

THE PURDUE LANDSCAPE REPORT

In This Issue

- [Don't miss the 2024 Purdue Turf and Landscape Field Day](#)
- [Does weed control improve with adding a contact herbicide to glyphosate?](#)
- [Warm Temperatures and Rain Continues](#)

Don't miss the 2024 Purdue Turf and Landscape Field Day

(Kyle Daniel, daniel38@purdue.edu)

The [Purdue Turf and Landscape Field Day](#) is an annual one-day event with the objective of providing professional turf and landscape managers exposure to research and educational opportunities with the latest research results and technical resources. The Field Day features research tours, talks on current topics, and a tradeshow with over 40 exhibitors displaying equipment and turf and landscape products. In addition to the educational and networking opportunities, a great lunch is included in the cost of registration.

Earn pesticide credits from the Office of the Indiana State Chemist, as well as credits from surrounding states!

Network with colleagues from around the Midwest!

There are still opportunities for exhibiting at the trade show!

To register and learn more:

<https://www.mrtf.org/event/turf-and-landscape-field-day/>

Morning tours:

LAWN TOUR	SPORTS TOUR	GOLF TOUR	LANDSCAPE TOUR
White grub management: evaluating options and tactics; Richmond	White grub management: evaluating options and tactics; Richmond	White grub management: evaluating options and tactics; Richmond	Downy Mildews of Landscape Plants; Bonkowski*
Diagnosing Common and Uncommon Turf Problems; Patton	Diagnosing Common and Uncommon Turf Problems; Patton	Diagnosing Common and Uncommon Turf Problems; Patton	Asian Jumping worm: Identification and Management; Burne*
Factors to Consider for Postemergence Crabgrass Control; McNally and Vukovic	Water vs. fungicide: Impact of post application rainfall/irrigation on fungicide performance; Miller and Carpenter	Water vs. fungicide: Impact of post application rainfall/irrigation on fungicide performance; Miller and Carpenter	New Boxwood Cultivars Evaluation and Expanding Beyond Boxwood; Daniel*
Using annual ryegrass as a nurse grass for lawn establishment: Does it work?; Bigelow	Using annual ryegrass as a nurse grass for lawn establishment: Does it work?; Bigelow	Divot Recovery on Driving Range Tees; Amgain	Pests of Boxwood and Boxwood Alternatives; Kelley*
Lawn recovery strategies after severe drought; Powlen	Lawn recovery strategies after severe drought; Powlen	Lawn recovery strategies after severe drought; Powlen	Proper Pruning Practices; McCallister*
Do Spray Drones Have a Place in Turf Management?; Whitford and Medenwald**	Do Spray Drones Have a Place in Turf Management?; Whitford and Medenwald**	Do Spray Drones Have a Place in Turf Management?; Whitford and Medenwald**	Do Spray Drones Have a Place in Turf Management?; Whitford and Medenwald**
Legislation Changes and How it Affects You; Kreider**	Legislation Changes and How it Affects You; Kreider**	Legislation Changes and How it Affects You; Kreider**	Legislation Changes and How it Affects You; Kreider**

Afternoon workshops:

Turfgrass Pathology Trials & Diagnostic Tribulations

- See the latest fungicide research and diagnose diseases in the field; Lee Miller and Matthew Carpenter

Afternoon Weed ID and Control Tour (meet at stop #7)

- Tour Purdue's latest weed control trials and learn about new herbicides and new control strategies; Aaron Patton.

Turfgrass Identification Practice: Learn to Identify 10+ Turf Species (meet under the north end of the tent)

- This walking tour will discuss the identification of 10+ turfgrass species. Great for beginners or those wanting a refresher. Brandon McNally, Jada Powlen, Vera Vukovic, and Naba Amgain.

Effectively Managing Conflict in Your Company (meet in classroom)

This workshop will be led by a Green Industry professional that has many years of experience, combined with an MBA and a MS in Turfgrass Science. Learn the most effective conflict management techniques for you to take home to your company; Chris Brown, Teed and Brown.

