

VEGETABLE CROPS HOTLINE

A newsletter for commercial vegetable growers prepared by the Purdue University Cooperative Extension Service.

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From the Editors Desk

(Petrus Langenhoven, plangenh@purdue.edu, (765) 496-7955)

Dear Valued Vegetable Crops Hotline Readers,

Welcome to issue 777 of the Vegetable Crops Hotline newsletter! Our mission remains steadfast: to deliver crucial updates on pest management, production practices, food safety, and marketing opportunities that directly impact your farming operations.

What's Inside This Issue

Central Indiana is coming off one of the wettest stretches of the season. After a drier-than-normal July, the skies opened up in a big way: just two weeks into August, much of the state had already received more rain than a typical August sees in full, with many areas east of Indianapolis logging over 600 percent of normal precipitation for the period. Only far southern and southwestern Indiana have been spared, sitting near or below normal. (See "Soaking Rains to End the Summer, And Then Some" for the full breakdown of the numbers.)

The impact has been hard to miss. Homeowners have watched yards and basements take on water, and for farmers the stakes are also higher. Fields across the region have flooded, waterlogged soils are suffocating root systems, and disease pressure has climbed fast in the persistently wet, humid conditions, all at a point in the season when many crops should be heading toward harvest, not fighting to survive standing water. If your garden or fields were among those affected, don't skip "Food Safety After Flooding" in this issue. As the water recedes, food safety needs to move to the top of the list. Floodwater can carry E. coli, Listeria, heavy metals, and chemical runoff, and any produce that came into contact with it may not be safe to eat or sell.

On a lighter note, if you're already thinking ahead to next season,

mark your calendar for the first annual Great Lakes Tek Flex, September 10-11 at the MSU Southwest Michigan Research and Extension Center in Benton Harbor, MI. The field showcase will feature the latest in robotic weeding, drones, and precision ag technology from 18 companies representing more than 20 brands — details are inside.

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Website Links in Newsletter Articles

We frequently include links to websites or online publications. If you can't access these resources, don't hesitate to contact your local Purdue Extension office or us to request a hard copy of the information.

Midwest Vegetable Production Guide

The [2026 Midwest Vegetable Production Guide](#) is now available for growers, or you can [download and print a guide from your computer](#). The guide is also available for \$20 per copy. Contact your Extension Office or [Stephen Meyers](#) directly to purchase a copy.

Midwest Vegetable Trial Reports

Are you considering purchasing vegetable seeds? The [Midwest Vegetable Trial Report](#) features many articles to help you make an informed decision. The resource also hosts production-related research results.

Contact Us If You Have a Story to Share

Growers and Purdue Extension Educators, your input and expertise make this newsletter a truly useful resource. If you have hot topics you'd like us to cover, success stories to share, or questions for our Extension specialists, please email [Petrus Langenhoven](#) or reach out to the [specialist](#) directly. We also welcome high-quality photos of pest issues, unusual symptoms, or innovative production practices you've implemented on your farm.

As always, thank you for reading, and happy growing!

Petrus Langenhoven, Editor

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Soaking Rains to End the Summer, And Then Some

(Jacob Dolinger, jdolinge@purdue.edu)

After a drier-than-normal July, recent rains have put Indiana on notice for above-normal precipitation. Just two weeks into August, there was enough precipitation to cover the month's typical August rainfall, and then some. Much of the state received over 400 percent of normal precipitation for the first two weeks of the month, and some locations east of Indianapolis received over 600 percent of normal August rainfall. Only in far southern and southwestern Indiana was precipitation near or below normal as of August 15.

Accumulated Precipitation: Percent of 1991-2020 Normals

August 01, 2026 to August 15, 2026

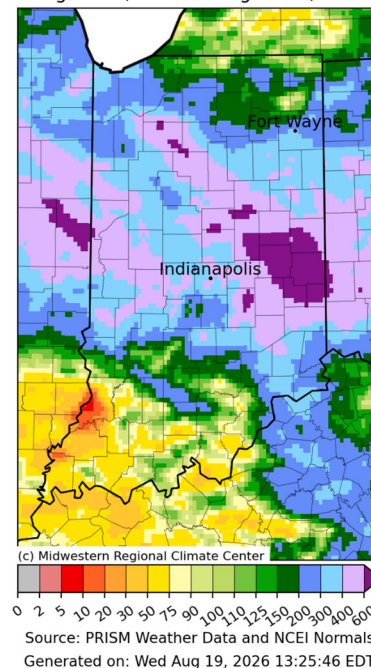


Figure 1: Percent of normal, accumulated precipitation for Indiana for August 1-15. Blues and purples indicate precipitation that is well above normal.

