Extending large patch control with combination fungicides

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Introduction

Large patch (*Rhizoctonia solani* AG 2-2 LP) is one of the most problematic diseases on warm-season turfgrasses in Arkansas (**Figure 1**). Large patch can damage bermudagrass, centipedegrass, St. Augustinegrass, and zoysiagrass. In Arkansas, the disease is particularly damaging to zoysiagrass lawns, sod farms, and golf course fairways/tees. Large patch thrives during the fall and spring months, especially when there is substantial rainfall, cloud cover, and mild temperatures.



Figure 1. *Large patch symptoms on a zoysiagrass leaf blade (a) and zoysiagrass stand (b).*

One of the most effective strategies for managing large patch is fungicide application. For complete control of the disease, 2 to 3 applications of an effective fungicide during the fall at 21-

to 28-day intervals and 1 to 2 fungicide applications during the spring at the same interval may be required (**Figure 2**). However, most facilities such as golf courses are only able to treat a maximum of twice in the fall and once in the spring due to time, labor, and financial limitations. Therefore, fungicides that offer extended control of large patch beyond 28 days are in demand.

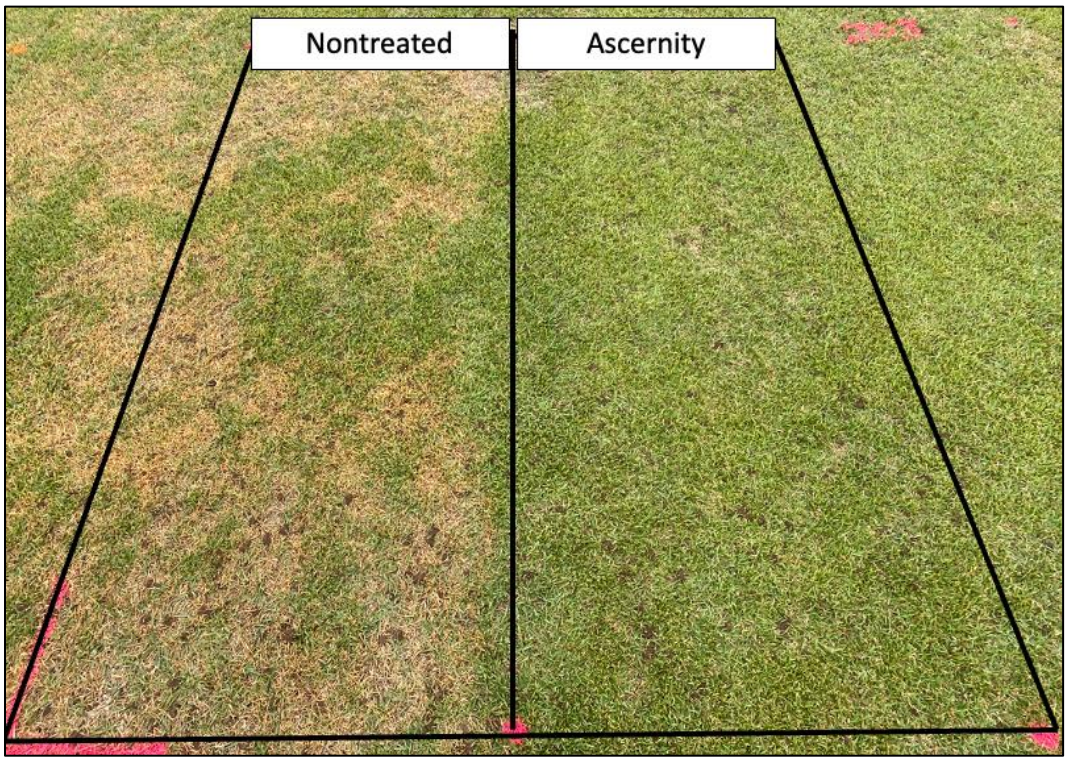


Figure 2. *Large patch control on zoysiagrass with the efficacious fungicide Ascernity.*

A study was conducted on 'El Toro' zoysiagrass mown at 0.5" from 27 Sep 2025 to 05 Jun 2026 in Fayetteville, AR to test the effects of various fungicide treatments on large patch suppression during the fall and spring. There were seven total treatments (Table 1), and plots were visually assessed throughout the fall and spring months for % large patch and turf quality on a 1-9 scale (1 = dead turfgrass; 6 = acceptable; 9 = excellent). Ascernity and Pillar SC are currently labeled for use on certain turfgrass sites, but Mural is not.

