PURDUE UNIVERSITY | Extension - Entomology

Pest&Crop newsletter

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In This Issue

Fall Armyworm Outbreaks Possible In Late-Planted And/Or Fall Crops

(Christian Krupke) & *(John Obermeyer)*

In recent weeks, fall armyworm infestations have been decimating some soybean and forage crops in Kentucky. The University of Kentucky Extension Entomologists, recently reported large FAW moth captures (*Pest News)*. This likely occurred in southern Indiana counties as well, although we have no reports of this to cite. Like a very similar species, the true armyworm, FAW behavior is much the same in that they can consume large amounts of foliage as they move together in large numbers. One major difference, whereas armyworm feeds primarily on grasses (e.g., corn, small grains, fescue), fall armyworm will feed on a much broader range of plants, including both grasses and broadleaves. Incidentally, this is the same insect that has been laying waste to corn and other crops across sub-Saharan Africa for several years now after reaching the continent in 2016 – it's an after-thought for most of us in the corn belt in a typical year, but definitely one of the top pests of grain production worldwide.

Late-instar fall armyworm larva on corn. Once they have reached this size, the caterpillars are very difficult to kill with insecticides. (*Photo Credit: John Obermeyer*)

We warned of FAW last August as well, and some very impressive outbreaks followed. While this year is not guaranteed to follow suit, things are looking ominous at this point. In Indiana, those with late-season crops, (e.g., double-crop soybean, forages, cover crops, alfalfa) should be inspecting for feeding damage. This is very important for newly-seeded forages. You have been warned, get them early! Small larvae are relatively easy to control with the maximum label rate of a range of pyrethroids. However, when the worms are about an inch long is when damage is very noticeable and most controls are applied. At this size, they can denude plants rapidly when they are "marching." Large caterpillar control is difficult, if not impossible, as many found out in 2022. It is not time for panic yet, nor will spraying at this time help with later infestations. It will likely be a month or so before the FAW story of 2023 is told, and this year, a network of moth trappers around the state should provide some earlier warning of heavy flights, so stay tuned!

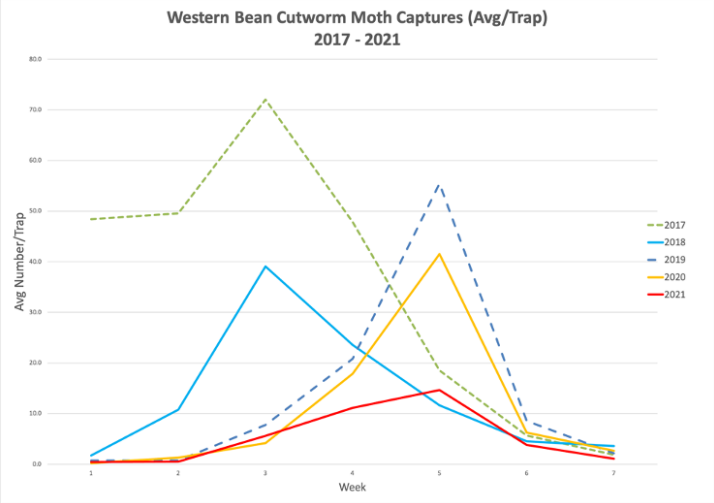
Western Bean Cutworm Moth Flight Much Lower This Season

(John Obermeyer) & *(Christian Krupke)*

Although some other states in the US corn belt, and in Ontario, Canada are seeing high moth flights (and we thought Indiana would follow suit), Indiana is a "have-not" state for WBC this year. Thanks to our network of pheromone trap cooperators throughout the state, we were able to assess the flight of western bean cutworm moths the last seven weeks.

As you can see from the graph below, this year's numbers have been much lower, though the peak period of mid-July remained relatively consistent. The accompanying good news is that larval damage reports, so far, have been zero. The reasons why are unclear – the moths overwinter as pre-pupae, and our winter was not atypically cold. But the trend of low damage (regardless of trap catch) across Indiana persists, and this is the good news here.

