



U.P. Ag Connections Newsletter

July 2026

Agricultural News from MSU Extension and AgBioResearch

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News and Views

By Frank Wardynski

The National Drought Monitor shows abnormally dry conditions along the western shores of Lake Superior, in the eastern UP, mostly in Luce County and the southern tip of Menominee County. Lower Michigan shows no color on the National Drought Monitor. If anything, I have heard complaints about conditions being too wet. Recently, high heat and wildfire smoke have been the story; temperatures have been in the upper 80s and 90s and air quality is poor.

Cattle have exhibited heat stress, and the flies have been brutal. Horn flies, stable flies, deer flies, and even horse flies have been reported. It's not always possible, but shade, particularly in brushy areas, is best for these types of temperature and fly problems. I know some farmers allow cattle access to streams and ponds to help fight heat stress. I try not to do that. If the heat is only a problem for a day or two, they really do not need it. Heat stress accumulates over consecutive days, especially when cattle cannot get relief from cooler evening temperatures. If the heat continues for days, those water areas get destroyed, causing bank erosion and stream pollution from manure and sediment. It just becomes a mess.

Last month, I discussed the importance of biosecurity and how seriously we need to take it. Tuberculosis, New World screwworm, Asian longhorned tick, and foot-and-mouth disease are all concerns. I recently heard of another risk that usually doesn't come to mind: cattle rustling. In early July, 20 head of 800-pound feeder steers were stolen in Edgar, Wisconsin, which is near Wausau. Most places in the U.P. are more isolated than that. I guess it only makes sense that high cattle prices are going to lead to these types of activities.

So, I ask, are you prepared to protect livestock from cattle rustling? I do not have a great list of activities to think about, but here are a few ideas off the top of my head:

- Good fences and gates – Keeping livestock secure on your own property is the first thing that comes to mind. Good fences and secure, lockable gates will be much better than poor fencing and simple electric fence gate handles.
- Wireless fencing collars – I don't have a wireless fencing system in place yet, but I have seen producers who use them. They can see where each individual animal is located. That alone would help track animals and determine where they were taken. Of course, the collars can be removed, but valuable evidence could be obtained by knowing where the animals were when the collars came off. Now that I think about it, this is my number one recommendation.
- EID tags – You can't track where your cattle are located based on an EID tag like you can with wireless fencing collars. However, if thieves are not smart enough to remove the tags before attempting to move or sell the livestock, these tags should identify the animals as having come from your operation. I am going to think more about this and develop a better list of resources in the near future.

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Plant identification? There's an app for that—actually several!

By Erin Hill

Plant identification apps for smartphones have seen significant improvements over the past several years. Now AI offers to take a photo and get an instant identification, but are they reliable?

We are driven to identify plants for many reasons; sometimes it is a curiosity about the world around us, other times it is out of the desire or need to manage areas like gardens, agricultural fields, restored habitats, and/or natural preserves. Plants are the foundation of food webs and they are tied to our understanding of how ecosystems function. Plant identification has been and continues to be a matter of familiarity, knowledge passed down through mentorship by family or friends, or perhaps something learned in school. One can also seek expert advice.

Plant identification is one of the many services offered at [MSU Plant & Pest Diagnostics](#) and the MSU Herbarium. Help is also available through Michigan State University Extension via the Lawn and Garden Hotline (1-888-678-3464) or [Ask Extension](#).

A bit of history

There are several smartphone apps available to assist with plant identification. I began evaluating plant identification apps in 2018 for use in the Weed Science Laboratory class at MSU (i.e., CSS226L, now CROPS226L) and for presentations to various garden and commodity groups.

From 2018–2020, I evaluated a minimum of six apps (available for both Android and iOS smartphones) using 10-12 plants, with the best performing apps carrying over to the next year's evaluation. In the fall of 2021, I drastically increased the number of identifications used to rank the apps by involving groups of university students enrolled in the lab.

The 2025 test

Since 2018, the students and I have evaluated a total of 17 apps (see complete list at the bottom of the article), and in 2025, we added three AI platforms. In this most recent test, all the apps and AI used photo recognition and often geolocation information to identify plants, but some tested in the past required more descriptive input from the user, similar to traditional plant keys. Most are free or have a free version. It is important to read all terms before downloading or purchasing apps and using AI platforms. This assessment is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by MSU Extension or bias against those not mentioned.

The students in the weed science lab learn plant identification skills as an integral part of the curriculum, and the addition of the app/AI evaluation supplements traditional methods. Lab groups were asked to photograph 10 plants during our field trips on MSU's campus to Beal Botanical Garden and the Hancock Turfgrass Research Center. The identity of each plant photographed was confirmed with me prior to completing the exercise. Photos were not edited and aimed to realistically replicate the average person's input. It should be noted that many of the apps provide detailed descriptions or



Figure 2. Daylily (*Hemerocallis* spp.) was an example of a flowering ornamental. Photo by Kendall Dumaw and Micah Long.