Table 1. *List of treatments for large patch fungicide trial conducted in Fayetteville, AR from fall 2025 through spring 2026.*

Treatment #	Product Name	Active Ingredients	App Rate	App Interval*
1	Nontreated	N/A	N/A	N/A
2	Ascernity	benzovindiflupyr + difenoconazole	1 fl.oz./1,000 ft^2	28-days
3	Mural	benzovindiflupyr + azoxystrobin	0.16 fl.oz./1,000 ft^2	28-days
4	Pillar SC	triticonazole + pyraclostrobin	1 fl.oz./1,000 ft^2	28-days
5	Ascernity	benzovindiflupyr + difenoconazole	1 fl.oz./1,000 ft^2	42-days
6	Mural	benzovindiflupyr + azoxystrobin	0.16 fl.oz./1,000 ft^2	42-days
7	Pillar SC	triticonazole + pyraclostrobin	1 fl.oz./1,000 ft^2	42-days

All fungicides were applied twice during the fall and once during the spring.

Research Findings

All fungicide treatments, regardless of product or application interval, effectively suppressed large patch and substantially improved turf quality (**Figures 3 and 4**). More interestingly, there were no statistical differences between any of the products applied at 28-day or 42-day intervals. This suggests that fungicide application intervals may be extended with the combination fungicides tested in this trial. Another finding of note was that the first application was made on 27 Sep 2025, after large patch was already active. This made the initial applications curative rather than preventive. Curative applications are not recommended, but the large patch epidemic started earlier than normal due to an abnormally wet September in Fayetteville, so initial applications were late going out. With that said, this trial highlighted the exceptional curative efficacy of the tested combination fungicides on large patch (**Figure 5**).

Single-active ingredient fungicides can be effective on large patch, but combination products of two or more active ingredients belonging to different fungicide groups is typically more potent and recommended. Additionally, this trial demonstrated that combination fungicides can provide excellent large patch control, even at 42-day application intervals, which could result in 1-2 fewer fungicide applications per year for large patch management. Turfgrass managers should consider applying combination fungicides for large patch and other turfgrass diseases for increased efficacy, extended longevity, and fungicide resistance management. I hope this article was helpful, and please do not hesitate to contact me at wendellh@uark.edu for any follow-up questions about this research!

