PURDUE UNIVERSITY Extension - Entomology

Pest&Crop newsletter

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In This Issue

Corn Earworm Trapping For The 2021 Season Is Beginning

(Laura Ingwell)

We have begun our state-wide trapping and monitoring program for corn earworm (Fig. 1). The latest trap catch information can be found here. Traps have been placed at seven Purdue Agricultural Centers throughout the state. Trapping will begin June 17, 2021. Please refer to E-31 to learn more about corn earworm identification and management.

Fig. 1 Corn earworm adult on silk. (*Photo Credit: John Obermeyer*)

Management and insecticide sprays target the eggs that are laid on fresh corn silk. If no field corn in the area is silking, which is true for most this year, use a threshold of 1-3 moths per night per pheromone trap. You only need to spray your sweet corn if it has silk present. We recommend the first application around 50% of plants at silk stage. When field corn begins to silk and green silk is present the threshold increases to 10 moths per night in the trap. Eggs are laid individually on developing silk. They hatch within 2-5 days and the larvae follow the silk channel down into the developing ear to feed. Once inside the ear, there is no effective control. Therefore, monitoring and spray coverage are key. You want the hatching larvae to experience a lethal dose. See ID-56 for a complete list of spray recommendations, but briefly for organic production Bt products (Entrust®) are available and provides good control. For conventional commercial growers we recommend Coragen® followed by Radiant®.

While there is no established threshold for trap catches and damage to hemp, we are also monitoring in this crop as CEW damage the buds. If you would like a trap in your area, especially if you are a hemp producer, please contact me at lingwell@purdue.edu.

Japanese Beetles Emerging

(John Obermeyer)

A quick glance at my vegetable garden on Thursday, June 17, revealed a lonely Japanese beetle… I dutifully squished it! This does indicate that emergence is beginning in west central Indiana. Hatch has undoubtedly been going for several days in southern counties, whereas, northern counties will soon be graced with their presence. Oh joy!

Japanese beetles will feed on more than 350 different species of plants, but are especially fond of roses, grapes, smartweed, soybeans, corn silks, flowers of all kinds, and overripe fruit. Beetle damage to cultivated crops is often minimal and defoliation (leaf removal) on soybean usually looks much worse than it is. The beetles often congregate in several areas of a soybean field – often field borders – feeding on and mating in the upper canopy. The beetles’ iridescent, metallic color and their proximity to the field edge catches the attention of those doing “windshield” field inspections. Closer inspections will often reveal that weeds such as smartweed have made fields even more attractive to the beetles. Let’s hope this season they feed on the weeds…especially giant ragweed and marestail.

Japanese beetle newly emerged from the soil. (*Photo Credit: John Obermeyer*)

Pheromone Trapping Update: Armyworm Ends, Western Bean Cutworm Begins

(John Obermeyer)

Armyworm pheromone trapping at the Purdue Ag Centers (PACs) ends this week. Moth captures were extremely low this year, and fortunately so were larval infestations. You can see the results of the PACs efforts in the "Armyworm Pheromone Trap Report." Their efforts are appreciated by many throughout the state!

Our pheromone trapping network has placed out their traps to begin western bean cutworm moth emergence and flights. This pest has renewed interest, especially in northern Indiana counties, as damage to fields has increased. As previously discussed in past year's Pest&Crop, western bean cutworm has demonstrated resistance to the majority of above-ground, Bt-traited corn. Thanks to our trappers, we are now able to better time our field monitoring. More on this in future issues of the *Pest&Crop*.

Two captured western bean cutworm moths. (Photo Credit: John Obermeyer)

Armyworm Pheromone Trap Report – 2021

(John Obermeyer)

County/Cooperator	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11
Dubois/SIPAC Ag Center	0	13	3	65	51	12	0	23	10	20	19
Jennings/SEPAC Ag Center	0	1	0	7	7	2	2	1	3	2	3
Knox/SWPAC Ag Center	0	6	1	10	35	1	12	11	7	45	3
LaPorte/Pinney Ag Center	27	50	12	393	189	42	231	242	34	79	102
Lawrence/Feldun Ag Center	14	62	7	434	717	83	79	43	41	46	46
Randolph/Davis Ag Center	0	0	0	0	0	0	53	14	14	33	0
Tippecanoe/Meigs	1	0	0	16	31	12	13	5	16	25	7
Whitley/NEPAC Ag Center	0	0	0	18	20	8	32	22	5	10	

Wk 1 = 4/1/21-4/7/21; Wk 2 = 4/8/21-4/14/21; Wk 3 = 4/15/21-4/21/21; Wk 4 = 4/22/21-4/28/21; Wk 5 = 4/29/21-5/5/21; Wk 6 = 5/6/21-5/12/21; Wk 7 = 5/13/21-5/19/21; Wk 8 = 5/20/21 – 5/26/21; Wk 9 = 5/27/21-6/2/21; Wk 10 = 6/3/21-6/9/21; Wk 11 = 6/10/21-6/16/21

Next Week Is "National Forage Week"

(Keith Johnson)

When one travels throughout much of Indiana, you quickly observe that corn and soybeans dominate the landscape. As you travel southward, however, pastures and hay fields become much more apparent on the rolling hills and the soils that developed without glacier interaction many, many years ago. Throughout Indiana, hay and pasture provide benefits that should not be taken for granted. Here are some things to consider about forages.

