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Pest & Crop Newsletter

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PURDUE UNIVERSITY | Extension - Entomology

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In This Issue

Armyworm Pheromone Trap Report – 2024

(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	8	41	101	81	18	5	32	37		
Jennings/SEPAC Ag Center	1	8	58	137	60	18	4	6	1		
Knox/SWPAC Ag Center	0	0	41	31	13	8	11	9	2		
LaPorte/Pinney Ag Center	0	44	51	65	33	14	35	9			
Lawrence/Feldun Ag Center	4	125	248	103	69	86	46	49	82		
Randolph/DPAC Ag Center	0	0	25	90	84	0	0	10			
Tippecanoe/ACRE	0	4	37	27	68	30	8	3	2		
Whitley/NEPAC Ag Center	0	0	62	179	381	507	76	139	32		

Wk 1 = 4/1-4/3/24; Wk 2 = 4/4-4/10/24; Wk 3 = 4/11-4/17/24; Wk 4 = 4/18-4/24/24; Wk 5 = 4/25-5/1/24; Wk 6 = 5/2-5/8/24; Wk 7 = 5/9-5/15/24; Wk 8 = 5/16-5/22/24; Wk 9 = 5/23-5/29/24; Wk 10 = 5/30-6/5/24; Wk 11 = 6/6-6/12/24

Take Time To Evaluate Your Pasture Management

(Keith Johnson)

Managing pasture properly requires much skill, just like any agronomic crop. Much skill is required to do it in an "A" grade fashion because there is a livestock component to the agricultural system, too. Proper pasture management is more than opening the gate to the pasture and letting livestock graze season long. *Make a pledge that you will not overgraze pastures this year. The greatest curse to the yield and persistence of perennial forages is overgrazing. Grazed forage should not look like stubble in a hay field.*

Forage mixture. (*Photo Credit: Keith Johnson*)

he figure below found in "Forages Volume 1 – an introduction to grassland agriculture" is an excellent illustration of what happens to root biomass and vegetative regrowth when overgrazing occurs and time is not allowed for plant recovery.

FIG 2.8. Root development of grasses with *(A)* no defoliation, *(B)* moderate defoliation, and *(C)* close, continuous defoliation. Root development depends on photosynthate produced by the leaf area, and leaf area depends on water and nutrients (especially nitrogen) that are absorbed from the soil. (Adapted from Walton 1983.)

If the illustration above doesn't convince you of the negative consequences of overgrazing, the University of Kentucky Forage website time lapse video simulating orchardgrass response differences

to intensity of vegetation removal should do it. Go to the link http://forages.ca.uky.edu/grazing, and click the “UK Orchardgrass” box found in the far left middle of the page. Keep the video content in your mind when you leave more residual growth in the pasture. You are doing the right thing!

The following table includes several statements that need to be followed to have a successful pasture program. Take the time to do a self-evaluation of how good a job **you** are doing with each statement given. Rankings “Strongly Disagree” or “Disagree” require some attention to have topnotch pasture for your livestock.

If you have not developed a team of resource people that can help you with your questions about forage management, a good starting point is to contact your county’s Purdue Extension Agriculture and Natural Resources Educator and Natural Resources Conservation Service (NRCS) personnel. These individuals have a network within their own organizations and know local-regional agribusinesses and producers that will be able to help you with your questions.

Excellent detailed information developed by NRCS employees about pasture assessment can be found at this link National_Pasture_Condition_Scoring_Guide_and_Score_Sheet_-_January_2020.pdf (usda.gov).

Developing excellent pasture management skills require much effort, but the wellbeing of your forages and livestock will be better because you improved your pasture management skills.

Statement	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I soil test at least every third year and apply lime and fertilize based on the test results.					
I know the major soil types on my farm by name and know their strengths and weaknesses.					
I can identify the major forages growing in my pasture and know their strengths and weaknesses.					
I remove livestock from a paddock when cool-season grass/legume forage growth is at least 4 inches in height.					
I stockpile perennial pasture in the late summer and early fall.					
I evaluate pasture growth and potential concerns (overgrazing, weeds, insects, diseases) in the pasture weekly and take action if needed.					
I document when livestock are moved from paddock to paddock.					
Where possible and applicable, I graze crop residues and double crop forages to full potential on my farm.					
I have an agronomist on my list of professionals that has a passion for forage crops.					

Soybean’s Wet Feet

(Shaun Casteel)

Rains have left many fields with standing water and the threat of more rain on the way. In a manner of a few miles, one field received one inch of rain and another field has received 3 inches of rain or more. This story is present across the Midwest. Standing water and ponding has raised the concern of effects on soybeans (Figure 1).

Figure 1. Standing water one day after 3.5 inches of rain. Soybeans are approximately V2. Picture was taken May 25, 2024.