Harvesting Profit: Maximizing Revenue with Raised Garden Beds in Landscapes

- This hands-on workshop will cover the design and construction of raised garden beds for integration into your landscape installs. Learn from an expert, Nathan Shoaf, to incorporate this increasingly popular backyard element to maximize your services and profits.

Does weed control improve with adding a contact herbicide to glyphosate?

(Kyle Daniel, daniel38@purdue.edu)

A recent conversation with a landscaper about tank mixing led to a brief discussion about glyphosate products with a contact herbicide included. I thought I would share my thoughts on the addition of weed contact herbicides and its effectiveness on weed control.

We all know that we live in a microwave society. Most people want things immediately. I recall a comedian's joke several years ago about a baked potato taking so long to cook that he put one in the oven in the morning before work, just in case he wants one for dinner. The immediacy of our society has even evolved into herbicides.

Herbicidal properties determine how long after a herbicide is applied until symptoms are observed. Contact herbicides typically show symptoms relatively fast, sometimes in a couple of hours. Systemic herbicides typically take longer to show symptoms due to their mode of action and sites of action.

Glyphosate is a non-selective, systemic herbicide, meaning it kills most weeds and is translocated throughout the plant via the (primarily) phloem. Glyphosate's site of action is located in the shikimic acid pathway, which leads to many secondary metabolites, such as lignin and tannin. Since glyphosate works on the secondary metabolism (aka non-photosynthesis/making of carbohydrates), symptoms won't be evident until 8-10 days after treatment. Since it's one of the slower acting herbicides, some companies began to add a contact herbicide to increase herbicide phytotoxicity quicker than stand-alone glyphosate.



Figure 1. Glyphosate damage to sycamore after five days.

This leaves us in a kind of quandary. For systemic herbicides to be most effective, the weeds need to be actively growing. The more active the growth, the more translocation of the herbicide occurs.

Adding a contact herbicide to glyphosate will injure the weed before much of the translocation occurs with the systemic nature of glyphosate. In a 2008 study, it was found that glyphosate-based, ready-to-use products with diquat, weeds showed symptoms soon after application, but long-term weed control efficacy with glyphosate alone was improved over time. The diquat reduced the translocation of the glyphosate, thus didn't work as effectively as compared to glyphosate alone. The study also indicated that an increase of 60% of glyphosate would be needed to counteract the antagonistic effect of the diquat (Wehtje, et.al. 2008).

In some situations, a glyphosate product with a contact herbicide included will be needed if a quick burndown is the goal. In most cases, omitting the contact herbicide will increase the efficacy of the product and result in more effective weed control.

References:

Wehtje, G., Atland, J.E., and Gilliam, C.H. 2008. Interaction of Glyphosate and Diquat in Ready-to-Use Weed Control Products. *Weed Technology*. Volume 22. Issue 3. Pp.472-476.

Warm Temperatures and Rain Continues

(Austin Pearson, pearsona@purdue.edu)

Allergy season is in full swing. At least, it is for me. Runny nose, itchy eyes, and consistent drainage that I have to clear in the shower every morning. We love spring, right?? That's enough complaining for now. Indiana's April 2024 average temperature was 55.1°F (3°F above normal), which was good enough for 14th

warmest on record since 1895. April ended with the 5th most precipitation on record for Aprils dating back to 1895 with 6.63 inches of precipitation. This was 2.24 inches above normal or 151 percent of normal. The wettest Indiana April on record occurred in 2011 when the state observed 9.61 inches of precipitation. This April's rain helped chew away at precipitation deficits, but led to limited planting windows across the state.

Shifting attention to the last 30 days (April 16-May 14), temperatures have run 2-6°F above the 1991-2020 climatological normal. In fact, Indiana's statewide average temperature was 61.1°F, 4.4°F above normal for this period (Figure 1). The Evansville Regional Airport observed the highest average temperature in the state (66.4°F), which was 4.3°F above normal for the period. As a result of the above-normal temperatures, growing degree days (GDDs) continued to run ahead of schedule (Figure 2). Statewide, GDDs have accumulated between 240 and 640 units, which was 50 to 150 GDDs above normal.