- There are annuals, biennials, perennials, warm-season grasses, cool-season grasses, legumes, and forbs. The diversity of species we call forages provide a resource for different times within a year and number of years, and adaptation to different soil types.
- Nutrition essential for optimal livestock health and performance is provided.
- End products of meat, milk and fiber provide necessities for a growing population.
- Soil health has become a conversation area in agriculture circles. A properly cared for diverse mixture of perennial forages results in a very healthy soil.
- Soil erosion caused by water or wind will be less when covered with perennial forages.
- Water quality will be improved because sediment carrying nutrients and herbicides will be kept out of riparian areas.
- Legumes provide a natural source of nitrogen by the symbiotic relationship legumes have with rhizobia bacteria.
- Many wildlife find forages to be a friendly habitat for nesting, grazing, and rest.
- Pollinators find many legume flower types desirable

In cooperation with *Hoosier Ag Today,* two podcasts were developed to recognize forages during National Forage Week that begins on June 20. The American Forage and Grassland Council and state affiliate councils are the organizations taking leadership with this endeavor. Information about Indiana's council can be found at *indianaforage.org*. The first podcast is at *https://hoosieragtoday.com/special-hat-podcast-spotlight-on-the-indiana-forage-council-1/*. The second podcast will be released next week. Enjoy the beauty and attributes of forages; not just next week, but throughout the year. Consider joining the Indiana Forage Council.

Forages provide a feed resource. (*Photo Credit: Keith Johnson*)

Forages provide soil protection. (*Photo Credit: Keith Johnson*)

Forages provide a wildlife habitat. (*Photo Credit: Keith Johnson*)

Forages provide nitrogen with a legume-rhizobia symbiotic relationship. (*Photo Credit: Keith Johnson*)

How Likely Will Drought Develop Or Worsen In Indiana?

(Beth Hall)

The news of the disastrous drought and extreme heat in the western United States (US) have local folks wondering if Indiana might be next. The latest release of the US Drought Monitor map (Figure 1) shows the exceptional drought in the western states as well as the expansion of extreme and exceptional drought in the north-central U.S. Currently, the lower Midwest states (that includes Indiana) seem to have been moderately spared and shorter-term forecasts and climate outlooks are suggesting relatively regular rainfall relief over the next several weeks. It is still early in the growing (and warm) season, so a drought in Indiana is not out of the question. However, the rest of June appears to be likely to receive above-normal precipitation. Combine this chance with the likelihood of above-normal evapotranspiration rates, Indiana is unlikely to gain too much ground in replenishing groundwater or surface water supplies. Figure 2 shows the additional precipitation needed (in inches) to bring the Palmer Drought Index to within normal ranges for this time of the year. With the exception of southeastern Indiana, the rest of the state needs anywhere from a little bit of rain (i.e., a trace) to as much as 9 inches (northern counties). That is a lot of rain needed for northern Indiana – particularly for an area of the state that already has below-normal groundwater levels and irrigates the most.

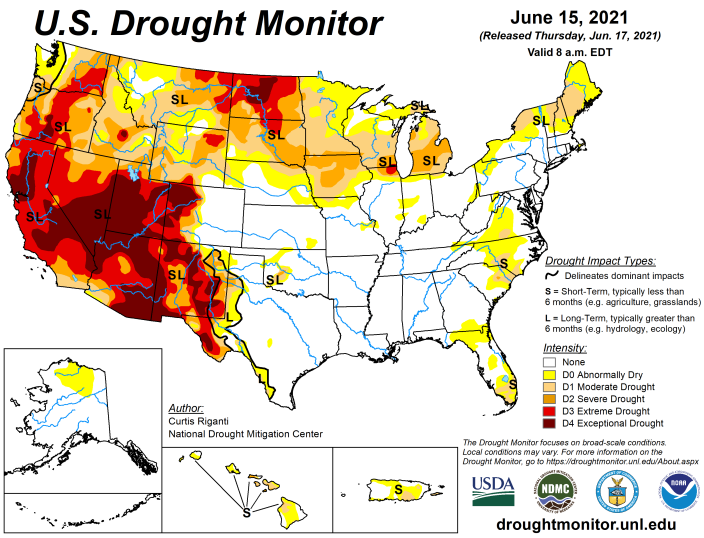


Figure 1. US Drought Monitor map released 17 June 2021 representing conditions as of 15 June 2021.