Needless to say, many fields of soybean are struggling with wet feet. The effect on soybean will be related to the growth stage, duration of standing water, temperature, and sunlight/cloud cover.

Saturated and ponded conditions will be limiting oxygen in the root profile, which can cause root and nodule death over prolonged periods. Oxygen is depleted as the roots are trying to respire and utilize the photosynthates that have been produced and translocated from the leaves to the roots. Dissolved oxygen is present in the water, but that will be quickly used. Warmer temperatures and sunny days will deplete the oxygen supply faster as the roots are trying to respire and use the abundant supply of photosynthates. Cloudy days tend to lessen the photosynthetic rates and prolong the plant survival until the water recedes.

Soybeans at young growth stages (VE to V3) can withstand standing water for several days before having impacts on roots, growth, and nodulation. Roots and nodules will start to be compromised when water has been standing for more than 2 days. Soybeans (~V2-3) are naturally transitioning from soil supply of nitrogen (N) to nodules that will be fixing N from the atmosphere. This transition and N supply can be delayed and even reset depending on how long the roots and nodules are under saturated conditions. Detrimental effects to soybeans will start to occur after 4 to 6 days of standing water. The cycle of wetting and drying will be important as soils dry out and oxygen can enter the pore space of the soil even if another round of rain comes a week later and saturates the soil.

We are in a wait-and-see approach on these ponded sections or swiss cheese fields. Some might want to replant or overseed these ponded areas once the fields dry out again. Every situation is unique and the factors of time and cost-benefit must come into the equation. Ponded areas for a few days will likely not need any action even if the soybeans show some delays in growth, development, and N supply. Portions of the field that have been ponded for more than 4 days may still survive, but be restricted in height, node development, nodulation and N fixation, and even yield. However, these yield effects may not be as severe as planting late depending on when you can get back into the field. Late replanting will take time to develop and the operation will damage current stands (~20% loss of the current stand by the replanting operation). These considerations are assuming that the plant stand is still over 100,000 plants/acre in the ponded areas. If the plant

stands are closer to 70,000 plants/acre in the ponded areas, you may consider replanting or overseeding to help fill in the gaps of a poor stand especially with plants that compromised.

As the fields start to dry out and these ponded areas are a concern, I suggest digging up the plants in these fields to assess if the nodules are white, red, or dead. White nodules are immature, but developing. Red or pinkish interior of the nodules indicates that N fixation has started. Brown to mushy nodules are dead and will not supply N. Young soybeans, V2 to V3, may only have three to five actively-fixing nodules (pink to red interior). Soybeans from V4 and onward should have eight or more actively-fixing nodules with more nodules developing. If soybeans do experience root death, sloughing off, and nodule death, new roots and nodules can form once the water recedes and oxygen enters the soil. Please see the following video from several years ago, that show the recovery stages and impact from saturated conditions to soybeans that were a little further along (V3-V4 when the saturated conditions started) along than our current situation.

VIDEO: Soybean Assessment After Wet Conditions

(Shaun Casteel) & *(John Obermeyer)*

In this video, three different areas of a soybean field that have been subjected to extended periods of saturated soils to flooding are assessed for damage. Primarily, once soils allow foot traffic, one should evaluate the health of the root system and nodules. Root and nodule recovery is possible once soils drain and aerate (oxygen supply for respiration and growth). White roots are indicative of being healthy, whereas dark roots are compromised. Nitrogen-fixing nodules will either be white (new and developing), red (pink and producing N), or dead (hollow and mushy). View video here: https://www.youtube.com/watch?v=IMfoghn7Ilk

Meteorological Spring Ending Wet With Drier Days Ahead

(Jacob Dolinger)

As of writing, it appears we're heading into the start of meteorological summer (June 1) with a wet meteorological spring on the books. Meteorological spring will end with over 15 inches of rain from March 1 through the end of May, making it the 24th wettest Spring on record for Indianapolis. Keep in mind, records for Indianapolis go back 154 years, so that's 24th out of 154 springs, which is impressive. Even more noteworthy, however, is what seems to be Fort Wayne's 4th wettest meteorological spring on record since 1897, also with over 15.6 inches of precipitation.

All in all, much of the state looks to end meteorological spring with widespread accumulations of over 15 inches. Some spots, especially in central and southern Indiana, got above 16 inches (Figure 1). However, most of this fell after April 1, and this is displayed by the percent of mean precipitation, which is 100 percent of mean in central and southern Indiana and up to 150 percent of mean for northern Indiana since March 1 (Figure 2). However, when using April 1 as a start date, this switches to 125-150 percent of mean statewide, with the exception of southeast Indiana (Figure 3). For those rain-weary folks, as of May 29, the 8-14 day precipitation outlook from the National Weather Service's Climate Prediction Center (CPC) has all of Indiana leaning toward near normal or even slightly below normal precipitation through June 11. There is a slight signal of 50-65 percent chance of above normal precipitation again for southern Indiana heading through June 21.

