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Pest & Crop Newsletter

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PURDUE UNIVERSITY | Extension - Entomology

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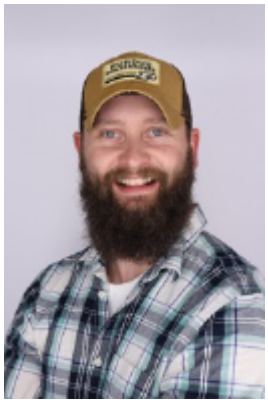
In This Issue

Targeted Weed Management Technologies: New Face, New Tech, And Future Directions

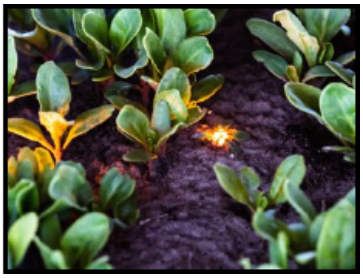
(Tommy Butts)

Well hello to everyone reading this! My name is Tommy Butts, and I am a relatively new Clinical Assistant Professor, Extension Weed Scientist here in Indiana with Purdue University. My position is focused on Site-Specific Weed Management which includes evaluating many of the new technologies currently available and in the pipeline that specifically target weeds within a field. Previously, I was an Associate Professor, Extension Weed Scientist with the University of Arkansas System Division of Agriculture, where I focused on weed management in soybeans and rice from 2018-2024. I originally hail from southern Wisconsin where I grew up working on and around small dairy farms.



I completed my Bachelor of Science in Agri-Business at the University of Wisconsin-Platteville, Master of Science in Agronomy-Weed Science at the University of Wisconsin-Madison, and Ph.D. in Agronomy-Weed Science at the University of Nebraska-Lincoln. My research and Extension efforts focus on identifying novel, applied weed management strategies through diversified methods including the use of precision agriculture, application technologies, and digital data in a targeted approach. I emphasize educational efforts to increase herbicide application knowledge, safety, and effectiveness, while reducing off-target movement, both from ground-based and aerial (manned and remotely piloted spray drone) applications. My overall goal here at Purdue is to generate research-supported and effective weed management tools and educational materials to be used by Indiana farmers and in the classroom to address complex weed problems. Weed management is becoming increasingly challenging, and we need new tools for the toolbox with strategies that can be implemented effectively.

Outside of work, I'm also supported by my wife, Liberty, and three little kiddos, Brooker (4), Brinley (3), and Bennett (newborn). We're all greatly enjoying the Lafayette area, and are happy to call this home. I'm also an avid sports fan (which you'll see sprinkled in to my Extension presentations), and enjoy spending time in the outdoors.



In addition to introducing myself, I also wanted to ask for your help. Several of us within Purdue are hoping to gather insights into crop weed management, thoughts on future weed control technology (spray drones, laser weeders, live detect and remove machinery, robotics, etc.), and economics regarding current and future weed control strategies.

We would appreciate you taking the time to complete a survey regarding these concepts. The survey includes questions detailing current weed control technologies used in field and horticultural crops, future weed control technologies, and the costs associated with such technologies. We appreciate your feedback and all information will be kept confidential to the extent allowed by applicable State and Federal law. No names, contact information, precise locations, or computer IP addresses will be collected. By completing the survey, you are agreeing to allow the use of your responses for research purposes. If you do not wish to complete the survey, this will not impact your relationship with Purdue University. To opt out of taking the survey, simply do not complete the survey.

If you have questions or concerns about this study, you may contact me, Dr. Thomas (Tommy) Butts, at (765) 494-0598 or buttst@purdue.edu. If you have questions about your rights while taking part in the study or have concerns about the treatment of research participants, contact the Human Research Protection Program at (765) 494-5942, irb@purdue.edu, or Human Research Protection Program –

Purdue University Ernest C. Young Hall, Room 1010 155 S. Grant St. West Lafayette, IN 47907-2114. To report anonymously via Purdue's Hotline see www.purdue.edu/hotline.

Information gathered from the survey will provide direct insights into current weed management practices for field and horticultural crops, awareness of new technologies, and thoughts regarding the feasibility of implementation of these new technologies. This will allow us to better address your weeds-related needs and concerns to prioritize in future Purdue University College of Agriculture research and Extension efforts.

Please follow the link: https://bit.ly/PUWeedTechSurvey to access the survey. It should take approximately 15 minutes to complete.

Thank you for taking the time to read this article and for completing the survey. If you have any questions regarding the survey or weed management issues, please feel free to contact me at any time. I look forward to continue meeting with all of you across the state, and providing assistance wherever I can!

Bt Corn Trait Table Updated For 2025

(Christian Krupke)

Prepared and updated annually by Christina Difonzo at MSU, this is your one-stop resource for deciphering Bt corn trade names and knowing which insecticidal traits are in your corn hybrids.