The heaviest impacts were felt across central and northern Indiana. Indianapolis, Crawfordsville, Lafayette, Kokomo, Richmond, Columbus, Anderson, and Muncie were among the locations affected by heavy rainfall. Indianapolis normally receives 3.2 inches during August but had already recorded 5.32 inches by August 19, making it the city's wettest August in 10 years with 13 days remaining.

Henry County was an especially notable rainfall hot spot. Several locations received more than 11 inches in less than two days. A report near New Lisbon measured 11.50 inches, while two stations near New Castle measured 11.24 and 11.23 inches. New Castle 3 SW received 7.74 inches on August 12, breaking its previous single-day record of 4.15 inches set in 1992. By August 17, the station had received 15.35 inches for the month, making August 2026 its wettest month of any month since records began in 1950. Muncie also recorded 5.99 inches on August 12, its second-highest single-day total since 1946.

Repeated rounds of rain from August 11-17 produced widespread flash flooding and pushed several rivers into major flood stage. The White River at Anderson and Noblesville surpassed record crests set in 1913, while the river at Nora reached its highest level since that historic flood. Evacuations and water rescues occurred across central Indiana, including more than 350 evacuations in Delaware County.

In Henry County, a culvert beneath Riley Road washed out, taking part of the road with it. State Road 3 became impassable in places, with waist-high water reported in New Castle. Flooding also damaged I-70 in Wayne County and destroyed a bridge on Hazel Dell Parkway in Carmel. By August 18, 19 counties had issued local emergency declarations.

Flooded and muddy fields also created problems for agriculture. Prolonged ponding can stress crops, increase erosion and nutrient loss, and raise concerns about diseases such as stalk rot in corn. Although the water has begun receding in many areas, repairs, cleanup, and agricultural impacts will continue well beyond the rainfall event.

Downy Mildew Symptoms Confirmed in Indiana

(Cesar Escalante, escalac@purdue.edu)

This article was published as a Hot Topic on August 7, 2026.

The first symptoms of cucurbit downy mildew (*Pseudoperonospora cubensis*) on cucumber plants in a commercial field were confirmed in LaGrange County, Indiana, on July 29, 2026. Now is a good time to stay alert and scout fields for symptoms related to this disease. Remember, early detection of this pathogen is key to implementing appropriate management strategies. This disease can be severe on cucurbit crops, to the point where leaves are lost, thereby reducing yield and product quality.

The causal agent of this disease does not overwinter in areas such as Indiana because it requires a living host to survive the winter. Therefore, the pathogen reaches Indiana primarily through wind dispersal from cucurbit crops in the South. Some cucurbit crops are also grown in greenhouses in the northern U.S. and Canada and serve as inoculum sources. For this reason, downy mildew may or may not show up in your area. Regardless, we should remain alert. An excellent resource for monitoring this disease is the [Cucurbit Downy Mildew Forecasting page](#).

What should you be looking for in the field?

First, I should mention that downy mildew affects all cucurbit crops, and symptoms differ slightly from crop to crop. While angular, prominent yellow lesions can be observed on pumpkin and cucumber (Figure 1), the symptoms on watermelon and melon are more diffuse (light yellow) and irregular in shape (Figure 2). Under wet conditions, gray sporulation of the pathogen can be observed on the underside of the leaves (Figure 3); this is more easily seen with a magnifying glass. Severe infections can lead to necrotic lesions and collapsed plants.



Figure 1. Downy mildew of cucumber. Note angular chlorotic/yellow lesions (Photo by: [Dan Egel](#)).



Figure 2. Light yellow and necrotic lesions of downy mildew on a watermelon leaf (Photo by: [Dan Egel](#)).



Figure 3. Downy mildew of pumpkin. Sporulation is visible on the underside of the leaf near the vein where moisture has accumulated (Photo by: [Dan Egel](#)).