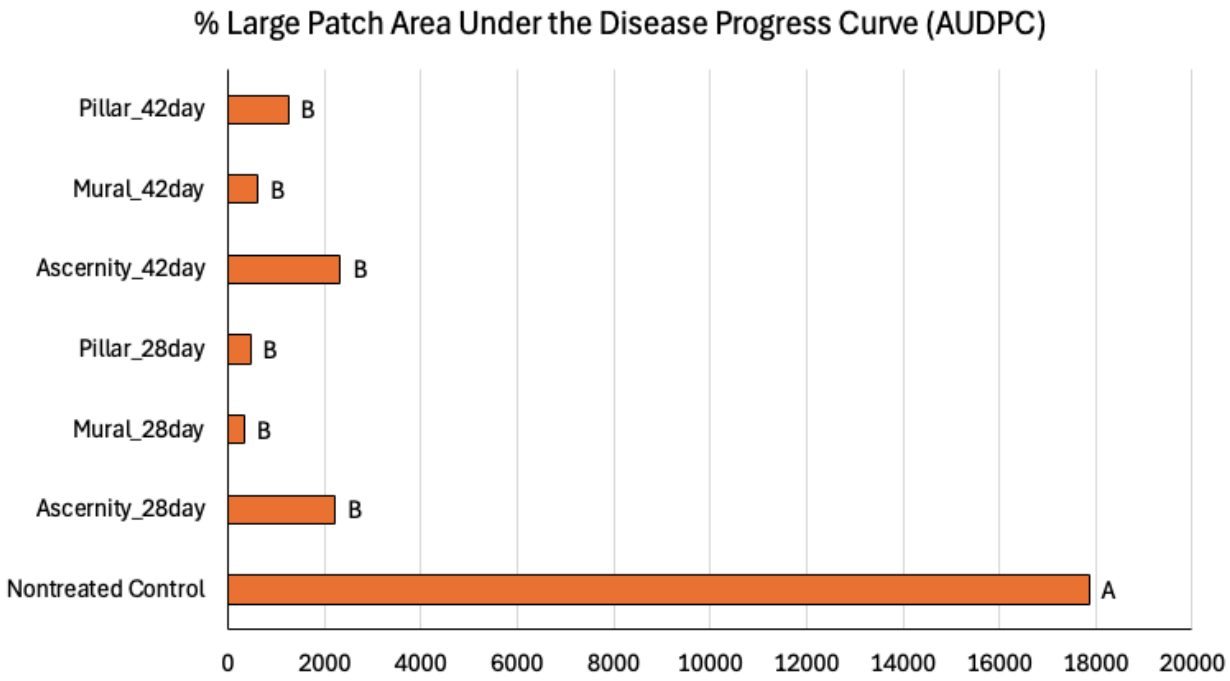


Figure 3. *Influence of various fungicide treatments on % large patch area under the disease progress curve (AUDPC) on 'El Toro' zoysiagrass.*

