Issue: 2024.9
May 24, 2024

Pest & Crop Newsletter

Purdue Cooperative Extension Service
and USDA-NIFA Extension IPM Grant

PURDUE UNIVERSITY | Extension - Entomology

This work is supported in part by Extension Implementation Grant 2021-70006-35390 / IND90001518G-1027053 from the USDA National Institute of Food and Agriculture and NCR SARE Award GNC20-311

In This Issue

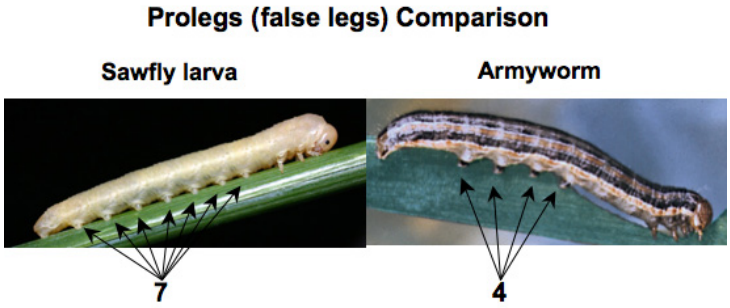
Armyworm Look-Alike In Wheat, But Not A Caterpillar

(Christian Krupke) & (John Obermeyer)

Small, caterpillar-like larvae, often confused with armyworm, can occasionally be found in wheat and some other grassy cover crops. These are not caterpillars at all, but are sawfly larvae, likely grass sawfly (*Pachynematus* sp.). Adult sawflies are insects with four wings that are distant relatives of the honeybee. They can be thought of as primitive wasps, but they do not have a stinger. The larvae are usually plant feeders and a few are pests of home gardens (rose sawfly or the confusingly named pear slug, for example).

Sawfly larva on wheat leaf. (*Photo Credit: John Obermeyer*)

The sighting of foliage feeding sawfly larvae in wheat fields is infrequent in the Midwest. And although this species feeds on the leaves, it is minor pest. This is more of a curiosity than anything else, and an opportunity to learn the differences between different insect larval types – always fun! Full size larvae, about 1.25 inches, may feed on stems causing head clipping much like armyworm. Another closely related insect, the wheat stem sawfly, occasionally causes problems in northern regions of the United States. This species, as the name implies, feeds only in the stem causing lodging and bleaching of heads in small grains.



Identification comparison of sawfly and armyworm larvae. (*Photo Credit: John Obermeyer*)

Unlike armyworm, which feed at night or on dark, cloudy days, sawfly larvae feed throughout the day. Another difference takes very close inspection – caterpillars have three pairs of true legs just behind the head and another **five** pairs of prolegs on their abdomen. Sawflies also have the three pairs of true legs up front, but also have **six** or more pairs of prolegs further back on the abdomen. Because sawflies' coloration blends into the vegetation, finding them is a challenge. For those out scouting small grains for armyworm infestations, congratulate yourself for finding these look-alikes, and be assured that you are being alert. Happy scouting!

Birdsfoot Trefoil – An Underutilized Pasture Legume

(Keith Johnson)

You don't see birdsfoot trefoil in many Indiana pastures. This perennial legume is beginning to bloom now with obvious bright yellow-orange flowers. It is especially noted along many roadways in the state. The positive characteristics of this forage makes this legume worthy of consideration.

Other yellow-blooming plants that may be observed now in a pasture or roadway setting are yellow sweetclover and black medic. The inflorescences of all three plants are distinctive from one another.

Sweetclover inflorescence

Yellow blossoms appear with long day/short night hours

Black medic inflorescence

Leaf arrangement of birdsfoot trefoil

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.

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. Deferring grazing until viable seeds are present in seedpods can increase birdsfoot trefoil composition in the pasture.

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 bacterium.

Birdsfoot trefoil seed

Uses and Comments: A good complement with adapted cool-season grasses when used as pasture. Good flower nectar resource for honey bees. **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.

