The Root Connection

Fall Edition 2025

It’s been a whirlwind of learning and growth over the past three months here at Purdue Extension! I want to thank everyone who responded to our postcards—your feedback gave me a great sense of the programs you're interested in from Agriculture and Natural Resources. Some of the top requests included Forages, Farm Management, Digital/Precision Ag, and Women in Ag—all topics I’m truly passionate about!

Now that I’m starting to find my footing, I’m planning programming that aligns with those interests. I’m excited to offer more opportunities locally and to collaborate with state teams to bring fresh ideas from other counties right here to Fulton County.

Our Pinney Purdue Field Day was a great success, with over 400 attendees! We had four expert-led ag sessions, field tours, and a hearty pork chop lunch—it was a fantastic day in Wanatah.

With harvest season just around the corner, I’m looking forward to seeing combines roll out and enjoying all the fun fall activities that come with it. Wishing everyone a safe and successful harvest!

If you ever have questions about pests, crops, livestock, landscaping, or gardening, please feel free to reach out—I’m here to help!

Abby Anspach

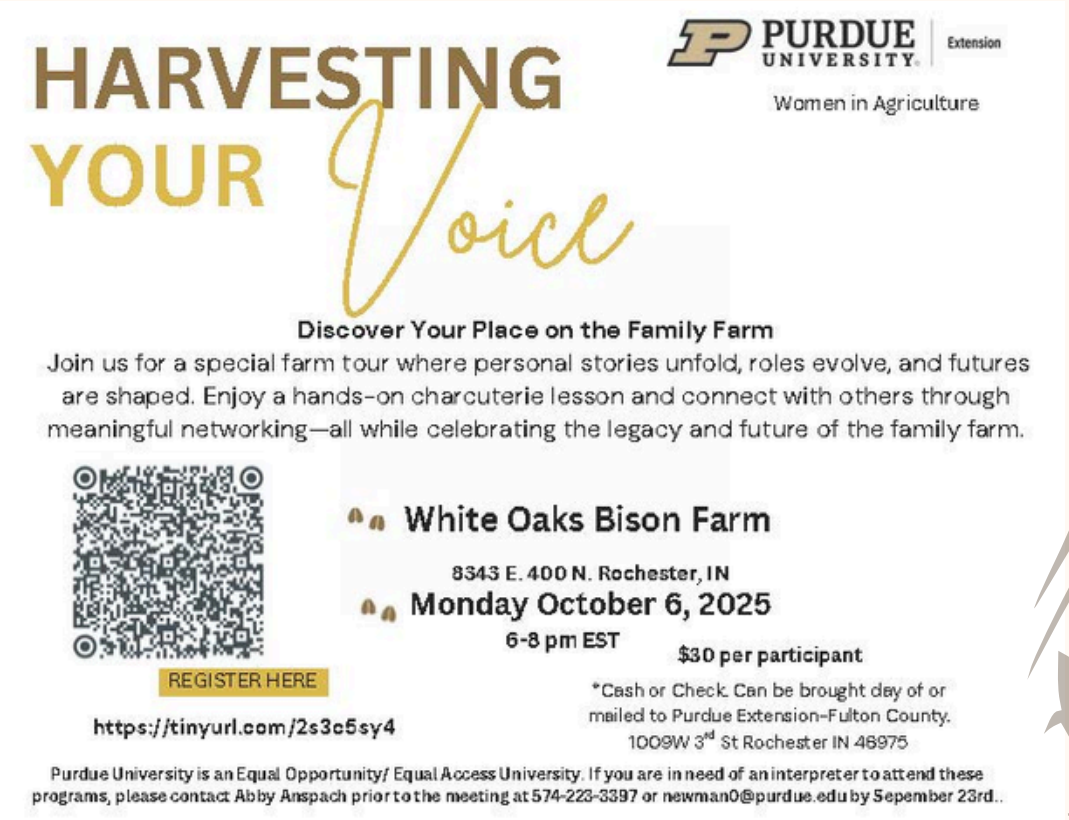
ANR Educator
Purdue Extension

UPCOMING PARP EVENTS

No events in the area just yet—but stay tuned!
Winter is typically when most of our programming takes place, so keep an eye out for announcements coming soon. We're working on some exciting opportunities you won't want to miss!

UPCOMING EVENTS

It's time register! If you have considered Flexible Leases for your farm, here is the program for you: Flexible Lease Workshop, a two-hour presentation with Q and A time, offered virtually - during the morning or evening - whichever time fits your needs. This workshop is set for September 16 (evening) or September 23 (morning.) Here is the live link to our event registration: https://cvent.me/xeaWL3



Hot, dry harvests lead to combine fires – take preventive steps now!

