-W.pdf*.

A small trace of Canada thistle spines found in alfalfa hay led to refusal of ewes consuming the hay. (Photo credit: Brooke Stefancik, Purdue University Sullivan County Extension Educator, Agriculture & Natural Resources)

Sheep/Goat Webinar On Hay Evaluation

(Keith Johnson) & *(Mary Rodenhuis, Franklin County Extension Educator)*

On August 20 at noon Eastern Daylight Time, Franklin County Extension Educator Mary Rodenhuis and I will be presenting a sheep/goat webinar on hay evaluation. The web link to participate is *https://bit.ly/SheepGoatHay*. Share the opportunity to learn about hay evaluation with others. Information presented will be applicable to other livestock, too.

Monitoring Potential Evapotranspiration Across Indiana

(Beth Hall)

Rain moved across Indiana earlier this week, bringing much-needed

precipitation to the northern counties. Unfortunately, the 30-day rainfall totals for northern counties are still up to two inches below normal (Figure 1). The southern and southwestern counties are well above normal and could likely use a break for the next few days!

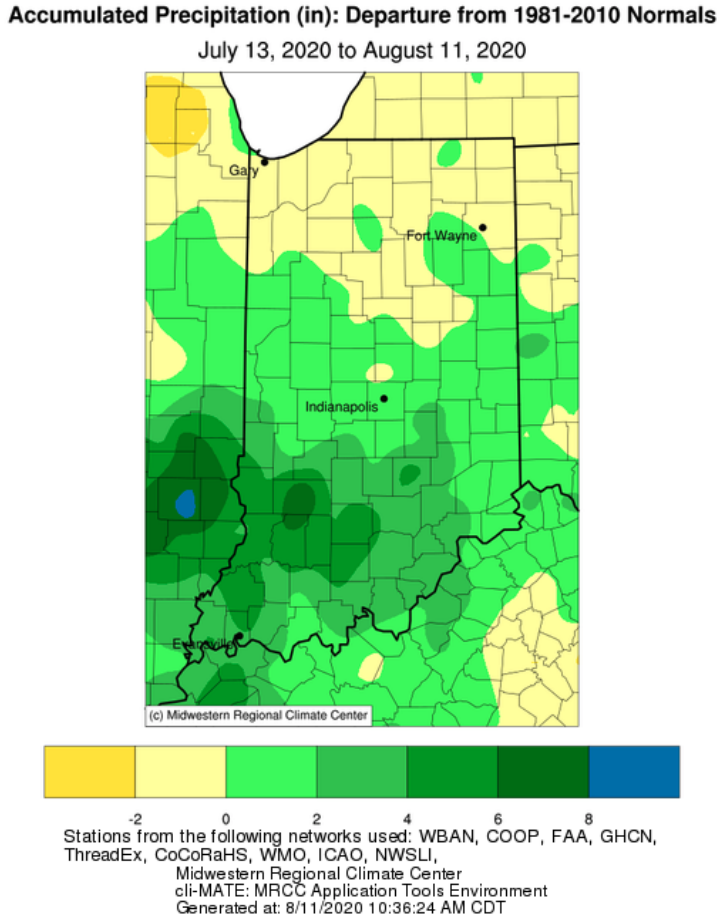

Figure 1. Precipitation departure from the 1981-2010 normals for the period July 13, 2020 to August 11, 2020.

Good news for those tiring of excessive heat conditions! Climatologically, the hottest day of the year (maximum temperature) is July 27th, so things should start to get cooler for the rest of the season. That does not mean cool and less humid conditions every day, but hopefully we can start putting most of those seasonally hot, humid days behind us! In fact, the climate outlooks through August 24th is showing slight confidence for below-normal temperatures (Figure 2). This same period is also predicted to have below-normal precipitation so perhaps things will get more comfortable without leading to abnormally dry conditions.

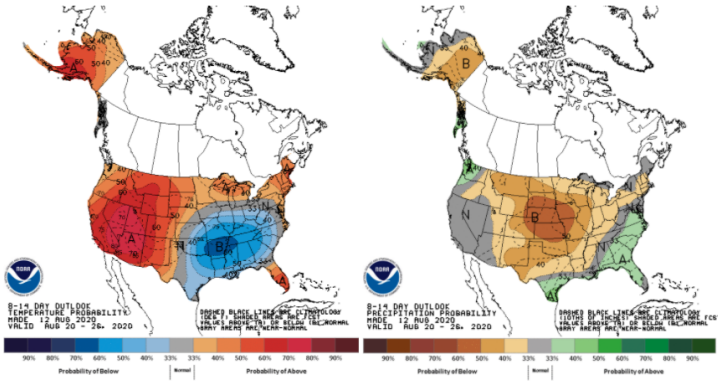

Figure 2. Probabilistic outlooks for above- or below-normal temperature (left) and precipitation (right) from the national Climate Prediction Center for August 20-26, 2020.

To help better monitor current evapotranspiration and precipitation conditions, the Indiana State Climate Office has launched a new tool (https://ag.purdue.edu/indiana-state-climate/tools/et-monitoring-tool/) that presents daily weather conditions in both tabular and graphical format for the nine weather stations across Indiana that comprise the Purdue Mesonet. When users first enter the site, they are presented with a map showing the station locations. Clicking on a map will then lead to a table of daily values. Accumulations for potential evapotranspiration (PET) and the Precipitation-minus-PET Deficit start with the default date, but users can modify the start date by using the slider tool at the top right of the page. Users can also view the data through time series graphs by clicking on the "Go to Graph View" (e.g., Figure 3).

