

INSIDE AGRONOMY

ISSUE 17 - MAY 19, 2025



Agronomy

THE PITCHFORK HAS RETURNED TO AGRONOMY!



Dr. Eileen Kladvko received the traveling trophy "pitchfork" from Dean Engle. The pitchfork is handed off each year to the College of Ag Food Finders Food Drive competition winner. It will be on display in the large conference room throughout the year. Thank you again to all who supported this fundraiser!

Congratulations to our Graduate Student Coordinator, Sophia Qu, who received her MBA on May 3!



SENIOR SEND OFF

Several graduating seniors attended the annual Senior Send Off, previously Steak Fry on Sunday, May 4th. The annual event gives seniors, faculty and staff an opportunity to interact outside the classroom one last time. Thank you to Jane Wiercoich and Dawn Bull for organizing the event.



The Purdue Soils Judging Team recently finished the year with a trip to Nationals held in Stevens Point, WI. It was a great contest and the team worked hard through very tough weather conditions. They were also able to enjoy visiting the Farm and Food Museum and Monk's Restaurant while on the trip.

The Team placed 12th Overall

The Team placed 5th in the Group Judging

Emmaline Seest placed 3rd overall as an Individual

Bryce Brown placed 12th overall in the Alternates Contest



2025 SOILS TEAM

Congratulations and best wishes to the graduating seniors from the Soils Team!

Madilyn Morgan

Emily Harker

Allie McCabe

Students who traveled to Wisconsin

Emmaline Seest

Emily Harker

Kyra Kiel

Katelyn McMillian

Bekah Turner

Nick Beckner

Bryce Brown

Landon Brown

**FARM
AND
FOOD
MUSEUM**



Students who traveled to Texas

Allie McCabe

Kaia Wright

Madilyn Morgan

Anna Phillips

Levi Brush

**MONK'S
RESTAURANT**



**2025
SOILS
AND
CROPS
TEAMS**



INDIANA CORN

RESEARCH & UPDATE

Summary:

- From South to North: Tracking Indiana's **Planting Progress**
- Purdue Corn Team **Research Update**
- **Cover Crops**, Winter Annual Weeds, Caterpillars, and Crops
- What **Farmers Think** About Tariffs: Tight 2025, Strong Future?
- A Bit of **Rain Coming** Our Way



Jeferson Pimentel
Project Head

[!\[\]\(17413706fd4997a1a4bdf85c6864eee1_img.jpg\) @jeferson-pimentel](#)



Bruno Scheffer
Chief Editor

[@brunopscheffer](#)

Key Differences in GDD Products and Where to Track Seasonal GDD Accumulations

Austin Pearson, Climatologist, Midwestern Regional Climate Center, Indiana State Climate Office

Tracking plant growth and pest development is essential for timely decisions throughout the growing season. Agronomists and growers utilize Growing Degree Days (GDD) - a measure of daily heat accumulation - to predict the developmental stages of crops and pests, guide field scouting, and assess intervention techniques. GDDs are accumulated daily, starting from a user-selected beginning date. Common starting dates are April 1st, April 15th, or May 1st.

Depending on the specific crop or pest, different temperature thresholds are applied for GDD accumulation. A standard temperature threshold (base temperature, T_{base}) used in agriculture is 50°F, assuming plant growth occurs above this temperature. The daily GDD is calculated using the maximum (T_{max}) and minimum (T_{min}) temperatures and T_{base} . For example, if the maximum temperature was 90°F and the minimum temperature was 47°F, the daily GDD would be 18.5.

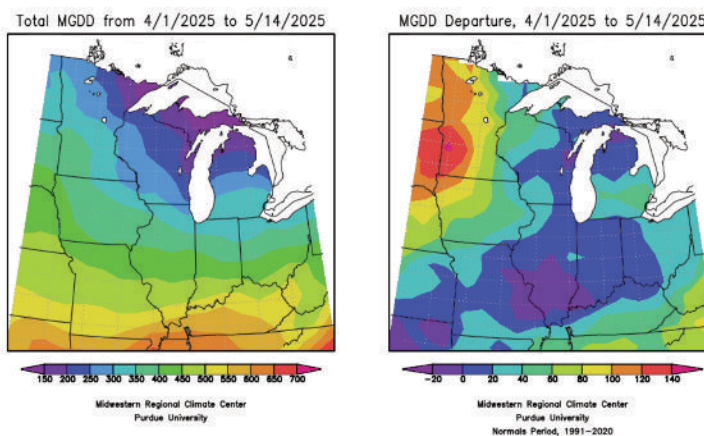
$$GDD = \frac{T_{max} - T_{min}}{2} - T_{base} = \frac{90 + 47}{2} - 50 = 18.5$$

