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## Use of Pyrimisulfan and Penoxsulam in Turfgrass Systems

### Abstract

Pyrimisulfan + penoxsulam applications in 'Meyer' zoysiagrass and buffalograss resulted in excellent large crabgrass control and no turfgrass injury. Applications also do not have any negative influence on tested ornamental species.

### Keywords

Pyrimisulfan, penoxsulam

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# TURFGRASS RESEARCH 2017



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## Use of Pyrimisulfan and Penoxsulam in Turfgrass Systems

*Jared A. Hoyle*

**Summary.** Pyrimisulfan + penoxsulam applications in ‘Meyer’ zoysiagrass and buffalograss resulted in excellent large crabgrass control and no turfgrass injury. Applications also do not have any negative influence on tested ornamental species.

**Rationale.** Pyrimisulfan and penoxsulam are two new acetolactate synthase (ALS) inhibiting herbicides used for weed control in turfgrass systems.

**Objectives.** The objectives of these studies were to determine weed control efficacy of pyrimisulfan and penoxsulam, as well as the non-target ornamental damage.

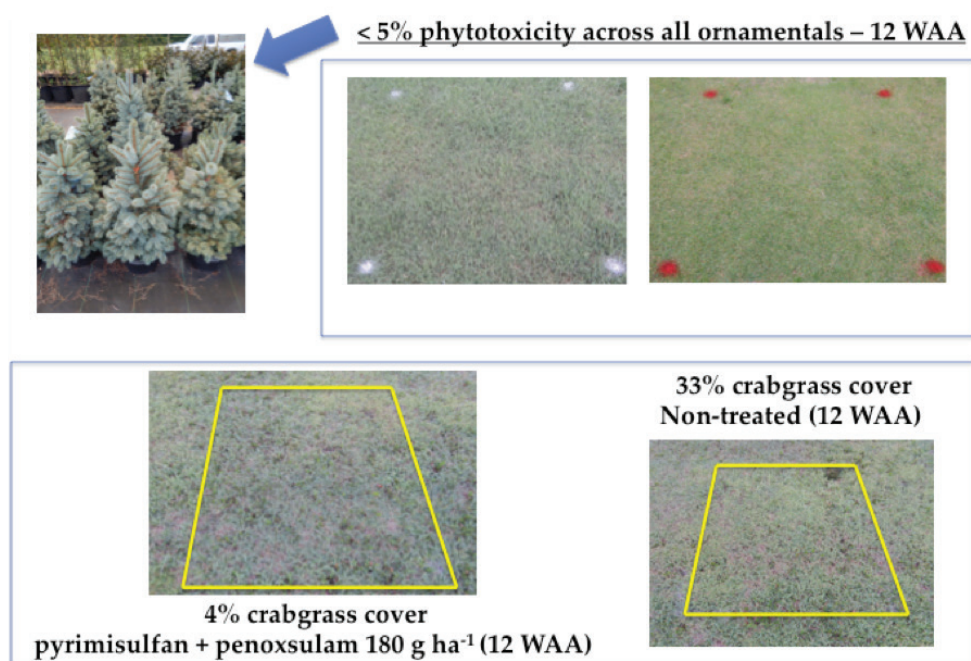
**Study Description.** Research trials in 2014 through 2016 in Kansas were conducted to further explore pyrimisulfan and penoxsulam use in turfgrass systems and safety to non-target landscape vegetation. Research trials were initiated in Junction City, KS, on September 14, 2014, to evaluate post-emergent yellow nutsedge (*Cyperus esculentus*) and spotted surge (*Euphorbia maculata*) control with pyrimisulfan and penoxsulam combinations. In May 2016, research trials in Manhattan, KS, were initiated to determine pre-emergent large crabgrass (*Digitaria sanguinalis*) control with pyrimisulfan and penoxsulam. Pre-emergent treatments included pyrimisulfan (0.64 oz/a), pyrimisulfan (1.28 oz/a), pyrimisulfan [0.64 oz/a followed by (fb) 0.64 oz/a 60 days after initial treatment (DAIT)], pyrimisulfan + penoxsulam (1.28 oz/a), pyrimisulfan + penoxsulam (2.5 oz/a), and pyrimisulfan + penoxsulam (1.28 oz/a fb 1.28 oz/a 60 DAIT). Additional pyrimisulfan + penoxsulam treatments were applied at same rate on a nitrogen fertilizer carrier. ‘Cody’ buffalograss (*Bouteloua dactyloides*), and ‘Meyer’ zoysiagrass (*Zoysia japonica*) tolerance studies were initiated on May 5, 2016, in Manhattan, KS, to evaluate tolerance during spring transition with pyrimisulfan and penoxsulam applications. Treatments included pyrimisulfan

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and penoxsulam applied at 1, 1.5, and 2 oz/a and pyrimisulfan + penoxsulam at 1, 2, 3, and 4 oz/a. In 2015 and 2016 research trials were conducted to determine ornamental species' tolerance to turfgrass pyrimisulfan and penoxsulam applications. All treatments within each trial included a non-treated control and were arranged in a randomized complete block with 3 or 4 replications. Analysis of variance (ANOVA) was performed in SAS 9.4 (SAS Institute Inc., Cary, NC) and means were separated according to Fisher's protected least significant difference (LSD) at 0.05 significance level.

**Results.** Pyrimisulfan + penoxsulam at 2.5 oz/a resulted in excellent pre-emergent large crabgrass control 90 DAIT. No buffalograss, zoysiagrass, or ornamental injury was observed throughout tolerance studies.



**Figure 1. Summary of pyrimisulfan + penoxsulam applications; 'Meyer' zoysiagrass and buffalograss tolerance, crabgrass control, and non-target ornamental injury.**

WAA = weeks after application.

