

Effect of season-long fungicide programs on survival of *Poa trivialis*: 2007
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Objective:

Determine the effect of aggressive fungicide use on performance of *Poa trivialis* and indirectly determine if disease plays a role in the summer dormancy or death of *Poa trivialis* at fairway height.

Rationale:

Poa trivialis or Rough bluegrass has become a major weed problem on golf courses, athletic fields and home lawns. Even though we have two promising selective herbicides for *Poa trivialis* control in Certainty and Velocity, we need a better understanding of the weed's biology to make these herbicides most effective. Additionally, attempting control of this weed is not always practical, so refining management strategies for optimal performance is necessary.

Materials and Methods:

This study was conducted at the W.H. Daniel Turfgrass Research and Diagnostic Center in West Lafayette, IN. Plot area was a one-year-old stand of Laser and 'Sabre II' *Poa trivialis* seeded into large main plots. The area was maintained like a typical fairway consisting of 0.5" mowing height, regular irrigation, and 2.5 lbs N/1000 ft²/year. Fungicide treatments began in May and were applied every two weeks and included:

| | Fungicide | oz/1000ft ² | Applications |
|-----|-----------------|------------------------|--|
| 1. | Heritage 50 WDG | 0.4 | 2 nd and 4 th week May-Sep |
| 2. | Heritage 50 WDG | 0.4 | 2 nd and 4 th week July-Sep |
| 3. | Prostar 70WP | 2.2 | 2 nd and 4 th week May-Sep |
| 4. | Subdue Maxx L | 1.0 | 2 nd and 4 th week May-Sep, weekly in July-Aug |
| 5. | Prostar 70WP | 2.2 | 2 nd and 4 th week May-Sep |
| | Subdue Maxx L | 1.0 | 2 nd and 4 th week May-Sep, weekly in July-Aug |
| 6. | Prostar 70WP | 2.2 | 2 nd and 4 th week May-Sep |
| | Subdue Maxx L | 1.0 | 2 nd and 4 th week May-Sep, weekly in July-Aug |
| 7. | Prostar 70WP | 2.2 | 2 nd and 4 th week May-Sep |
| | Heritage 50 WDG | 1.0 | 2 nd and 4 th week May-Sep |
| 8. | Heritage 50 WDG | 0.4 | 2 nd and 4 th week May-Sep |
| | Subdue Maxx L | 1.0 | 2 nd and 4 th week May-Sep, weekly in July-Aug |
| 9. | Prostar 70WP | 2.2 | 2 nd and 4 th week May-Sep |
| | Heritage 50 WDG | 0.4 | 2 nd and 4 th week May-Sep |
| | Subdue Maxx L | 1.0 | 2 nd and 4 th week May-Sep, weekly in July-Aug |
| 10. | Control | 0 | None |

Emerald was used to control dollar spot as needed on 18 June, 3 July, 20 July, and 2 Aug. Heritage is labeled for a wide variety of diseases including brown patch and summer patch, Prostar is labeled for brown patch, and Subdue is labeled for pythium.

Experimental design was a split plot with cultivars as main plots, fungicide schedules as subplots and three replications of main plots were used. Quality and percent cover was rated visually every other week.

What we learned:

- The *Poa trivialis* thinning was not as pronounced as in 2006 and there was almost no difference in *Poa trivialis* cover due to fungicide treatments regardless of cultivar (Table 1).
- In terms of turf quality, any treatment that included Heritage outperformed the untreated *Poa trivialis* or those treatments not including Heritage (Figure 1)
- Treatments with Heritage applied in May and June outperformed the others (Figure 2)
- Fungicide programs used in this study are not commercially viable and also above label recommendations in some cases. However, this research does show that the decline of *Poa trivialis* may be in part mediated by early summer diseases.
- This study will be refined in 2008 to further pinpoint which disease(s) play a role in *Poa trivialis* decline. This study is part of a larger project examining the biology and control of *Poa trivialis*.

Table 1. ANOVA for turf quality and percent cover of two cultivars of *Poa trivialis* as affected by seasonal fungicide programs.

| Variable | Turf quality | | | | | | | | | | % cover | | |
|----------------------|-----------------|-----------|------------|------------|------------|------------|----------|-----------|-----------|------------|-----------|-----------|------------|
| | 16 May | 29 May | 13 June | 27 June | 12 July | 25 July | 2 Aug | 15 Aug | 5 Sept | 28 Sept | 23 Aug | 5 Sept | 28 Sept |
| Cultivar | NS ^a | NS | * | * | * | * | * | * | * | * | * | * | NS |
| Fungicide | NS | NS | * | * | * | * | * | * | * | NS | NS | NS | NS |
| Cultivar X Fungicide | NS | NS | * | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

^a NS = not significant, * = significant at the p=0.05 level.