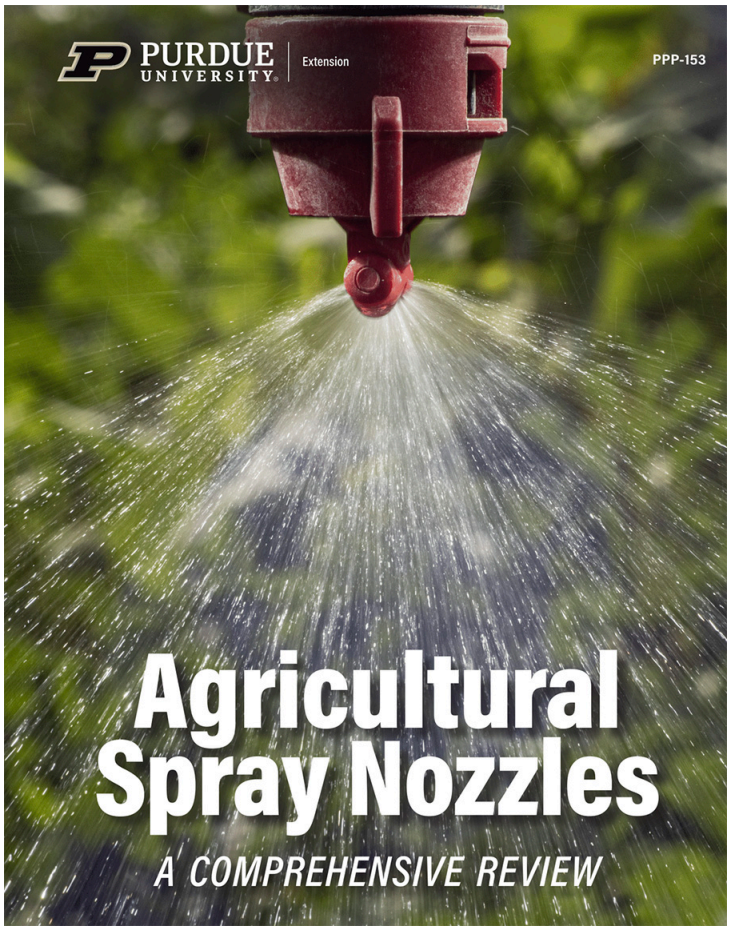
Photo Credits:

Sweetclover and birdsfoot trefoil pictures were provided by the Purdue University Crop Diagnostic Training and Research Center. Aaron Patton, Purdue Turf Extension Specialist, provided the black medic picture.

New Purdue Spray Nozzle Publication

(Fred Whitford)

Purdue Pesticide Programs has just released its newest extension publication, “Agricultural Spray Nozzles: A Comprehensive Review” (PPP-153). The lead author, Fred Whitford, indicates that the science behind the designs, materials and capabilities of today’s nozzles is as impressive and complicated as are the chemistries being applied. This publication discusses the current state of spray nozzle technology as it relates to today’s pesticide applications. By better understanding the science, we hope this will enhance the nozzle selection process and optimal use to save applicators money and make the most effective application possible. Contributing authors include Rajeev Sinha, Corteva; Debora Latorre, TeeJet Technologies; Bryan Young, Purdue University; Erdal Ozkan, The Ohio State University; Stephen Pearson, TeeJet Technologies; and John Obermeyer, Purdue University. An online version can be found on the PPP website https://ag.purdue.edu/department/extension/ppp/, click resources, PPP publications and PPP-153. Hard copies can be requested to Fred Whitord at fwhitford@purdue.edu at no cost by simply providing name and address.



Screenshot

How Long With This Wet Period Last?

(Beth Hall)

I have been seeing a lot of reports around the state about overly wet conditions with impacts such as running field tiles, high-leveled lakes

and streams, field ponding, and difficulty getting into the fields for planting. It certainly feels likes it has been raining a lot around the West Lafayette area. Figure 1 shows how much rain has fallen since April 1st and indeed amounts over 10 inches seem high! To put this into climatological perspective, Figures 2 and 3 compare these amounts to the 1991-2020 period where most of the state has received 2 to 5 more inches of rain (125%-175% of normal) than what is typical for this time of year! The good news is this has kept Indiana clear of any drought or abnormally dry areas for several weeks, but a bit of drying out would be nice. Unfortunately, the 7-day precipitation forecast is predicting a more rain to come our way – particularly early next week (Figure 4). However, according to the national Climate Prediction Center, the climate outlook beyond that (for May 28 – June 5) is favoring near normal to possibly below-normal precipitation. I am hoping things return to "normal", since our climate patterns over the past few decades seem defy "normal" and instead swing wildly from too much rain to too little in a relatively short period of time. We certainly do not want to see another rapid intensification of drought (i.e., "flash drought") developing this summer!