Disease management practices

Crop rotation is not an effective practice for managing this disease for the reason mentioned earlier. The pathogen arrives

from other areas “to visit us.” However, keep in mind that crop rotation is still important for managing other cucurbit diseases. Apply contact fungicides as soon as the disease is detected. Some examples of contact fungicides include chlorothalonil products (Bravo®, Echo®, Equus®, Initiate®) and mancozeb (Dithane®, Manzate®, Penncozeb®). Systemic products are also effective in managing this disease. Some systemic fungicides you can use include Elumin®, Gavel 75DF®, Orondis Opti®, Orondis Ultra®, Ranman 400SC®, and Zampro®. A detailed list of fungicide products, including those mentioned here and copper-based products, is available in the Midwest Vegetable Production Guide.

Additional resources

Egel, D. 2018. [Vegetable diseases: downy mildew of cucurbits. Purdue Extension. BP-140-W.](#)

[Midwest Vegetable Production Guide. 2026.](#)

[Michigan State University Downy Mildew News](#)

Food Safety After Flooding

(Karen A. Mitchell, mitcheka@purdue.edu)

If you walked out to the garden or on the farm only to find your hard work submerged under murky water, my heart goes out to you. As a fellow gardener who has been anxiously watching the skies and the rain gauge, I know how much time and energy was poured into caring for those rows. To see plants flooded right as we are in the home stretch of the growing season is incredibly discouraging.

After the floodwaters recede, are the vegetables in your garden or on the farm still safe to eat?

Heavy rains and flooding raise many concerns for home gardeners and farmers alike, but as the waters recede, food safety must be your top priority. Floodwaters may carry human pathogens such as *E. coli* and *Listeria* from septic system overflows, as well as heavy metals, chemical runoff, and other pollutants.

What Must Be Discarded?

The most conservative, risk-free approach is to discard any fruits or vegetables directly touched by floodwaters. If the water recedes well before harvest, certain crops may still be salvaged. Immediately discard the following:

- Leafy Greens and Soft Fruits: Discard any produce that is normally eaten raw that has been touched by floodwaters, such as lettuce, spinach, or raspberries. The complex ridges, crevices, and soft tissue make them impossible to clean thoroughly.
- Plant Debris: Avoid composting plants that have been destroyed by floodwaters to prevent the spread of

pathogens or heavy metals in your landscape. These contaminants can persist in finished compost and later reintroduce pathogens or heavy metals into garden soil.

- NOTE: Flood-contaminated produce can also make animals sick. Do not use discarded fruits or vegetables that have been touched by floodwaters as animal feed or attempt to sell for that use.

What Can Be Safely Salvaged?

Depending on the crop and its maturity at the time of flooding, you may be able to safely harvest some produce for personal use. However, the U.S. Food and Drug Administration (FDA) states that if the edible portion has come in contact with floodwaters, the produce should be discarded and is not allowed for sale.

- Late Season Crops: If the plants survive, vegetables like tomatoes, peppers, eggplants, and squash that set fruit *after* the flooding are safe to consume.
- Immature Root Crops: Root vegetables such as beets, potatoes, and carrots that are at least 4 to 8 weeks from harvest at the time of flooding are safe to consume if grown to maturity.

To increase food safety, it is recommended that all vegetables be washed with clean water after harvest, peeled if possible, and cooked thoroughly. Keep in mind that while cooking destroys human pathogens like *E. coli*, it will not eliminate contamination from heavy metals or pollutants. Be extra cautious with all crops after flooding, especially if you share your harvest with young children, elderly adults, or anyone with a compromised immune system.

A Note on Personal Safety: When cleaning up flood-damaged plants and debris, wear gloves and closed-toe shoes, avoid touching your face, and wash your hands thoroughly with soap and clean water afterward. Floodwater contaminants pose a risk through skin contact, not only through what is eaten.

Additional Resources

- Safe Produce Indiana ([Website](#))
- Food Safety for Flooded Farms, Produce Safety Alliance ([PDF](#))
- Guidance for Industry: Evaluating the Safety of Flood-affected Food Crops for Human Consumption, FDA ([Website](#))
- Safety of Food and Animal Food Crops Affected by Hurricanes, Flooding, and Power Outages, FDA ([Website](#))
- Frequently Asked Questions About Handling Flooded Produce, University of Vermont Extension ([PDF](#))
- Flooded Gardens, South Dakota Cooperative Extension Service ([PDF](#))

Please reach out to any of these specialists if you have questions.

