

## **Herbicide Safety on Zoysia Seedlings -2002**

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### **Objective**

The objective of this research was to evaluate the safety of various herbicides for weed control in newly-seeded zoysiagrass.

### **Rationale**

With the introduction of improved varieties of seeded zoysiagrass, questions arise concerning best establishment practices. Previous studies at Purdue have established optimum seeding rates and windows. Since zoysiagrass is slow to establish and is germinating at the same time as very competitive annual grasses, it is important to evaluate herbicides that can control the annual grasses and improve the establishment of the seeded zoysiagrass.

### **How It Was Done**

The experiment was initiated in 2002 at the W.H. Daniel Turfgrass Research and Diagnostic Center, West Lafayette, IN. The experimental area was tilled and fumigated prior to establishment to minimize competition from annual grasses and broadleaf weeds so that effects could be determined for the Zoysiagrass seedlings only. The area was then smoothed and leveled to prepare the seedbed. 'Zenith' zoysiagrass was seeded at 1.0 lbs PLS/1000 ft<sup>2</sup> on 20 June and emerged on 11 July. Areas were covered with an AgroFabric germination blanket to prevent seed movement. The experimental area was irrigated as needed to encourage germination and establishment, and mowed at 0.5 inches with a reel-type mower as needed with clippings collected. Experimental design was a randomized complete block design with three replications and 5 ft X 5 ft plots. Treatments included an untreated check and four herbicides (Kerb WSP at 2.0 lbs/A, Target 6.6E [MSMA] at 40 fl oz/A, Acclaim Extra at 28 fl oz/A and Fusilade II at 4 fl oz/A) applied at 0, 7, 14, 21 and 28 days after emergence (DAE). Applications were made in the equivalent of 2 gals H<sub>2</sub>O/1000 ft<sup>2</sup> at 35 PSI with flat fan nozzles. Data was collected weekly as percent cover in 2002 and the entire study will be repeated in 2003.

### **Results**

Kerb and MSMA had no negative effects on zoysiagrass seedlings at any time during establishment regardless of application timing (Figure 1). Acclaim and Fusilade reduced cover as compared to the check following applications at 0 and 7 DAE (Figures 2 and 3). However, seedlings were able to recover from Fusilade applications and showed no noticeable difference in cover within 2-3 weeks after application. In contrast, when data was collected just before dormancy on 19 September, Acclaim treatments applied at 0 and 7 DAE still showed a reduction in cover.

While it is difficult to make definite recommendations after a single year of study, it appears Kerb and MSMA are very safe on newly seeded 'Zenith' zoysia. Acclaim and Fusilade have the potential for use in seeded zoysiagrass, but their use should be delayed until at least 14 DAE.