When maximum temperatures exceed a certain threshold, typically 86°F, crops may show signs of stress and limited growth. Modified Growing Degree Days (MGDDs) incorporate a 'ceiling', which caps the T_{max} at the specified ceiling temperature. Additionally, if the low temperature falls below the T_{base} , it is adjusted to the base temperature (since no meaningful growth occurs at lower temperatures).

Most commonly, MGDDs implement a base of 50°F and a ceiling of 86°F. In other words, if T_{max} exceeds 86°F, T_{max} is set to 86°F. If T_{min} is below 50°F, then T_{min} is set to 50°F. Using the T_{max} and T_{min} from the previous example, the daily MGDD calculated would be 18. There is not a big difference in this scenario. However, larger differences could be seen earlier in the season, leading to an underrepresentation of accumulated heat units.

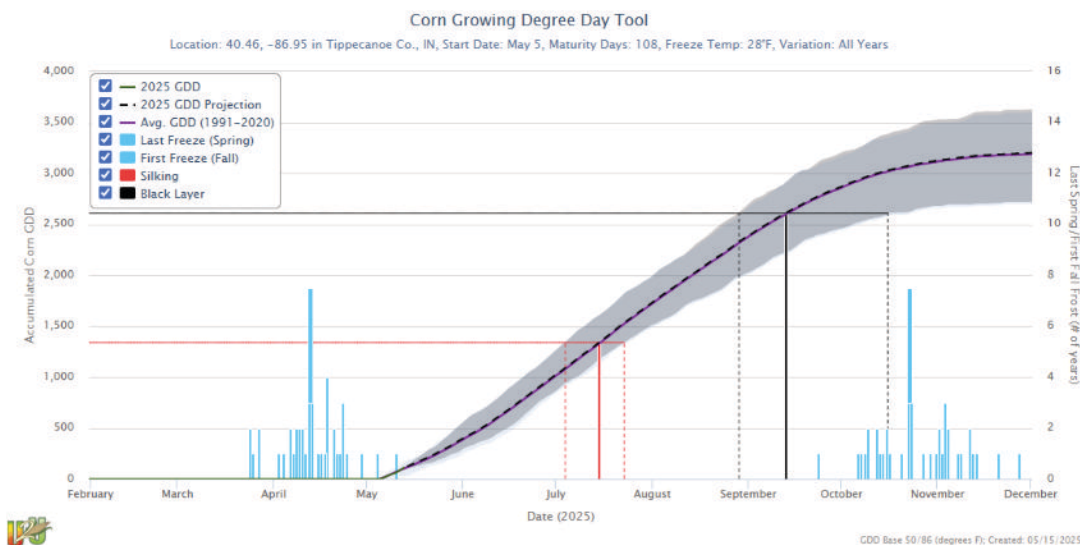
$$MGDD = \frac{T_{max} - T_{min}}{2} - T_{base} = \frac{86 + 50}{2} - 50 = 18$$

It is essential to pay attention to how different tools calculate the GDDs, as this can explain why the products may show different accumulations. The [Midwestern Regional Climate Center \(MRCC\)](#) tracks accumulated MGDD (ceiling: 86°F, base: 50°F) throughout the growing season with two start date options: April 1 and May 1. Both include departures from the 1991-2020 climatological average. For example, the April 1 to May 14, 2025 map indicates that Indiana has seen between 300 and 550 MGDDs, which is within 20 units of normal.