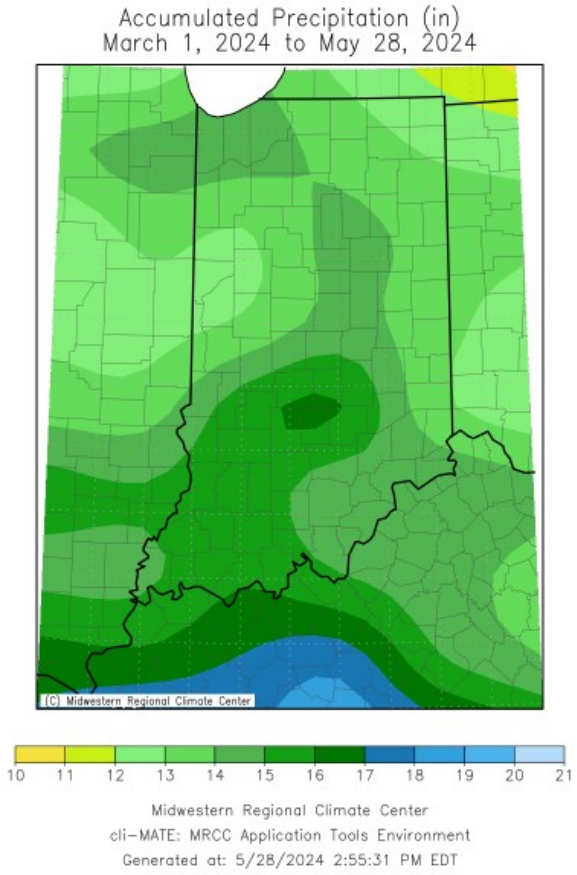

Figure 1. Accumulated Precipitation for March 1, 2024-May 28, 2024.

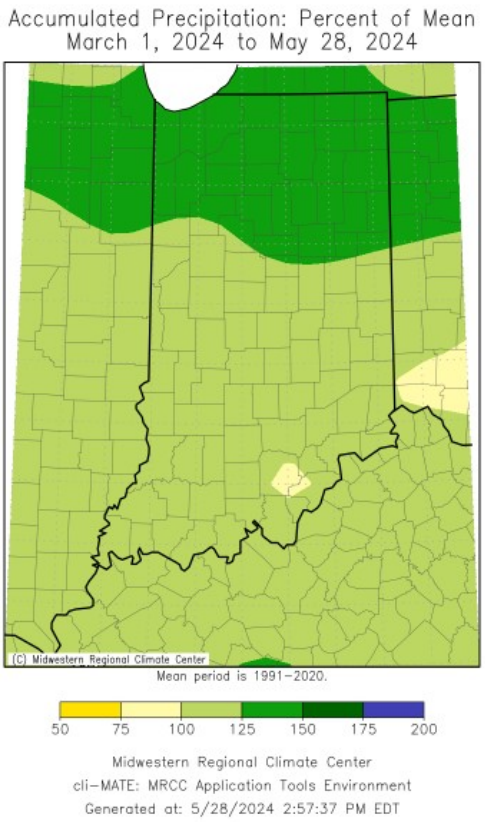

Figure 2. Precipitation Percent of Mean for March 1, 2024-May 28, 2024.

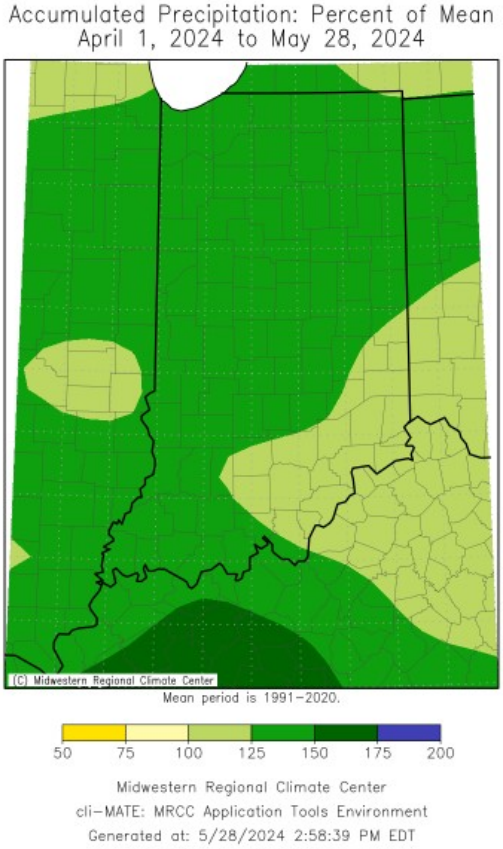

Figure 3. Precipitation Percent of Mean for April 1, 2024-May 28, 2024.

