

Preemergence Control of Smooth Crabgrass

J. A. Borger, M. B. Naedel, M. T. Elmore¹

Introduction

Preemergence control of smooth crabgrass (*Digitaria ischaemum*) was evaluated on a mature stand of 'Midnight' Kentucky bluegrass (*Poa pratensis*, L.) at the Valentine Turfgrass Research Center, Penn State University, University Park, PA. The objective of the study was to determine the efficacy of selected preemergence herbicides for the control of smooth crabgrass and safety to desired species.

Methods and Materials

This study was a randomized complete block design with three replications. Treatments were applied on April 24, 2008 (PRE) and June 17, 2008 (8 WAT) using a three foot CO₂ powered boom sprayer calibrated to deliver 80 gpa using one, flat fan, 11008E nozzle at 40 psi. After the applications the entire test site received approximately 0.5 inch of water. On May 10, 2008 0.5 lb N/M was applied from urea and 0.5 lb N/M from a 31-0-0 IBDU fertilizer was applied to the entire test area. The site was mowed once per week with a rotary mower at one inch with clippings returned to the site.

The test site was overseeded with a native source of smooth crabgrass seed in the fall of at least two of the previous growing seasons. The test site had approximately 90% cover of smooth crabgrass in the non treated areas at the conclusion of the study.

Smooth crabgrass germination was first noted in the non treated areas of the test site on April 29, 2008.

Results and Discussion

Turfgrass phytotoxicity was rated twice (Table 1). No phytotoxicity was observed during the study.

The control of smooth crabgrass was rated on August 20, 2008. No treated turfgrass provided commercially acceptable control (85% or greater). It should be noted that the addition of Tenacity to the split application of Barricade at 0.38 la ai/A did reveal a trend of greater control.

¹ Instructor, Research Technician II, and Turfgrass student, Respectively, Department of Crop and Soil Sciences, Penn State University, University Park, Pa, 16802

Table 1. Evaluations of turfgrass phytotoxicity where 0 = worst, 7 = acceptable, and 10 = no phytotoxicity, taken in 2008.

Treatment	Form	Rate lb ai/A	Timing	(-----Phytotoxicity-----)	
				5/5	6/27
BARRICADE	4FL	0.75	PRE	10.0	10.0
CHECK				10.0	10.0
BARRICADE	4FL	0.38	PRE/8 WAT	10.0	10.0
BARRICADE	4FL	0.38	PRE/8 WAT	10.0	10.0
TENACITY	4SC	0.156	8 WAT		

Table 2. Evaluations of the percent control of smooth crabgrass in 2008. Commercially acceptable control was considered to be 85% and above.

Treatment	Form	Rate lb ai/A	Timing	(----% Control----)
				August 20, 2008
BARRICADE	4FL	0.75	PRE	61.7
CHECK				0.0
BARRICADE	4FL	0.38	PRE/8 WAT	63.3
BARRICADE	4FL	0.38	PRE/8 WAT	78.3
TENACITY	4SC	0.156	8 WAT	