The MRCC's [Corn GDD tool](#) uses MGDD to track corn growth from a specified planting date and estimate key growth milestones. Users select their location and customize

the GDD start date and maturity rating. The tool monitors GDD accumulation from planting to the current date and then uses typical GDD accumulations based on 30-year average (1991-2020) data to estimate future GDDs through the season. The tool also indicates when silking is expected and provides a range for achieving full maturity (black layer). In the provided example, Farmer P. Pete from Tippecanoe County, Indiana, chose May 5, 2025, for planting with a 108-day maturity hybrid. As of May 15, 2025, P. Pete's corn silking is expected around July 15, with full maturity by September 13, assuming temperatures accumulate normally. Corn growth dates may shift based on weather patterns across the growing season.



The MRCC recently released the experimental [Weed Emergence Scouting Tool](#), which helps producers track the estimated and peak emergence dates for giant ragweed and waterhemp based on GDD accumulation. Be sure to check it out or read our recent [news release](#).

And beyond plants, GDDs are commonly used to track insect growth stages. The [Iowa Environmental Mesonet](#) offers a GDD tracking tool for [Alfalfa Weevil](#) and other pests, using a base temperature of 48°F and a ceiling of 90°F from entomology research. Users can set the start date and pest, receiving a map and GDD data for egg hatch (300 for Alfalfa Weevil) and peak larval feeding (575 for Alfalfa Weevil). It also predicts GDD accumulation for early pest detection over the next 7 and 14 days.

There are dozens of GDD calculators, maps, and tools; this article notes just a few. For more information, contact Austin Pearson at pearsona@purdue.edu.

Agronomy Retirement Picnic

FRIDAY, MAY 30TH

OPEN HOUSE: 11 AM

LUNCH: NOON

AGRONOMY CENTER FOR RESEARCH & EDUCATION (ACRE)

HONORING



Darrell Schulze



Gary Steinhardt

REGISTER TO ATTEND:



purdue.ag/agrypicnic



P
PURDUE
UNIVERSITY®

Agronomy

*In case you
missed it...*

All issues of Inside
Agronomy are available
on the Agronomy website.
Click below to view past
issues.

[Inside Agronomy](#)



Share news, articles, and
publications in Inside Agronomy by
emailing the information to
Stephanie Orem solem@purdue.edu



TILE DRAINAGE INSTALLATION FIELD DAY



WEDNESDAY
JUNE 18TH

**AGRONOMY CENTER
FOR RESEARCH AND
EDUCATION (ACRE)**

4540 US Hwy 52 W
West Lafayette, IN 47906

8AM-4PM



For more information,
contact:

Nanci Gutwein 219-204-1722
or indianalica@gmail.com

Please note: This free event is weather dependent. Rain dates will be June 19& 20th. Register to be included on the email list for event updates.

[CLICK THIS LINK TO REGISTER](#)



Indiana LICA



219-204-1722



Indiana_LICA

AGRY 624

PLANT ECOPHYSIOLOGY

AGRY624 is back again!
Come learn about the underlying
processes of plant-environment
interaction



Days

Tues/Thurs



Time

3:00pm - 4:15pm



Location

MATH 215

QUESTIONS?

contact: Diane Wang
dianewang@purdue.edu



SAVE THE DATES

COLLEGE OF AGRICULTURE NETWORKING GATHERINGS

LEARN MORE AT: purdue.ag/coag-networking



MARCH 7, 2025
3:00-6:30pm

Joint Poster Networking Gathering
Colleges of Agriculture & Engineering

► *Marriott Hall*



JULY 10, 2025
3:00-6:30pm

**Mandela Washington Entrepreneurial
Fellows Poster Networking Gathering**

► *Lafayette Brewing Company (Upstairs)*



SEPTEMBER 5, 2025
3:00-6:30pm

**CoAg Graduate Student Welcoming
Poster Networking Gathering**

► *Marriott Hall*



AUGUST, 2025
DATE & TIME TBD

Experience ACRE
Celebrating agricultural field research

► *Agronomy Center for Research & Education*



OCTOBER 3, 2025
3:00-6:30pm

Global One Health

► *Marriott Hall*



January 30, 2026
3:30-6:30pm

Fermentation Frenzy

► *Marriott Hall*

*THANK YOU TO
OUR SPONSORS:*