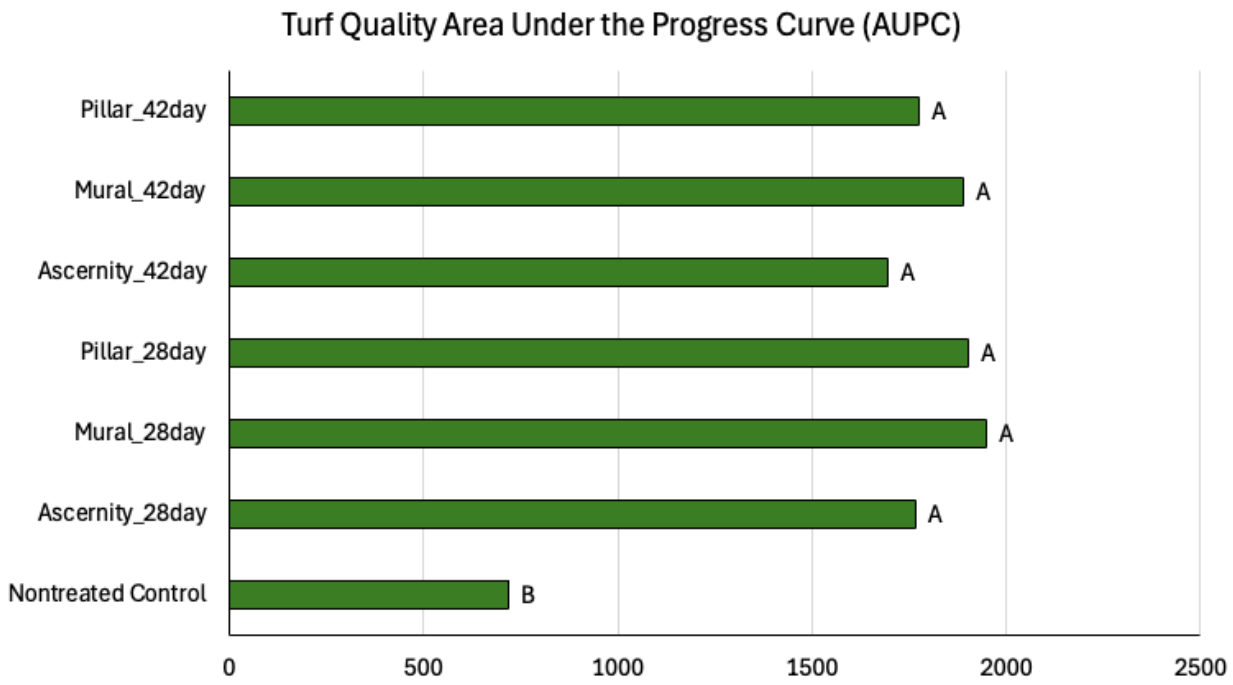


Figure 4. *Influence of various fungicide treatments on turf quality area under the progress curve (AUPC) on 'El Toro' zoysiagrass.*

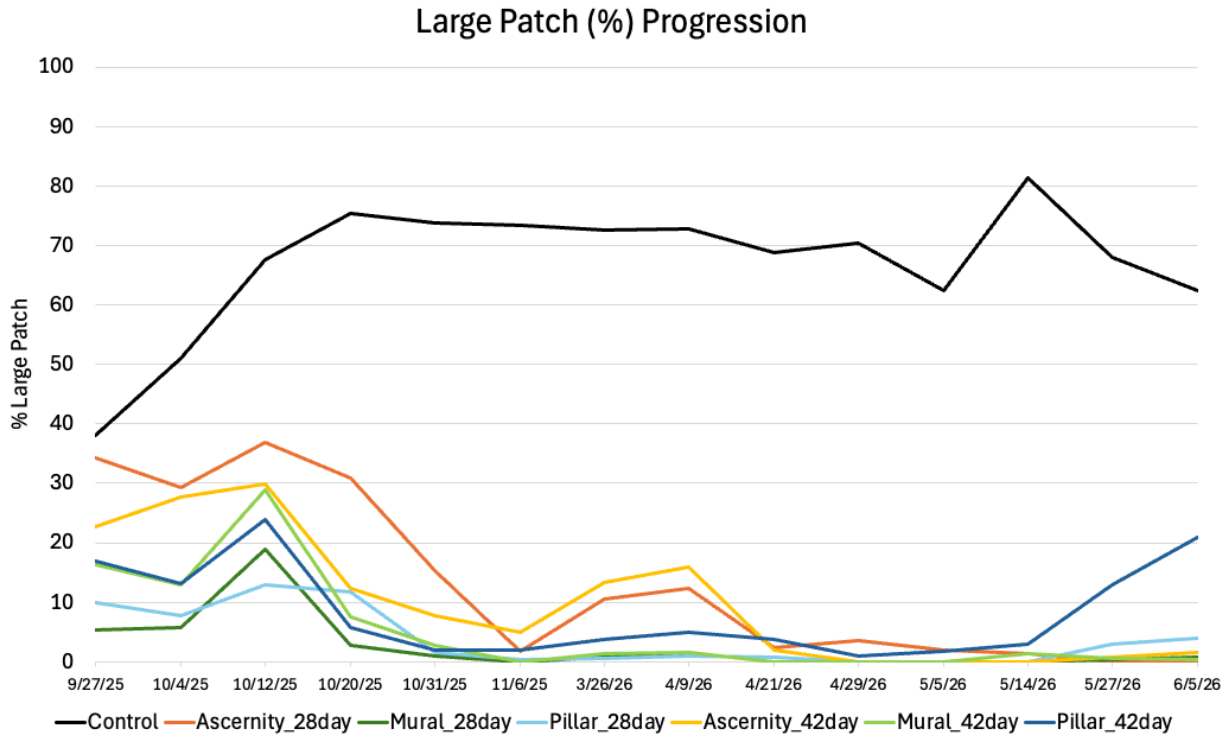


Figure 5. *Large patch progression throughout the trial period.*