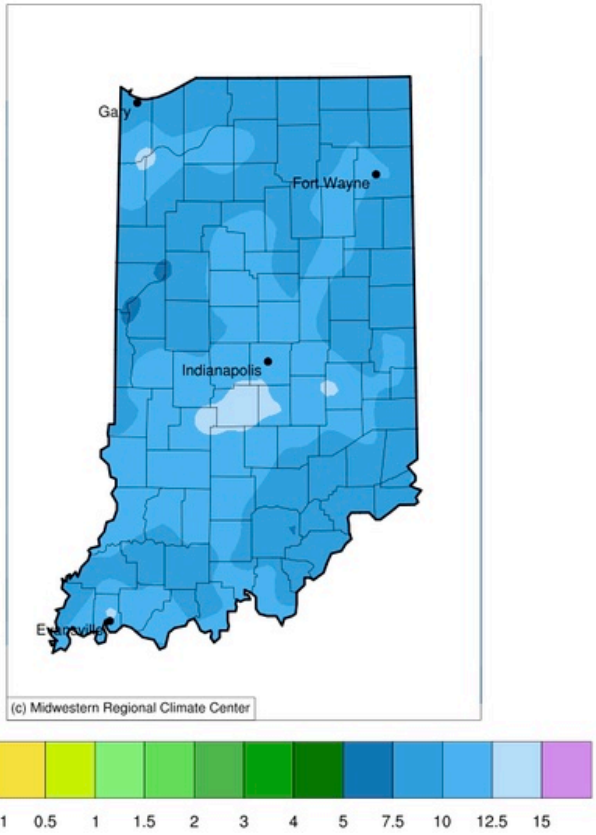


Figure 1. Total precipitation (inches) from April 1 through May 22, 2024.

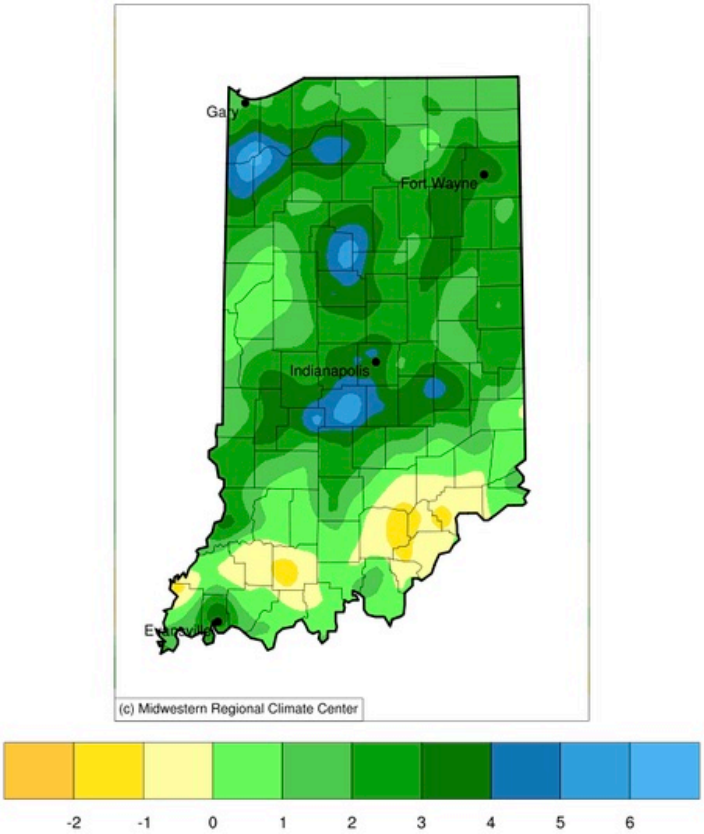


Figure 2. Precipitation departure from normal (1991-2020 period) in inches for April 1 through May 22, 2024.