Figure 2. Modeled estimates of how much precipitation (inches) would be needed (by climate division) to return the Palmer Drought Index to normal ranges.

The 3-month climate outlook (representing July through September) is slightly favoring above-normal temperatures over that period as well as slightly favoring above-normal precipitation (Figure 3). Because the outlooks are only "slightly" confident, assume there is a bit of uncertainty on how the season will actually turn out, let alone how the timing of these conditions will occur. For example, the precipitation climate outlooks could prove to be accurate by the end of September when looking at the 3-month precipitation total. However, most all of that rain could have fallen in early July, leaving the rest of the 3-month period predominantly dry and therefore contributing to drought conditions.

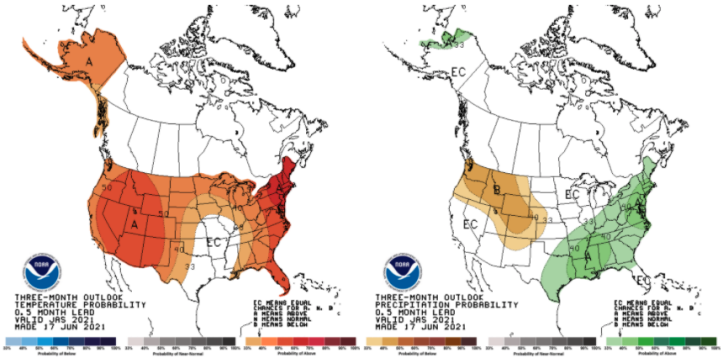


Figure 3. Climate outlooks for the July-August-September period for temperature (left map) and precipitation (right map). These are produced by the national Climate Prediction Center and illustrate confidence of favoring above- or below-normal conditions.

While modified growing degree day (MGDD) accumulations (Figure 4) continue to increase (what happens throughout the warm season), it is interesting how they still seem to be lagging the climatological average in the southern half of the state. The magnitude of how much behind those accumulations are seem rather insignificant compared to the seasonal totals thus far, but still noticeable on departure maps (Figure 5). Northern county MGDD accumulations are slightly above the 1991-2020 climatological average, however, lagging compared to the 2017 and 2018 seasons (Figure 6). Warm temperatures are expected over the next several days which may help increase those accumulations closer to normal, however the nature of modified growing degree days is that any daily maximum temperature above 86°F is modified down to the 86°F value. Therefore, warm days exceeding this maximum threshold do not increase MGDD accumulations at a faster rate.

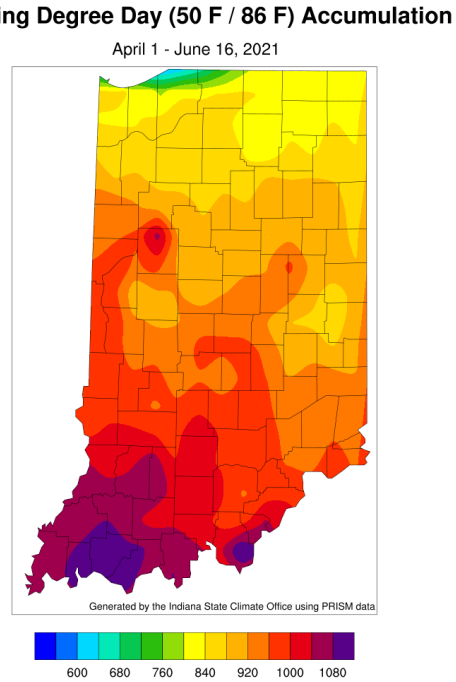
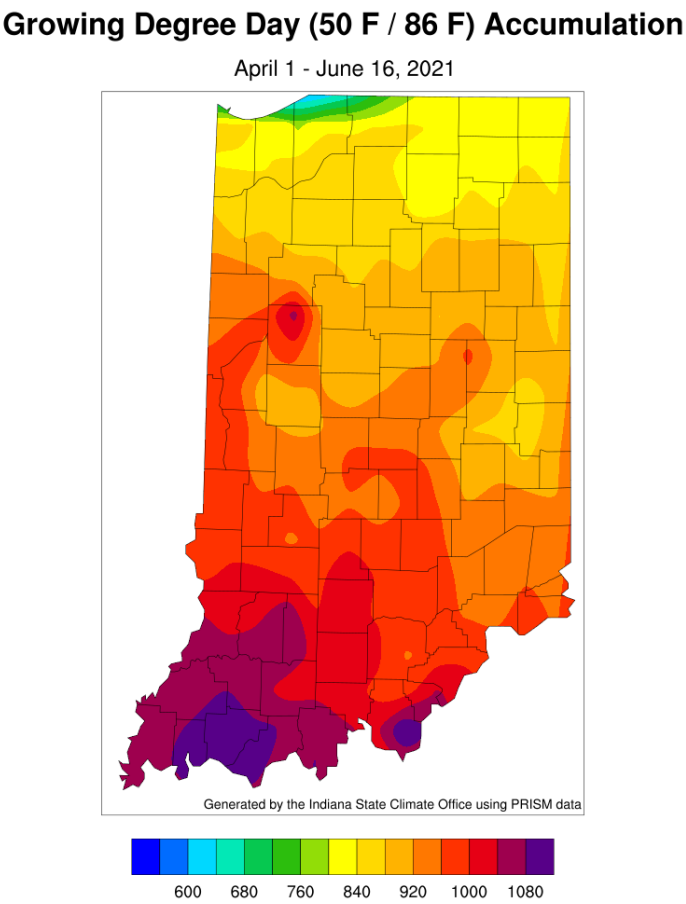