Figure 3. White clover (*Trifolium repens*) was an example of a flowering/fruitleaf weed. Photo by Dion Myers, Elizabeth Othmer, Rayana Slack.



Figure 4. Buckhorn plantain (*Plantago lanceolata*) was an example of a vegetative broadleaf weed/plant. Photo by Liam Mehren, Elizabeth



Figure 5. Giant foxtail (*Setaria faberii*) was an example of a flowering grass. Photo by Henry First, Drew Morr and Derek Schornack.

videos on how to best take photos to increase the chances of success. We did not discuss specific instructions prior to the class testing the technologies, reflecting the average user’s likelihood of reading instructions.

‘Correct identifications’ were considered to be 100% accurate for the scientific name (i.e., Latin genus and species, e.g., large crabgrass is *Digitaria sanguinalis*). Partial was assigned when a technology correctly identified the plant to the genus level, but not to species (i.e., a photo of green foxtail was identified as *Setaria faberi*, or giant foxtail, instead of the correct *Setaria viridis*, or green foxtail) or the correct answer was not the highest suggestion on the list for technologies that make multiple suggestions. These answers may still be helpful towards successful identification but are not entirely correct. Incorrect was designated if neither of the previously mentioned criteria were true.

Using this process, each of the apps and AI platforms was evaluated 136 to 203 times in 2025, up to 21 times per category. The apps and AI platforms were ranked based on the comparative percentage of correct identifications across all categories.

The results

The top performing plant identification technology in the 2025 evaluation was [PictureThis](#), with 76% of the suggested identifications being correct (Figure 11). If the partial ratings (11%) are added to the correct ratings, we see that the app was helpful 88% of the time, averaged across all plant categories. Following this lead was ChatGPT (54% accuracy, 68% if you add the partially correct answers). The remaining two apps and AI platforms fell between 28-48% in accuracy in providing correct answers in the following order from most to least accurate: Google Lens, Gemini, CoPilot and Seek. The addition of the partial ratings increased that range to 46-63%.

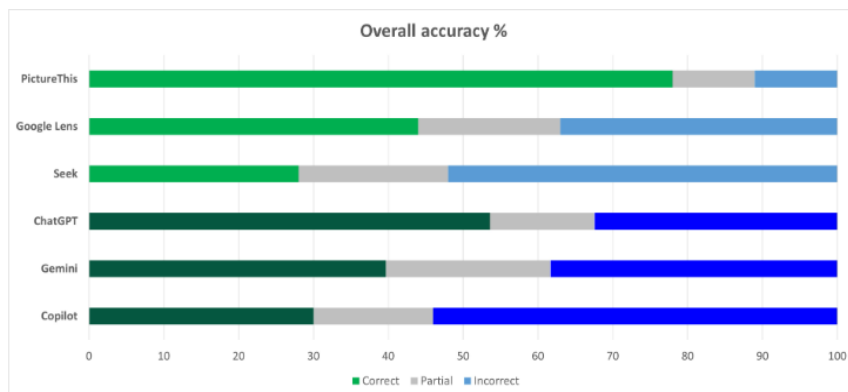


Figure 11. Overall performance of plant identification apps evaluated in fall 2025; smartphone apps on top and AI platforms on the bottom, both in order of decreasing accuracy from top down.

When focusing on seedling, vegetative and flowering grass identification, PictureThis got the correct answers 36%, 57% and 50% of the time, respectively. When it comes to grass identification, it is unclear whether partially correct answers are actually helpful. All other apps and platforms were correct 6-40% of the time. It is not surprising that these technologies struggled with grass identification, as it usually involves examining several small features (e.g., ligule, auricles, whether the leaf unfolds or unrolls as it emerges, and vegetative structures such as underground rhizomes) that cannot be captured in a single photograph. If identifying a grass is of particular importance, it would be more reliable to send multiple photos to a professional. Examples of the types of detail needed in these photos can be found in the article, “[Grass photography tips for ID: Help us help you!](#)” Even with the best photos, a physical sample may be required.