Temperatures have also been above normal, with northeast Indiana and a pocket of southwest Indiana up to 5 degrees above normal while most of the rest of the state hovered 4 degrees above normal since March 1 (Figure 4). It looks like the CPC is predicting near normal temperatures for most of Indiana through June 10, with a slight chance of above normal temperatures through far northern Indiana. As for growing degree days, they are chugging along with major accumulations south of Indianapolis, much of which is well above normal (Figures 5 & 6).

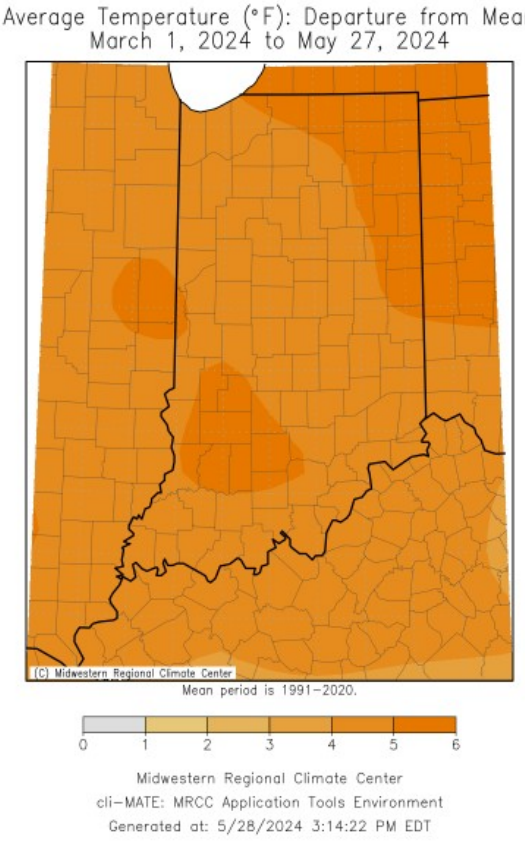

Figure 4. Average Temperature, Dep. From Mean for March 1, 2024-May 27, 2024.

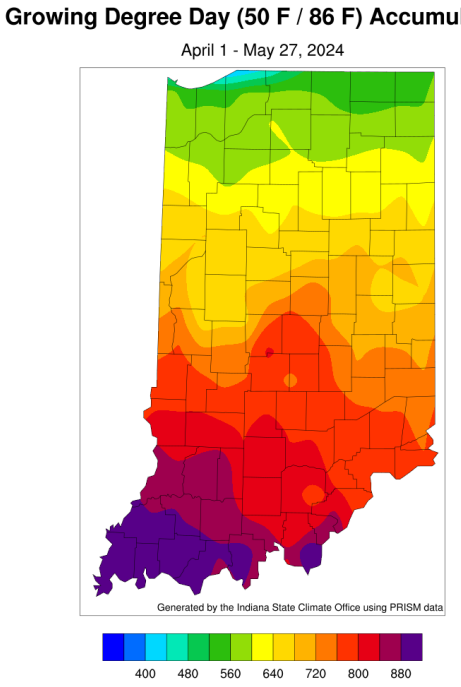

Figure 5. GDD Accumulation for April 1-May 27, 2024.

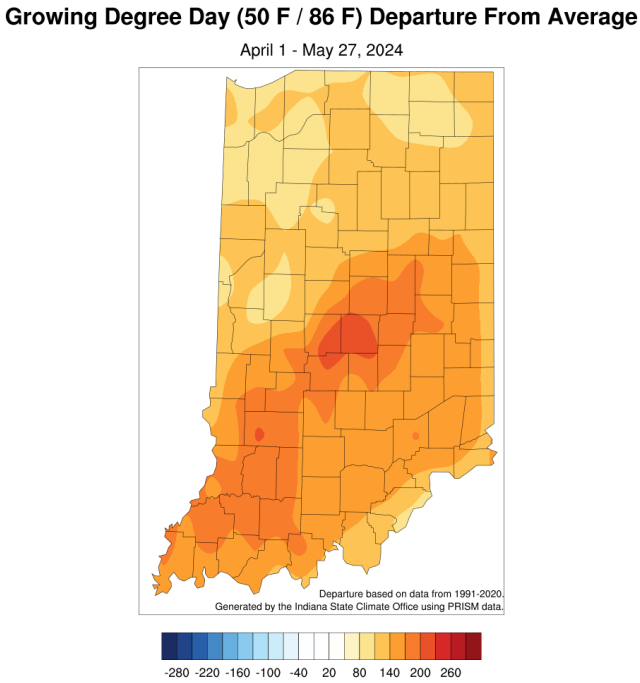

Figure 6. GDD Departure from Average for April 1-May 27, 2024.

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