Figure 4. Modified growing degree day accumulations from April 1 to June 16, 2021.



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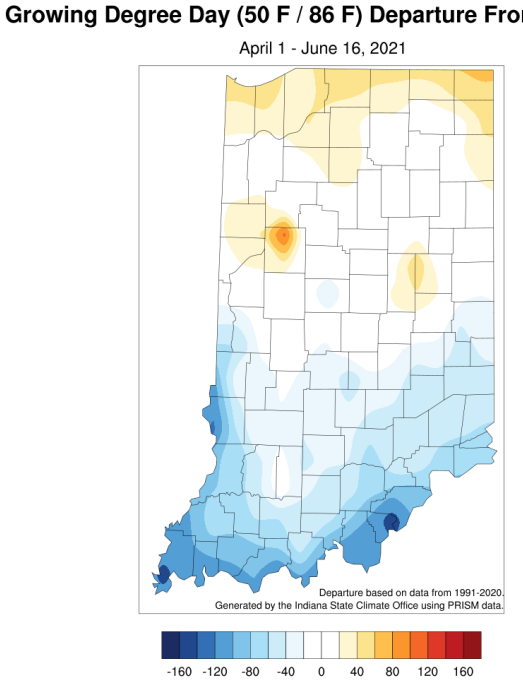

Figure 5. Modified growing degree-day departures as of 17 June 2021 compared to the 1991-2020 climatological average.

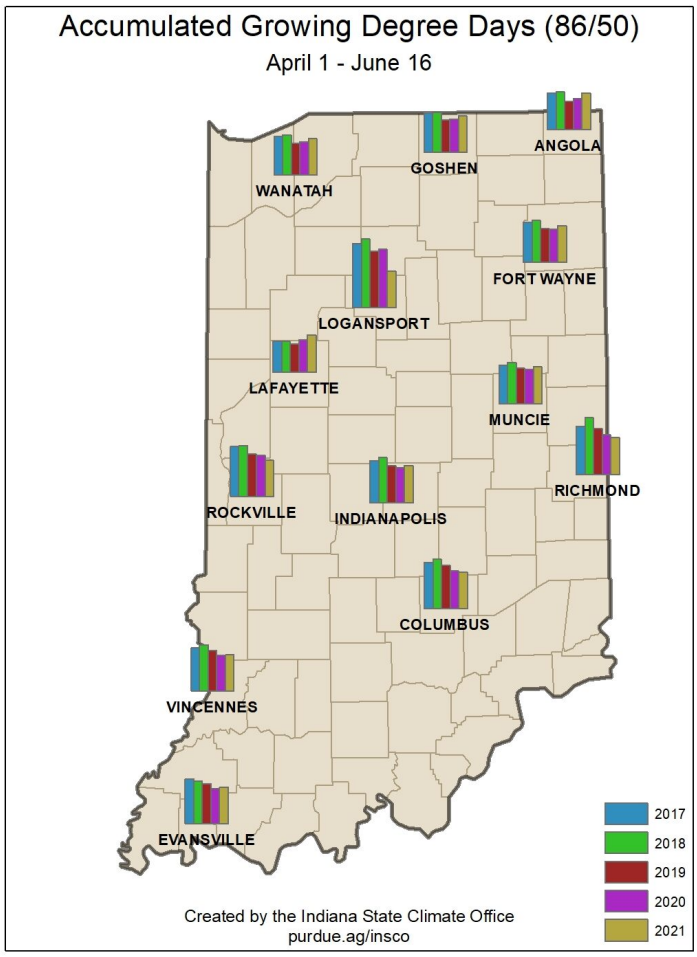

Figure 6. Comparison of 2021 modified growing degree day accumulations from April 1 – June 16 to the past four years.

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