Hopefully we can convince the trappers to again monitor for this pest next season, to determine if this decline is a trend or is a one-year blip on the curve!



Reduce The Fear Of Prussic Acid Poisoning

(Keith Johnson)

Hard to believe, but fall and cooler temperatures will be here in less than a month. Soon after that, a frost will occur. Members of the sorghum family have a compound called dhurrin that will release hydrogen cyanide, commonly known as prussic acid, when plants are stressed by drought or frost. While traveling to Spencer County for a field day this week, it was noted that Johnsongrass was commonly seen in pastures. Johnsongrass, a perennial sorghum, has the potential to produce hydrogen cyanide and cause livestock death when plants are stressed. Other planted sorghums when stressed will produce hydrogen cyanide, too.

Johnsongrass was evident in pastures while traveling to southern Indiana this week. It has the potential to produce prussic acid (hydrogen cyanide) when frosted. (*Photo Credit: Keith Johnson*)

Producers are encouraged to utilize sorghums before a frost occurs to reduce the possibility of prussic acid poisoning. Links below to a publication and video will discuss ways to reduce the fear of prussic acid poisoning.

In the near future, dhurrin-free sorghums will be available for seeding as a result of Purdue University work conducted by Dr. Mitch Tuinstra's research group, most notably Dr. Shelby Gruss. Unfortunately, Johnsongrass will remain to be concern even when dhurrin-free sorghums are available.

https://www.extension.purdue.edu/extmedia/AY/AY-378-W.pdf

https://www.youtube.com/watch?v=orBArJkxGJg

Exercise Caution When A Similar Triple Numbered Fertilizer Source Is Recommended

(Keith Johnson)

After four decades as Purdue University's Forage Extension Specialist, there is one forage production practice recommendation that draws my ire and has become a major pet peeve; so much that every time the recommendation is offered I think I lose another hair follicle on my head and legs. Not many hair follicles are left.

It has been said that one cannot attend an agronomic meeting without the importance of soil testing, liming and fertilization being mentioned and discussed. There is a bit of truth in that statement. It is critical to know what nutrients are needed to meet a specific crop's realistic production goal, to keep input costs in check, and to be good stewards of the environment.

My academic pet peeve is the recommendation of "X" hundred pounds of 12-12-12 or 19-19-19 (N-P_2O_5-K_2O) as the **sole source** fertilizer for forages. Why does this disappointment me? Let me give a real happening between a forage producer and me that describes the frustration I have when this recommendation is given, especially when it comes from a fertilizer retailer.

Carefully consider whether a pre-blended sole fertilizer source will meet the forage needs based on a soil test. (Fertilizer bag from "Creative Commons.")

Farmer "Joe" called me and said that he had a soil test in hand and was surprised that the recommendation provided by the fertilizer input provider roughly scratched on the soil test report was 300 pounds of 12-12-12. Farmer "Joe" was well trained and stated, "I went through all the effort of getting the soil sampled and tested and I end up with a recommendation like that." I asked that the soil test information be faxed to me. Sure enough, the "300 pounds 12-12-12" numbers and letters were easily found with no other comments or fertilizer sources cited on the report.

"Joe" was raising an alfalfa-orchardgrass mixture for hay. The alfalfa component of the mixture was half of the dry matter. He didn't need the first 12 of 12-12-12 as the alfalfa, a legume, was supplying adequate nitrogen to the orchardgrass component. "Joe" didn't need the third 12 either as the soil test was very high in potassium (K). A low phosphorus (P) soil test level, coupled with a 6-ton yield goal of hay per acre, indicated that 80 pounds of P_2O_5 should be applied. How much P_2O_5 per acre was recommended by the vendor?; 300 pounds per acre x 0.12 = 36 pounds P_2O_5, far short of the 80 pounds per acre that should be applied. Dollars recommended to be invested in N and K_2O should have been allocated to P_2O_5.

Thankfully, "Joe" contacted me. Proper rates of nutrients were applied and one of my hair follicles was saved. Don't accept a sole source fertilizer recommendation of 12-12-12 or 19-19-19 without verifying that it truly meets the forage needs.