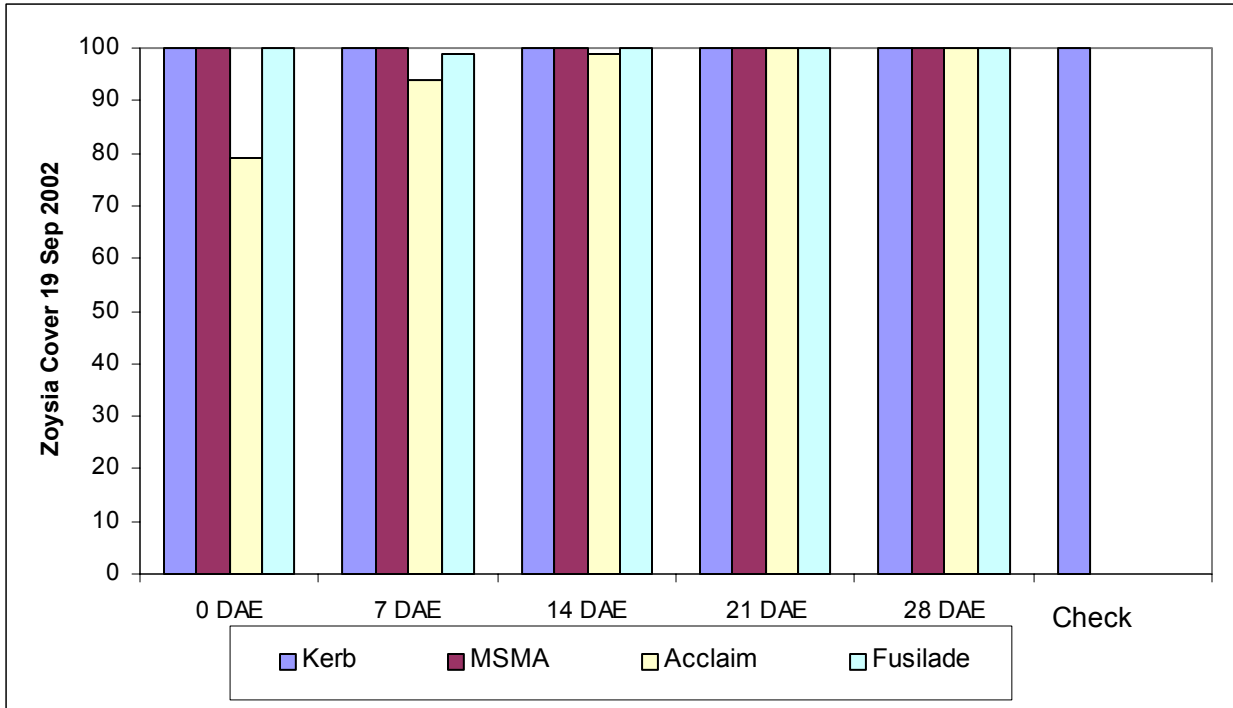


Figure 1. Effect of four herbicides on ‘Zenith’ zoysiagrass when applied 0 to 28 days after emergence.