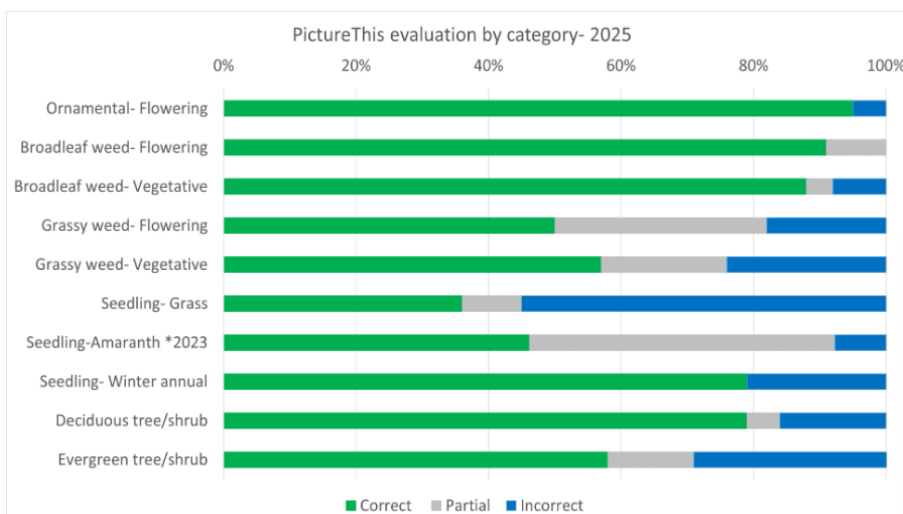


Figure 12. Performance of PictureThis in the outlined categories. Note, seedling amaranth data is displayed from 2023 due to low sample size, all other data is from 2025.

In 2025, there was an insufficient number and variety of photos taken of *Amaranthus* seedlings. Based on my experience with using it for *Amaranthus* plants, it is unreliable, even when plants are fully flowering, a much easier stage for identification. Distinguishing *Amaranthus* species is of particular importance for herbicide resistance management, so consulting other resources, like “[Keys to distinguishing Palmer amaranth from other species](#)” by Christy Sprague, PhD, remains important. Looking back at the 2023 data, *Amaranth* seedlings were correctly identified 46% of the time (Figure 12). Evergreen tree and shrub identification was another weak category for PictureThis in 2025.

Nineteen of the groups participating in 2025 provided some additional feedback, with 17 saying PictureThis was the tech option they liked the best. They commented that it was their favorite primarily because of its accuracy, but a few also mentioned its ease of use and the ability to try it out for free. One group mentioned they liked all the additional information provided with the identification. PictureThis offers a free version of the app (tested here) and a paid version. The app is quite persistent in advertising the paid version, which some students and others I have interacted with find off-putting. Those who wish to trial the app for free need to pay attention and exit screens as needed. Since including the student's data in 2021, we have seen increases in overall PictureThis accuracy of around 11%; about a 14% increase in vegetative grasses; and about a 15% increase in winter annual seedlings.

Including AI in 2025 presented some interesting instructional challenges. These platforms can read file names and any signage in the photo, so through trial and error, we had to remove these clues. Our intent was to only test their ability to use the plant's image for identification.

In 2024, Visual Lookup, the plant-identifying application integrated into iOS cameras (e.g., iPhones and iPads), was included in the test. The students did not find this competitive with other options that year (e.g., PictureThis and Google Lens), with 36% correct answers across categories.

It's always good to double check

When using various technologies to identify plants, it is always advised to check the identification with a reputable source (e.g., government or university-affiliated sites). Searching by the scientific name (Latin genus and species, e.g., *Amaranthus retroflexus*) will yield the most accurate results as common names can differ by region, environment, etc. (e.g., redroot pigweed vs. rough amaranth).

The [USDA PLANTS Database](#) is a useful tool for verifying the known distribution of an identified plant and confirming whether it is documented to occur in your area. Likewise, [Michigan Flora](#) is a good place to look, showing county level distributions based on specimens submitted to herbaria since the 1800s. Numerous herbaria have begun to digitize their collections into searchable databases with images, such as the [Consortium of Midwest Herbaria](#) and [Integrated Digitized Biocollections](#). To confirm the identification of an ornamental plant, a botanical garden resource such as the [Missouri Botanical Garden's Plant Finder](#) may be more appropriate (note the Missouri garden is in USDA Hardiness Zone 7a, Michigan ranges from 4a to 6b).

Pasture Walk in Niagara Wisconsin

By Frank Wardynski

A pasture walk is taking place Saturday, August 15 from 10am-12pm CDT at the Broullire Farm: 1281 Broullire Rd Niagara WI 54151 (there will be signs to follow as the road is not marked clearly). This is a fourth-generation farm of 171 acres, originally a dairy farm milking Jersey cows and eventually Holsteins once Todd and Kim took over. They averaged milking 30 cows until Todd and Kim Broullire sold their dairy cows between 2017 and 2018 and are currently grazing, approximately 15-20 head of Galloway.