A timely comment – Late August and early September is an ideal time to apply 30 to 50 pounds of nitrogen per acre in a rotational stocking program to paddocks that are dominantly cool-season grasses. The forage produced can be grazed late in the season and should extend the number of grazing days. Will a sole source, equal value number fertilizer for N, P_2O_5, and K_2O be what the soil test recommends be applied?; I highly doubt it.

Cooler Temperatures And Below Normal Rainfall; Warmer Weather Returning

(Austin Pearson)

For the second week in a row, the much-appreciated cooler temperatures remained from August 17-23. The preliminary state average temperature was 71.2°F, which was 1.2°F below the 1991-2020 normal. The largest temperature departures were observed in central and southern Indiana, where departures were up to 2.1°F below normal. After a warm, wet beginning to August, month-to-date temperatures (Figure 1) remained slightly above normal through August 23 (0.6°F above normal). Daytime high temperatures in south-central and southern Indiana were cooler than normal (Figure 2, Left) while overnight lows were 1-3F warmer than normal (Figure 2, Right). From April 1-August 24, Modified Growing Degree Days continued to run 102 percent of normal for the state. Central and southern Indiana has the highest Modified Growing Degree Day departures (Figure 3).

Climate Division Data by State between Two Dates
From Midwestern Regional Climate Center

Indiana
8/ 1/2022 to 8/23/2022

	Temperature			Precipitation			
cd	temp	norm	dev	prcp	norm	dev	percent
1	72.0	71.6	0.4	2.18	2.81	-0.63	77
2	71.9	71.1	0.8	2.28	2.88	-0.60	79
3	71.6	70.8	0.8	3.04	2.80	0.23	108
4	72.9	72.9	0.1	3.29	2.89	0.40	114
5	72.8	72.4	0.4	2.52	2.70	-0.18	93
6	72.6	71.5	1.1	1.92	2.56	-0.64	75
7	75.7	75.3	0.4	2.69	2.67	0.02	101
8	75.5	74.6	0.8	2.38	2.93	-0.55	81
9	74.6	73.9	0.7	3.43	2.89	0.54	119
State	73.3	72.8	0.6	2.63	2.79	-0.16	94

Midwestern Regional Climate Center
MRCC Applied Climate System
Generated at:
Wed Aug 24 11:48:20 CDT 2022

Figure 1. August 1-23, 2022 climate division and state average temperatures, normal temperatures, temperature deviations, average precipitation, normal precipitation, precipitation deviations, and percent of normal precipitation compared to the 1991-2020 climatological averages.

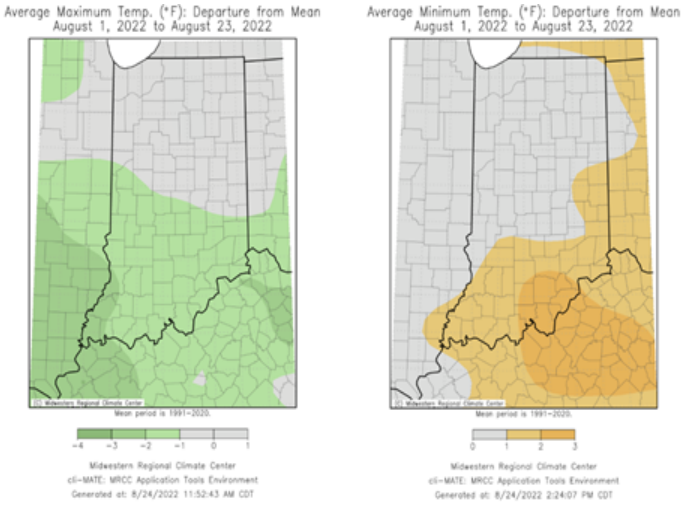


Figure 2. Left – Average maximum temperature in degrees Fahrenheit for August 1-23, 2022, represented as the departure from the 1991-2020 normal temperature during that period. Right – Average minimum temperature in degrees Fahrenheit for August 1-23, 2022, represented as the departure from the 1991-2020 normal temperature during that period.