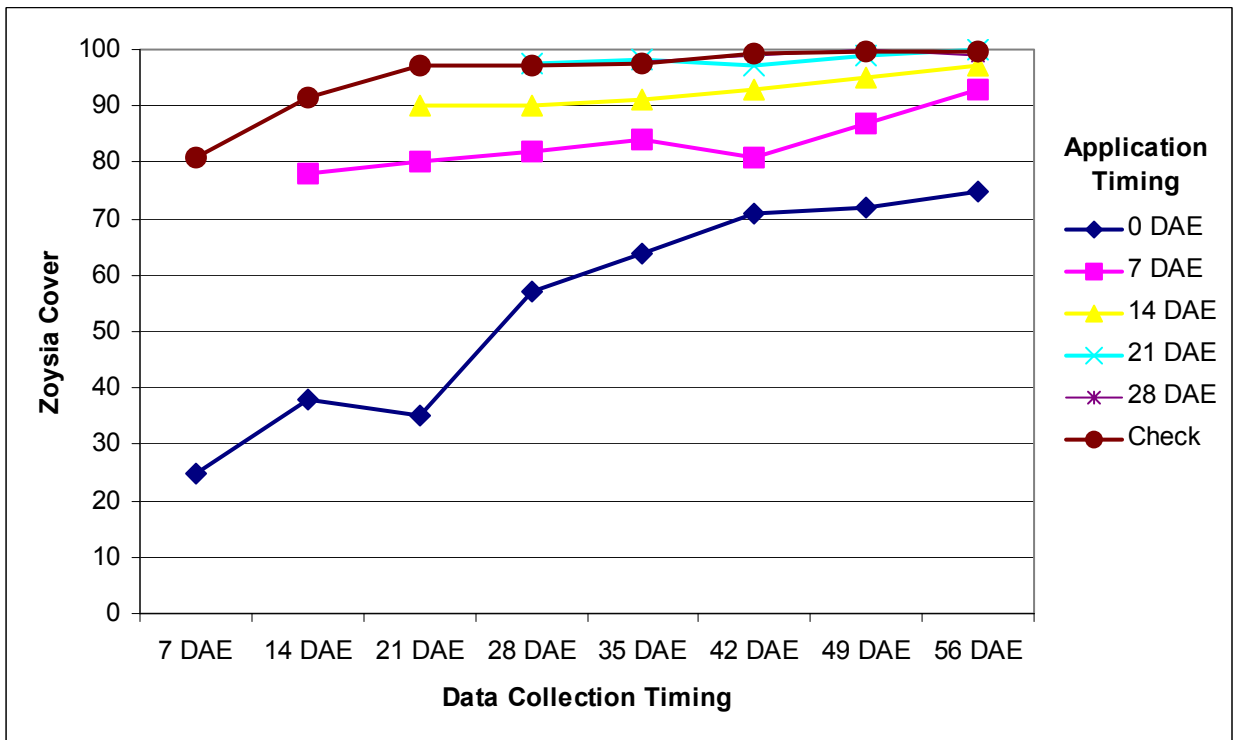
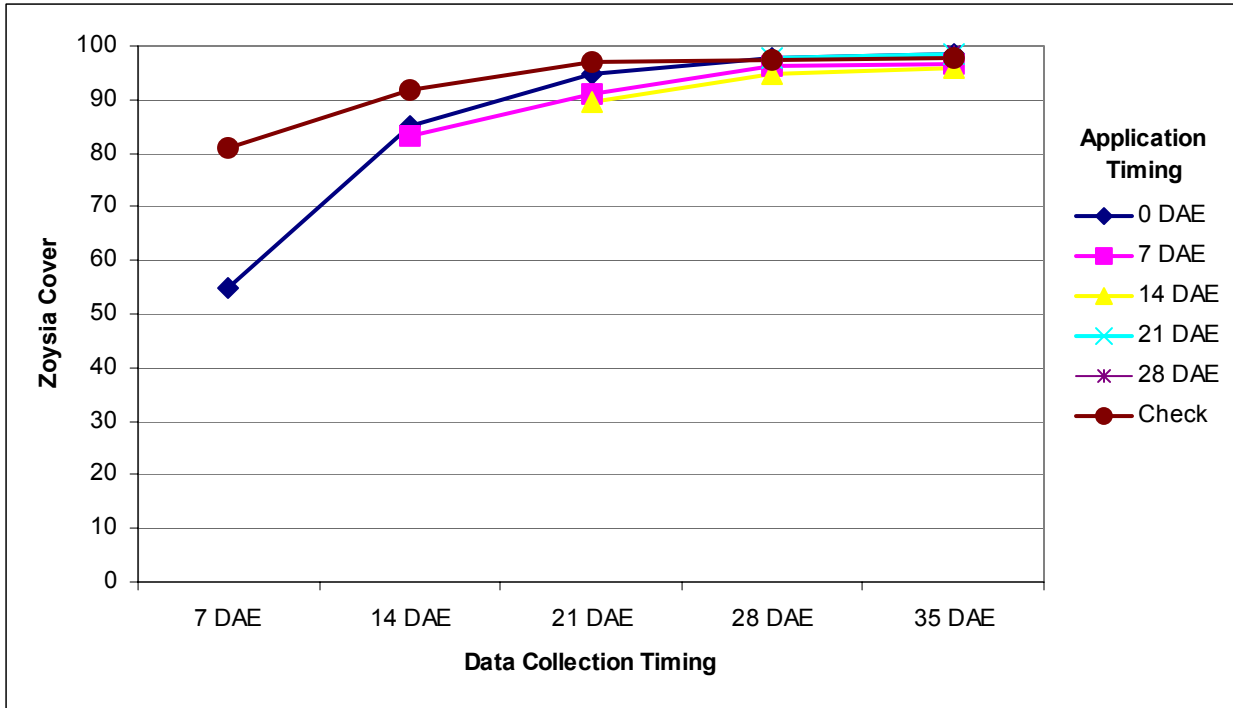


Figure 2. Effects of Acclaim Extra on ‘Zenith’ zoysiagrass when applied 0 to 28 days after emergence.



**Figure 3.** Effects of Fusilade II on 'Zenith' zoysiagrass when applied 0 to 28 days after emergence