The most up-to-date version and related extension materials are free online at: www.texasinsects.org/bt-corn-trait-table.html

Register By March 1 For The Resilient Agriculture Summit At The Beck Center

(Christian Krupke)

Attendees will gain insights into the latest advancements in resilient agriculture, discover effective practices and learn how to implement these strategies into their own operations to improve environmental sustainability and farm productivity. Additionally, participants will be asked to share questions that Purdue applied research can address going forward. Register and view the agenda at the link below:

https://ag.purdue.edu/department/entm/resilient-ag-summit.html

MRCC And Purdue On the Farm's Joint Soybean Production Workshop

(Austin Pearson)

The United Soybean Board, in collaboration with the Midwestern Regional Climate Center (MRCC) and Purdue on the Farm, invites soybean producers and advisers to a subregional workshop focused on utilizing climate data to enhance soybean production and to learn about opportunities with Purdue on the Farm. The workshop will occur at the Indiana Soybean Alliance, 8425 Keystone Crossing #200, Indianapolis, IN 46240, on Friday, March 14, 2025.

Participants will learn about freely available agricultural climate decision-support tools and contribute to the development of a comprehensive weather-informed decision dashboard. They will also have the opportunity to shape future decision-support tools produced by the MRCC. Additionally, attendees will learn about the Purdue on the Farm program and explore research opportunities for 2025.

Registration is free but required for planning purposes. *The first 25 registered participants who request travel reimbursement will receive a $350 honorarium.* Meals will be provided during the workshop. The flyer provides additional details. Contact pearsona@purdue.edu for questions.

Please register by March 7, 2025, at https://bit.ly/USB-Indianapolis.

Empowering soybean producers: Harnessing Climate Tools Purdue on the Farm

Is Springlike Weather Finally Here?

(Beth Hall)

Indiana has had its fair share of very cold temperatures this winter. In January, wind chills were teasing the -20°F mark across much of the state, which is becoming increasingly rare due to global warming. This is a good reminder that "global warming" is just that – "global" and not local. Locations elsewhere on our planet were still above normal; Indiana just happened to be in one of those isolated pockets where below-normal temperatures were hanging around. February (so far) has been slightly warmer, but as of February 25th, the average daily temperature has still been 1 to 3 degrees below normal. Last week was likely the significant contributor to those below-normal average temperatures for the month.

Regarding snowfall, southern Indiana has received up to 10 inches above-normal amounts, while northern Indiana has received up to 20 inches below normal (Figure 1)! This has been quite unusual since northern Indiana tends to receive much more snowfall than southern counties. Since December 1, 2024, the snowfall totals across the state

have been relatively even with amounts ranging mostly between 10 and 20 inches. If we combine how snowy and how cold this winter has been so far, how might it compare historically? The Midwestern Regional Climate Center provides the Accumulated Winter Season Severity Index (AWSSI [pronounced like "Aussie"]; https://mrcc.purdue.edu/research/awssi). According to this tool, this winter (so far) has been "Severe" for southern Indiana and "Moderate" to "Mild" in northern Indiana (Figure 2).

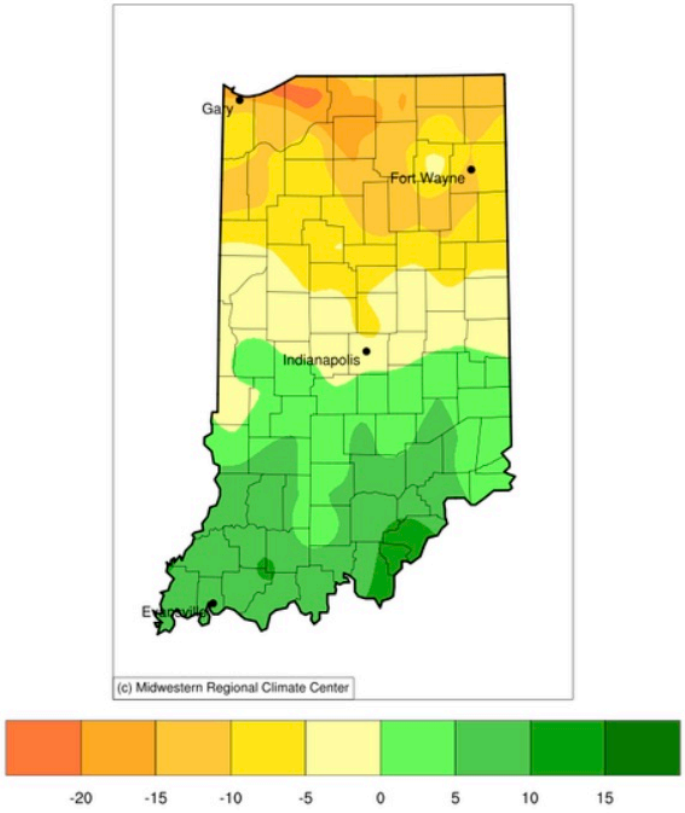


Figure 1. Snowfall departure (in inches) from the 1991-2020 normal period for December 1, 2024 through February 25, 2025.