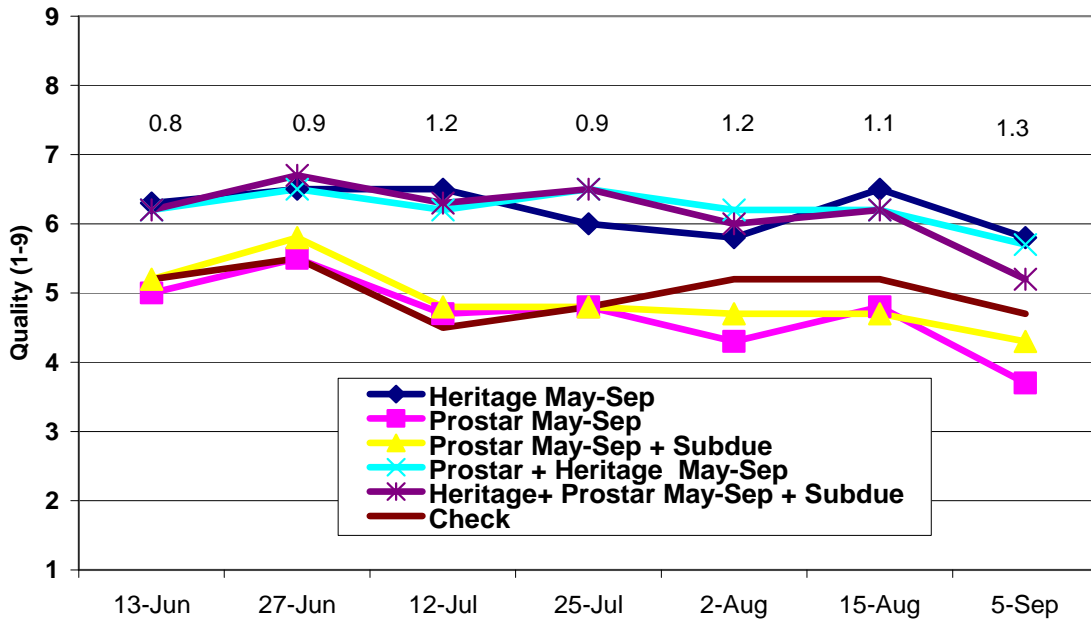


Figure 1. Effect of fungicide applications made every other week from May through September on fairway height *Poa trivialis*. Any treatment that included Heritage outperformed the untreated *Poa trivialis* or those treatments not including Heritage. Numbers above the lines are LSD (0.05).

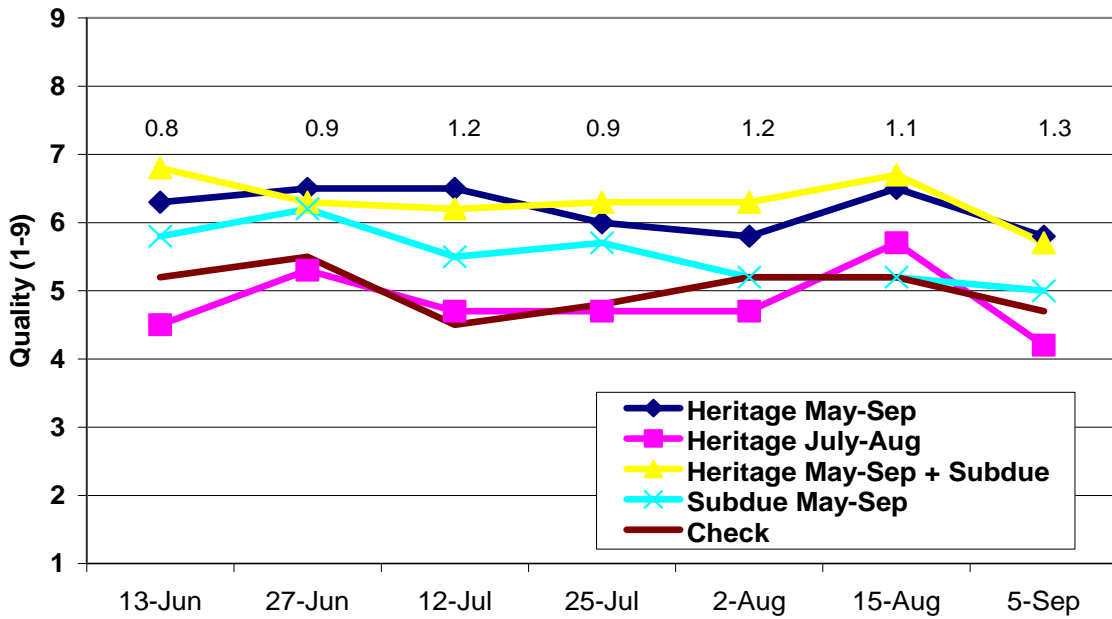


Figure 2. Effect of fungicide applications made every other week from May through September on fairway height *Poa trivialis*. Treatments with Heritage applied in May and June outperformed the others. Numbers above the lines are LSD (0.05).