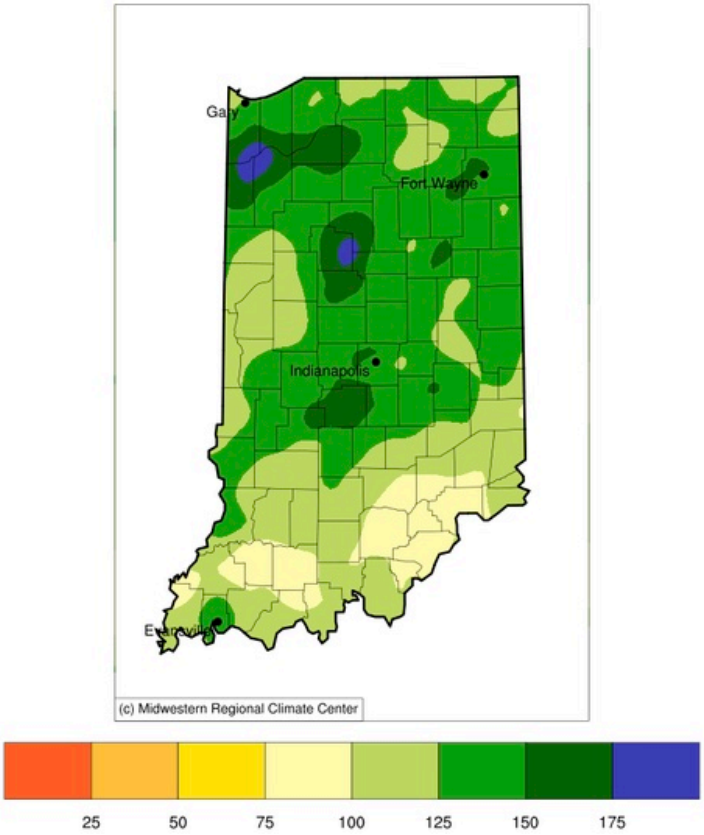


Figure 3. Percent of normal (1991-2020) precipitation from April 1 through May 22, 2024.

Figure 4. Forecasted precipitation amounts (inches) for May 23-30, 2024.

Regarding temperatures, it is likely no surprise that conditions have been warmer than normal. Figure 5 illustrates how the average daily temperatures in May have been 4 to 7 degrees Fahrenheit above normal across much of the state (May 1 – 22). This has been well reflected in the accumulated modified growing degree-day maps since April 1st (Figures 6 and 7).

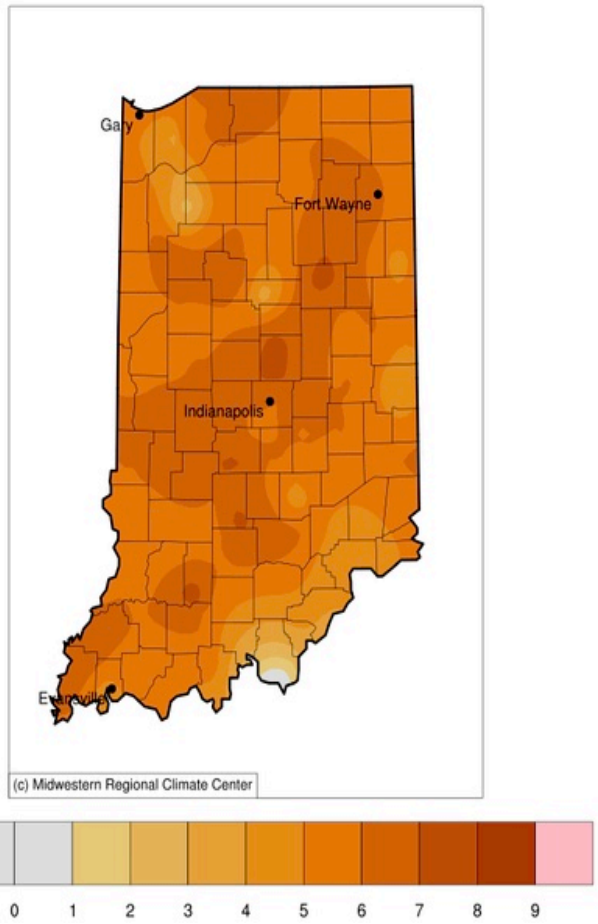


Figure 5. Average daily temperature departure (degrees Fahrenheit) from normal (1991-2020 period) for May 1-22, 2024.