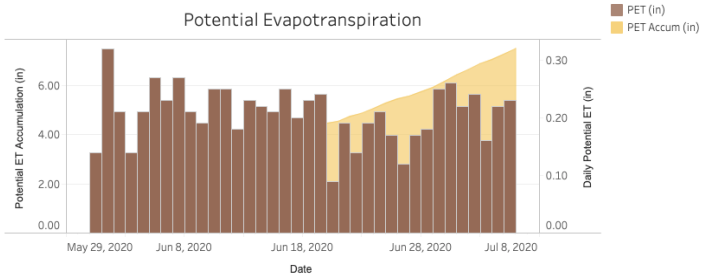

Figure 3. Sample graphical product from the Indiana State Climate Office's Potential Evapotranspiration (PET) Monitoring Tool. This graph shows the daily PET (bars) along with the accumulated PET throughout the period of the graph (i.e., May 29, 2020 – July 8, 2020).

Accumulated modified growing degree days from April 1 through August 12, 2020 along with comparisons to recent years can be viewed in Figures 4 and 5.

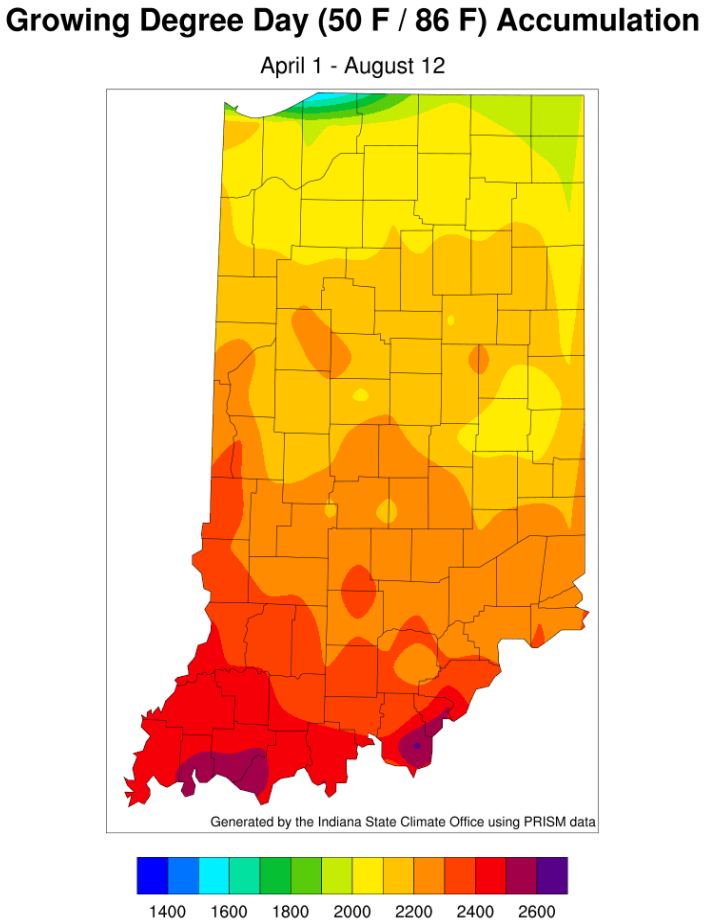

Figure 4. Modified accumulated growing degree-day units for April 1 – August 12, 2020.

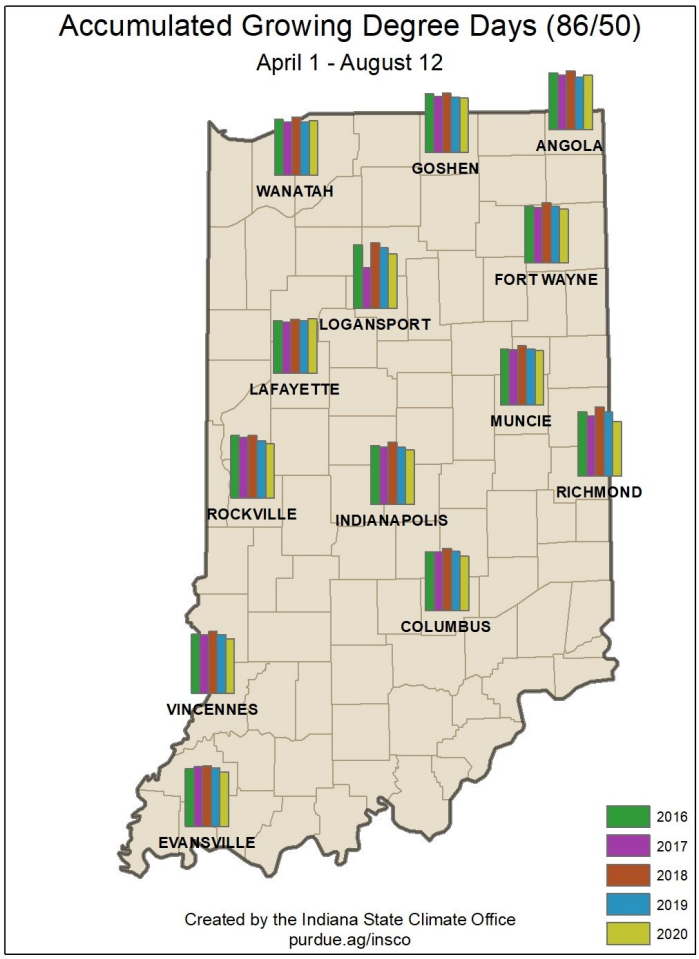

Figure 5. Comparison of accumulated modified growing degree days for April 1 through August 12 for 2016 through 2020.

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