September 8, 2025 / Edward J Sheldon

Combine fires cost farmers millions of dollars in damages every harvest, and even worse, result in injuries and deaths. The current dry conditions, and forecasts for more hot, dry weather in the next couple weeks make it likely we'll see plenty of combine and field fires this fall. As Harvest '25 ramps up, be proactive and prevent or at least reduce the chance of combine fires before they happen!!

Farmers should regularly inspect their combines' machinery, fuel lines and electrical systems during harvest season to prevent fires, a Purdue Extension safety specialist says.

Harvest season brings a unique combination of risk factors that increases the risk of combine fires, said Bill Field, professor of agricultural and biological engineering. Dust kicked up during field operations and dry plant material from crops can clog or wrap around machinery, causing it to overheat. Other common hazards are electrical malfunctions, sparks from hitting rocks, loose or slipping belts and leaks in fuel or hydraulic lines.

Worn bearings or seals and blocked exhaust systems can cause overheating and sparks.

Inspecting equipment at the end of the day can help prevent overheated components from catching fire during the night, Field said, and a hand-held thermal camera can help detect hot areas before they ignite.

Some components of the combine's electrical systems are also at higher risk of overheating, particularly parts like starter motors and heating and cooling systems that draw a heavy electrical load. "Fuses that blow regularly should be considered an important warning sign that a circuit is overheating somewhere," Field said. "Every fire involves three elements – an ignition source, fuel and oxygen. Removing one or more of these elements will prevent fire, so as you examine the combine, other agricultural machinery or a building, consider the potential for each element and where they are likely to come together to form a fire."

In case a fire does start, farmers should always have a cellphone or two-way radio with them in the cab. Also, combines and other large units should have at least two 20-pound, type ABC fire extinguishers installed, with one of those in the cab or just outside the door, Field recommended.

These extinguishers should be inspected regularly to make sure they are fully pressurized, the lock pin is intact, tamper seals are unbroken and the tank is still full. The first use of the fire extinguisher should be to ensure the operator is able to escape safely. Only when the operator is safely clear of the machine should he or she attempt to put out the fire.

A second line of defense is to have a tractor and disc on standby to create a firebreak around the combine, Field added. This can help keep the flames from spreading across the field or to neighboring properties. When tilling a firebreak, the operator should never put themselves or their machine at risk of being caught in the fire!

Since insulated cabs may prevent operators from noticing smoke or flames until it is too late, combine fires can start without warning and quickly grow out of control, Field said.

"Even small leaks in a fuel or hydraulic system can cause a small fire to become a large one in seconds," Field said. "For example, a leak causing diesel fuel to be sprayed into the engine compartment of a tractor or combine can cause the compartment temperature to go from a normal operating temperature to over 1,000 degrees Fahrenheit in seconds. Fires of that intensity are almost impossible to extinguish before the machine is destroyed."

In addition to damaging or destroying the combine, other consequences may include crop loss, field fires spreading to adjoining properties, and operator injury or death.

"Ultimately, the only good fire is a contained one that keeps us warm," said Field. "Keeping it that way in the field should be part of every farmer's management plan this fall."

A Faster Way to Predict Corn Yields Using Ear Images

(Pedro Cisdeli, Gustavo Santiago, German Mandrini, Ignacio Ciampitti)

A Faster Way to Predict Corn Yields Using Ear Images

Researchers at Purdue Extension have developed a faster, less labor-intensive method to estimate corn yields before harvest using images of corn ears still in the husk. Traditionally, yield prediction involves manually inspecting and counting kernels, but this new approach uses smartphone and depth cameras to capture ear size and shape during late growth stages (R4–R6).

Depth cameras, now common in modern devices, provide 3D-like data that helps calculate ear length, diameter, and volume. These cameras can be mounted on farm equipment, enabling automated scouting and real-time monitoring.

Computer vision software identifies and isolates ears from field images, even under challenging conditions like glare or leaf obstruction. Once isolated, the depth data allows accurate measurement of ear traits.

Yield predictions based on these images closely matched actual harvested data, showing strong potential for early forecasting. This tool could help farmers make timely decisions about inputs and harvest logistics, improving return on investment.

Future research aims to expand testing to earlier growth stages and more corn hybrids. Ultimately, farmers may use smartphone-based tools to scout fields and estimate yields quickly and efficiently.

Learn more: https://ciampittilab.github.io/projects/maize-ear-sensing

From Dan Quinn's weekly Newsletter The Kernel

Purdue Extension, publishes several on-line newsletters, blogs and websites that you may be interested in to stay up-to-date:

- Purdue Agricultural Economics Report https://ag.purdue.edu/commercialag/ho me/purdue-agricultural-economics-report/
- · Pest & Crop Newsletter (field crops) https://extension.entm.purdue.edu/pest crop/
- Facts for Fancy Fruit https://fff.hort.purdue.edu/
- · Purdue Landscape Report https://www.purduelandscapereport.org /

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