Climate Division Data by State between Two Dates
From Midwestern Regional Climate Center

Indiana 4/16/2024 to 5/14/2024									
cd	Temperature			Precipitation			percent		
	temp	norm	dev	prcp	norm	dev	norm	dev	percent
1	58.4	55.1	3.3	4.76	3.35	1.42	142		
2	58.2	54.6	3.6	4.35	3.16	1.19	137		
3	57.9	54.2	3.8	4.32	2.98	1.34	145		
4	61.0	56.9	4.1	3.81	3.78	0.03	101		
5	60.8	56.2	4.6	3.29	3.79	-0.50	87		
6	60.3	55.3	5.0	2.84	3.60	-0.76	79		
7	64.9	59.7	5.2	5.18	4.62	0.55	112		
8	64.4	59.0	5.4	4.70	4.53	0.17	104		
9	62.9	58.0	4.9	4.32	4.25	0.07	102		
State	61.1	56.6	4.4	4.20	3.81	0.39	110		

Midwestern Regional Climate Center
MRCC Applied Climate System
Generated at:
Wed May 15 10:46:24 EDT 2024



Figure 1: Temperature and precipitation data for April 16 to May 14, 2024 for Indiana and representative climate divisions (cd). Temperatures are represented as average mean temperature (temp), 1991-2020 normal mean temperature, and mean temperature deviation from normal (dev). Precipitation is represented as the average observed total, 1991-2020 normal precipitation, precipitation deviation from normal, and precipitation represented as the percent of the 1991-2020 climatological normal.

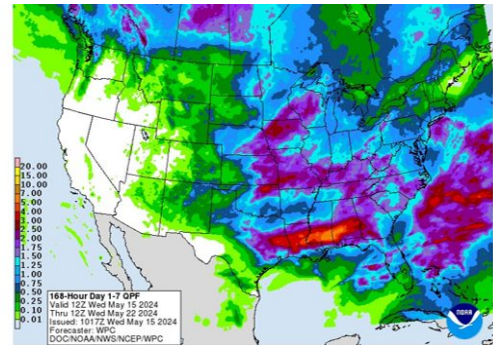


Figure 3: Weather Prediction Center's Day 1-7 Quantitative Precipitation Forecast valid from May 15 to May 22, 2024.

Precipitation totals over this period ranged from 1.82 inches in New Castle (Henry County) to 10.18 inches at the Evansville Regional Airport (Vanderburgh County). From April 16 to May 14, the Evansville Regional Airport recorded at least a trace of precipitation on 16 days and averaged roughly 0.35 inches per day. The April 14th precipitation observation yielded 3.42" of rain.

Despite the limited planting windows, corn and soybeans planted progress tracked with the five-year average. As of April 12, 36 percent of corn and 34 percent of soybeans have been planted. Today's equipment and technology allows farmers to plant crops faster than ever!

Through May 22, the heaviest rain totals (up to 2.5") are expected in southern Indiana, whereas northern Indiana could see up to an inch of rain (Figure 3). The Climate Prediction Center expects above-normal temperatures and precipitation from May 20-24, with near-normal temperatures returning toward the end of the month. Elevated chances of above-normal temperatures continue through the end of the month.

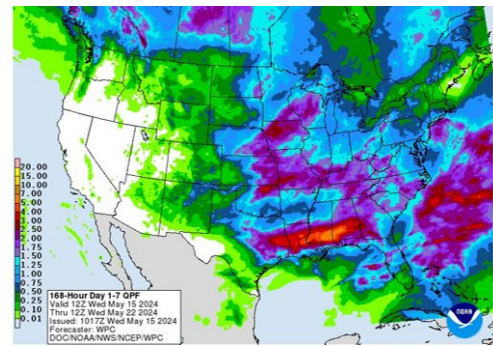


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Editor: Kyle Daniel | Department of Horticulture and Landscape Architecture, 625 Agriculture Mall Dr., West Lafayette, IN 47907