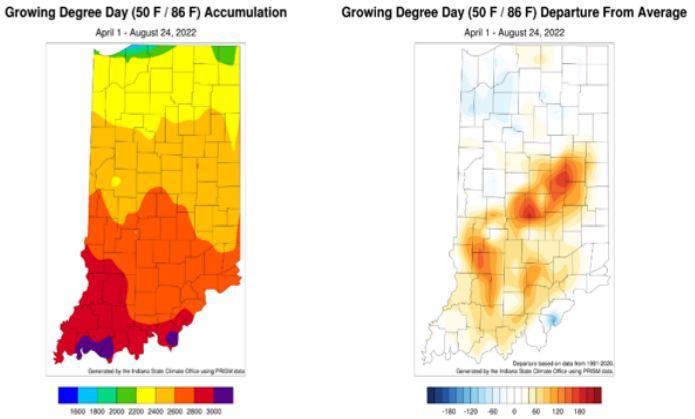


Figure 3. Left – Modified Growing Degree Day accumulations April 1-August 24, 2022. Right – Modified Growing Degree Day accumulations from April 1-August 24, 2022 represented as the departure from the 1991-2020 climatological average.

Dry conditions settled in for August 17-23 as the state average precipitation was 0.48 inches (0.27 inches below normal or 64 percent of normal). Central and southern Indiana were the driest regions, averaging less than 60 percent of normal rainfall for the week. Clay County, Indiana, recorded the highest precipitation with 1.94 inches falling on August 21. Several stations actually missed out on adequate precipitation during this period (Figure 4, Left) and received less than 50 percent of normal rainfall (Figure 4, Right). State preliminary precipitation has averaged 2.79 inches for August 1-23, which is 94 percent of normal. As of August 23, river and stream gauges in the northwestern and central part of the state had 7-day average streamflows that were ranked below the 25th percentile (Figure 5). The August 23rd US Drought Monitor brought expansion of the Abnormally Dry (D0) category through the northern part of the state, but Moderate Drought has not yet returned (Figure 6).

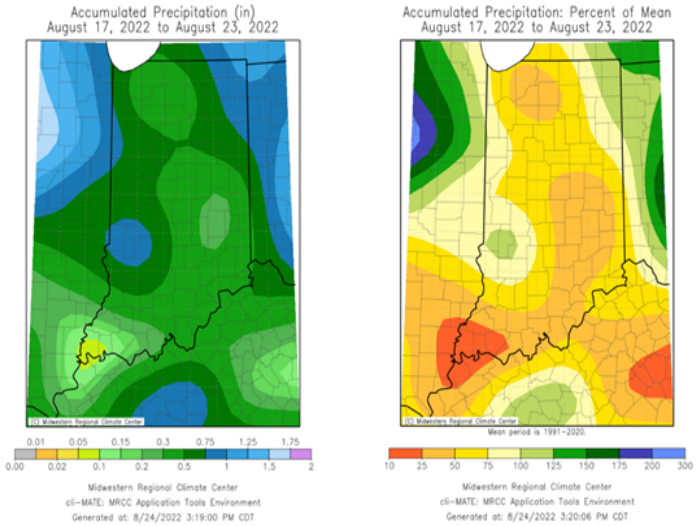


Figure 4. Left – Accumulated precipitation from August 17-23. Right – Accumulated precipitation from August 17-23, represented as the percent of the 1991-2020 normal precipitation that fell during this period.

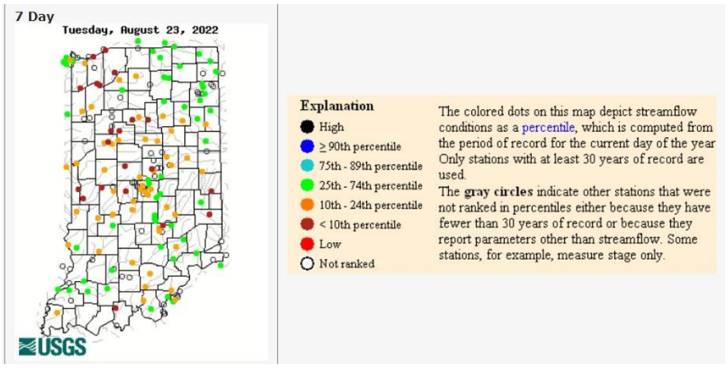


Figure 5. Seven-day average stream flows across Indiana as of Tuesday, August 23, 2022 using date from the USGS Water Watch.