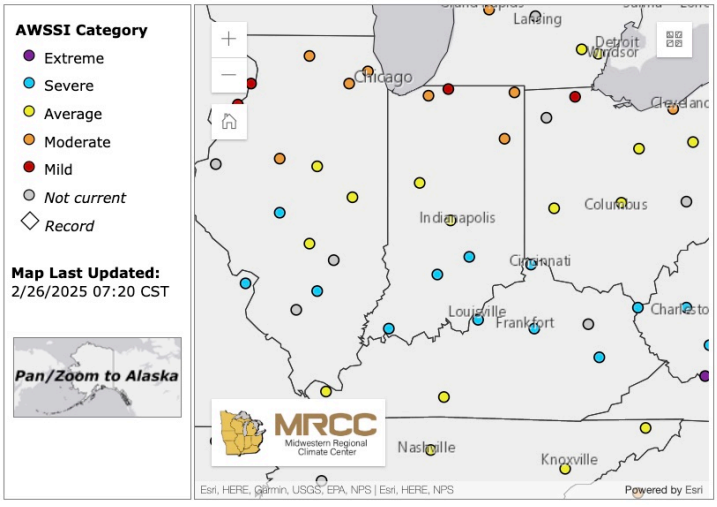


Figure 2. Accumulated Winter Season Severity Index (AWSS) for data up through February 25, 2025.

Will things start improving? According to Punxsutawney Phil (our fearless, yet often incorrect, prognosticating groundhog), we should expect six more weeks of winter (since February 2nd). Of course, astronomically, he's spot on, since there were six more weeks until the spring equinox. I'm never quite sure how to assess if he is correct from the social perspective. Would this mean those six weeks will be colder than normal? Snowier than normal?

From a more scientific perspective, temperatures over the next 7 days are expected to be near normal with maximum temperatures ranging from the mid 30s°F in northern counties up to the low 50s°F in the southern counties. Precipitation is expected to be most active around the middle of next week with amounts between 0.75 to 1.5 inches (Figure 3). Climate outlooks over the 6-to-14-day period (through March 11th) are slightly favoring above-normal temperature with above-normal precipitation in the early part of that period and near-normal precipitation amounts near the end. Beyond that, both the March as well as the March-April-May climate outlooks are strongly favoring above-normal precipitation with strongest confidence over the Indiana-Michigan-Ohio region. There is no indication about whether temperatures will be above or below normal for these periods. While this could suggest another wet spring that may bring challenges to row crop planting, the climate models are seeming to be heavily influenced by the La Niña that's been lingering in our tropical Pacific Ocean. If that dissipates, then the climate outlooks may transition away from these patterns and perhaps this coming spring will not be as wet as the climate models are predicting.

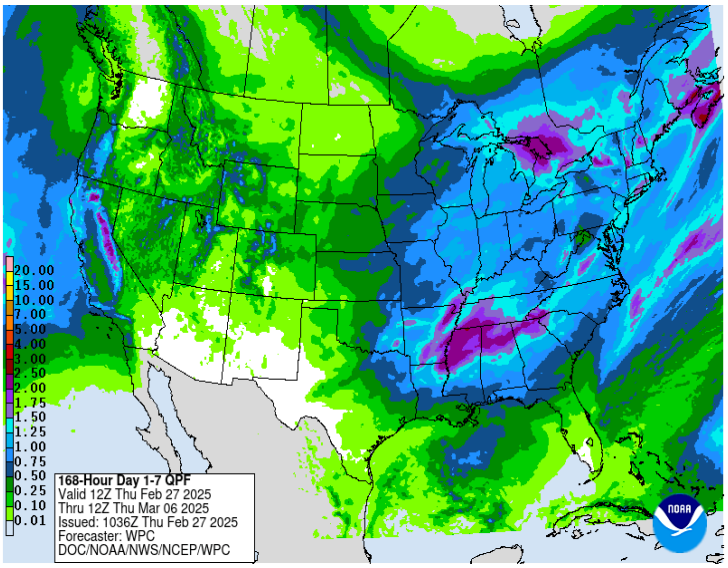


Figure 3. Seven-day precipitation totals for February 28 through March 7.

In the meantime, enjoy these more spring-like conditions but know chances are still high for at least one more freezing temperature weather system to pass through our area!

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