In 2011-2012 the Broullires began working with both the Florence County Land Conservation Department and NRCS for various projects including crushed stone cattle lanes (NRCS), winter watering pads (NRCS), fencing around the barnyard (Land Conservation) and a rotational grazing fencing system in previously hayed fields (NRCS and Land Conservation), water lines for rotational grazing (Land Conservation), as well as other NRCS programs including cover crops. The rotational grazing system on the southern fields opened up a total of 66 acres for grazing and allowed resting periods for the other 29-30 acres originally established as fields for grazing.

A total of approximately 27,000 feet of fencing was installed- 15,000 feet of that was new fencing to rotationally graze the fields on the south end of the property previously used primarily for hay. In addition, approximately 8,600 feet of above ground water lines were installed to get water to cattle in all fields now used to graze rotationally. People will be able to come out and walk through the property as the farmer, NRCS, and Florence County staff explain different assistance opportunities, the installation process, the impacts, and answer any questions. Contact Frank Wardynski at 906-281-0918 or wardynsk@msu.edu for more information.



Meet our 2026 UPREC MSU Extension Interns!

By Micayla Greenberg

Peyton Wensaut

Introducing Peyton Wensaut (he/him/his), Horticulture & Research Intern at the UPREC North Farm! Peyton is originally from Swartz Creek, Michigan, and has been working at the farm for about a month. He is currently a senior in Michigan State University's Horticulture program and also takes classes at Northern Michigan University.



This summer, Peyton is participating in the “Renewing Our Relationships With Northern Flint Corn” project, a multi-year collaboration focused on reviving the Menominee Flint Corn variety while documenting its history, cultural significance, and agricultural performance. As a member of the Forest County Potawatomi Nation, contributing to agricultural work that benefits Indigenous communities is especially meaningful to him. Around the farm, Peyton’s favorite companion is Paddy, the barn cat! Outside of work, Peyton enjoys caring for his chickens and geese, reading, beadwork, weaving, hunting, fishing, and hiking. A fun fact: Peyton briefly attended culinary school!

We are proud to have Peyton’s passion for horticulture, research, and community-centered agriculture at UPREC this summer, and we look forward to supporting his research contributions to our community.

Sydney Fayton

Welcome Sydney Fayton (she/her/they), Agronomy & Crop Research Intern at the UPREC South Farm! Originally born and raised in Virginia, Sydney has since moved to North Carolina. Congratulations to Sydney on graduating this May from North Carolina Agricultural and Technical State University with an accelerated degree. She will return in the fall for a dual master’s degree in Agricultural and Environmental Systems and Business Administration.



Since joining UPREC in May, Sydney has especially enjoyed learning to assist with our hemp variety and planting date trials. This summer, she will focus on the Midwestern Hemp Research Collaborative Project while primarily working in the grain lab, gaining hands-on experience in agricultural research and crop production. Outside of the farm, Sydney enjoys working out, watching shows, and reading. Fun fact: She is a singer!

Please join us in welcoming Sydney to Michigan and the UPREC team this summer. We look forward to supporting her work with the hemp project and all that she will accomplish during her time at the farm.

Al Bussler

Say hello to Al Bussler (they/them/theirs), Horticulture & Research Intern at the UPREC North Farm! Al is originally from Michigan’s Lower Peninsula but now resides in the UP and has been working at the farm for just over a month. They are currently pursuing a bachelor’s degree in Horticulture at Michigan State University and recently earned both a Certification in Agricultural Operations from MSU and an Associate of Applied Science degree from Bay College.



This summer, they are working on the CBD Hemp Project and researching how different pruning techniques impact flower yield and quality. In addition, you can often find them working with their favorite plant, tomatoes- planting, trellising, pruning, harvesting and consuming! Outside of work, Al enjoys reading, hiking, biking, rollerblading, gaming, drawing, crocheting, and baking. A fun fact: Al mysteriously lost their right pinky knuckle in third grade! “I just woke up and it was randomly gone and I had a dull pain there. Now I have a weird looking hand when balled into a fist!”

We are excited to have Al’s passion for horticulture and the CBD Hemp Project at UPREC this summer and look forward to the impact they will make both in the field and on the farm team.

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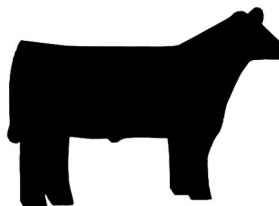
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Barn tour Hosted by Engadine Historical Society

The Engadine Historical Society will host a barn tour Sunday, August 9.

The tour will start at the Garfield Township Hall in Engadine and will visit several barns by bus. The bus will leave promptly at 2:00 p.m.

We plan to return to the hall at 5:30pm. The meal will be served at 5:45pm. The suggested donation for the meal is \$20.00 a plate, which will include a barn directory booklet and Barn Tour Button. Reserve your seat for the tour by emailing engadinehistorical@gmail.com by August 1, or send a note to Engadine Historical Society, PO Box 114, Engadine, MI 49827. We hope you will join us!