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Amanda Deering, Fresh Produce Food Safety Specialist, adeering@purdue.edu

Scott Monroe, Food Safety Extension Specialist, jmonroe@purdue.edu

First Annual TEK FLEX – September 10-12, Benton Harbor, MI

(Mark Ledebuhr, team@gltekflex.com)

PRESS RELEASE – July 22, 2026.

On September 10-11, the inaugural Great Lakes Tek Flex will be held at the Michigan State University Southwest Michigan Research and Extension Center (MSU SWMREC) in Benton Harbor, MI.

Vendor/Sponsor Update: We are excited to announce that we now have a total of sixteen (18) companies representing over twenty (20) brands to be showcased at the Great Lakes Tek Flex event.

In addition to Verdant Robotics, Carbon Robotics, Ecorobotix, LJ Technologies, Pagco Harvesters, Burro, FrucoTec, Foundation Ag, and Haggerty Robotics, we are announcing the addition of Niqo Robotics and Sabanto Autonomous Technologies.

Vegetable growers, vineyards, nursery and orchard growers throughout the Great Lakes region won't have to imagine any longer. The Tek Flex field showcase will feature the latest in weed mitigation and crop management solutions, using robotics, drones, and precision agriculture technology, over two consecutive days.

On day 1, the event will focus on connecting growers with companies that have commercialized advanced technologies through "In the dirt" demonstrations, allowing them to see technology in use. Growers can interact with company representatives to better understand how these technologies benefit their operations. A wide range of technologies will be on tap, including but not limited to "see and spray", autonomous vehicles, AI perception tools, orchard management, planting, vegetation management, harvesting, drone spray and AI decision support. Complete lists will be updated on the [TEK FLEX website](#).

On Day 2, the focus will be on removing barriers to adoption, with targeted discussions featuring governments, industry groups, and support industry participation, with the goal of identifying and aligning resources and activity to streamline the process of technology adoption.

The mission of the Great Lakes Tek Flex is to improve the sustainability and resiliency of Great Lakes Specialty Crop Growers by removing barriers to technology adoption.

This event is made possible by support and promotion from our partners and sponsors including: Michigan State University Extension, Michigan Department of Agriculture (MDARD), Michigan Vegetable Council, Michigan Grape Growers, Michigan Hort Society, Ohio State University, Ontario Ministry of Agriculture Food and Agribusiness, Cornell University, The Ontario Ag Robotics Working Group, Cornell University, Meshcomm Engineering, with many additional sponsors expected.

Quotes supporting the Great Lakes TEK FLEX

“We see technology transforming fields—making planting, monitoring, weed management and harvesting more precise and efficient. With these innovations, growers are building a smarter, more sustainable future for farming,” said Randy Stratton, Director of Great Lakes Tek Flex Expo and Field Days.

The use of robotics and AI is now part of agriculture’s future. We have moved past the curiosity phase and today agri-tech is on pace to change every aspect of farming and provide new tools for soil health and better management of our food supply.

“At the end of the day, it’s a simple equation—lower input costs, less labor, and higher yields. That’s the value this technology brings to farmers,” said Dominique Mégret, CEO of Ecorobotix.

“This event is the first of its kind in North America, right here in

the Great Lakes region. Growers and agronomists are going to find new and proven agri-tech manufacturers demonstrating their technology and connecting with potential end users of these amazing tools,” Mike Reinke, MSU Viticulture Extension Specialist and GL Tek Flex Board Member.

“We’re excited to bring SharpShooter™ to growers across the Great Lakes because it’s built to take pressure out of the season. When labor is tight and timing matters, SharpShooter uses Aim & Apply™ Technology to treat only identified targets instead of spraying empty space, so growers can reduce hand weeding, reducing the amount of materials applied while keeping crop safety first. We’re looking forward to getting into fields with growers here and proving it in real conditions.” – Curtis Garner, COO & Co-Founder, Verdant Robotics.

For more information about the Great Lakes TEK FLEX field day expo, go to the [TEK FLEX website](#).

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