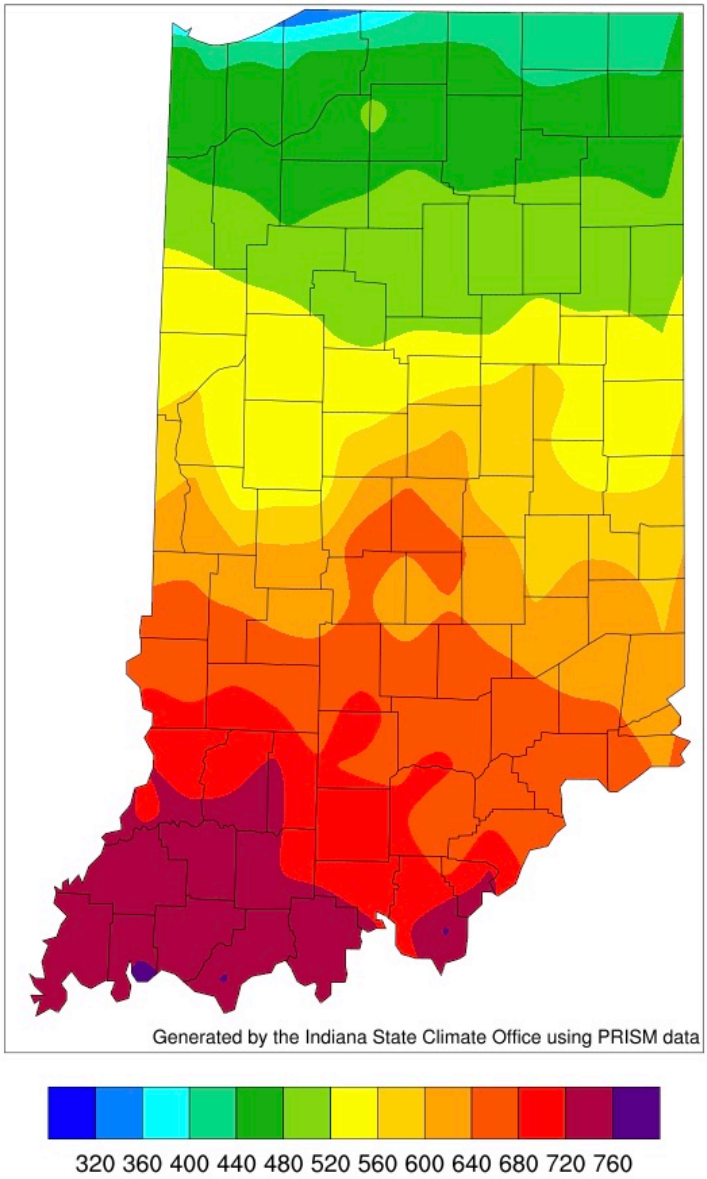


Figure 6. Modified growing degree day (50°F / 86°F) accumulation from April 1 – May 21, 2024.

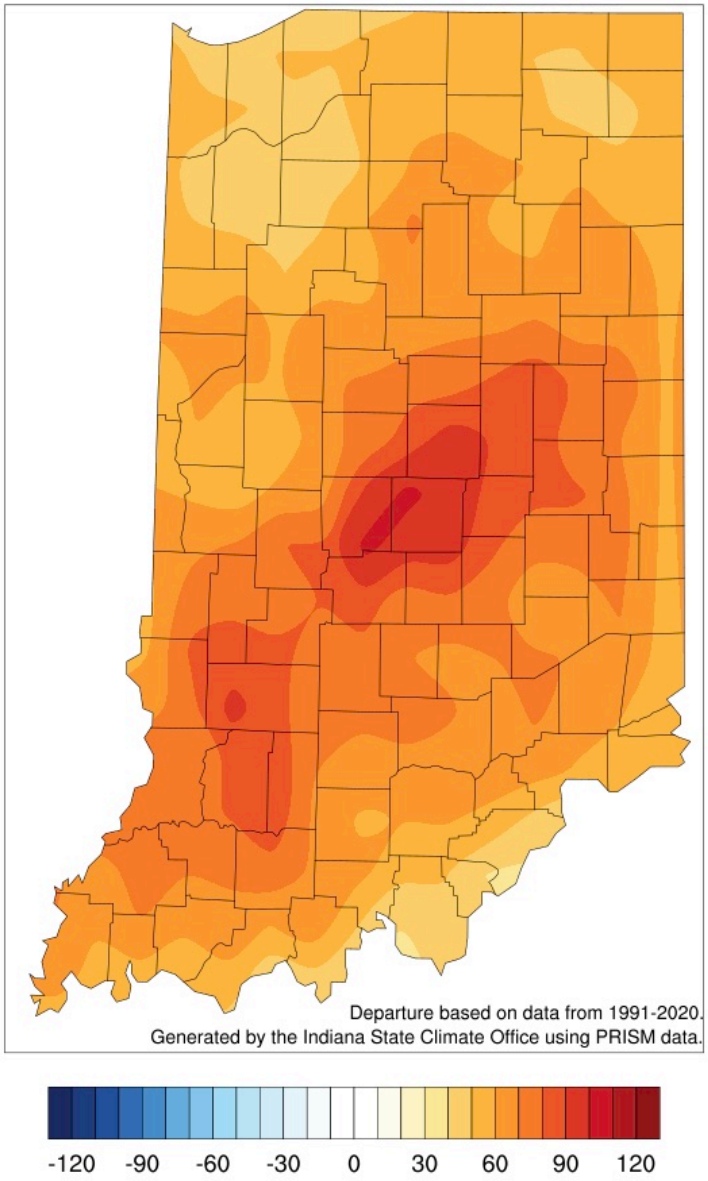


Figure 7. Modified growing degree day (50°F / 86°F) accumulation from April 1-May 21, 2024, represented as the departure from the 1991-2020 climatological average.

Pest&Crop newsletter © Purdue University - extension.entm.purdue.edu/newsletters/pestandcrop
Editor: Tammy Luck | Department of Entomology, Purdue University, 901 Mitch Daniels Blvd, West Lafayette, IN 47907