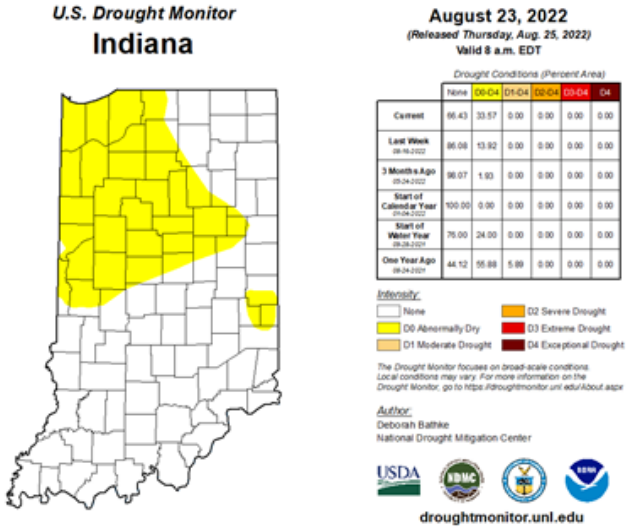


Figure 6. Indiana US Drought Monitor from August 23, 2022.

The Climate Prediction Center outlooks have been accurate for August so far. The 6–10-day outlook for August 30th– September 3rd has higher confidence in above-normal temperatures statewide. Precipitation is expected to be below normal in the northern, normal in the middle, and above normal in the extreme southern parts of the state (Figure 7). The 8–14-day outlook (September 1-7) has elevated confidence in near-normal temperatures through much of the state with areas of higher confidence in above-normal temperatures in extreme northern Indiana. Precipitation is expected to be below normal throughout most of the state with near-normal precipitation in southern Indiana (Figure 8).

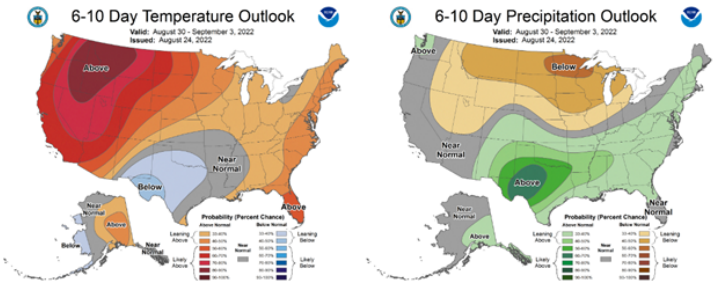


Figure 7. The Climate Prediction Center's 6-10-day temperature (left) and precipitation (right) outlooks for August 31-September 3, 2022.

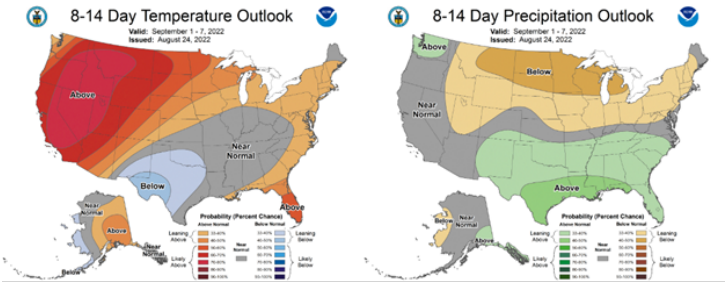


Figure 8. The Climate Prediction Center's 8-14-day temperature (left) and precipitation (right) outlooks for September 1-September 7, 2022.

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Editor: Tammy Luck | Department of Entomology, Purdue University, 901 W. State St., West Lafayette, IN 47907