

Preemergence Control of Smooth Crabgrass

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Introduction

Pre-emergence control of smooth crabgrass (*Digitaria ischaemum*) in cool season turf was evaluated on a mature mono stand of 'Amazing GS' perennial ryegrass (*Lolium perenne* 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 herbicides for the preemergence control of smooth crabgrass and to evaluate injury to the desired species.

Methods and Materials

This study was a randomized complete block design with three replications (Figure 1). Treatments were applied on May 4 (PRE) and June 8, 2012 (5 WAT) using a three foot CO₂ powered boom sprayer (Figure 2) calibrated to deliver 40 gpa using one, flat fan, TP9504EVS nozzle at 40 psi. The site was mowed once per week with a rotary mower at two inches with clippings returned to the site.

The test site was overseeded with a native source of smooth crabgrass in the fall of at least two of the previous growing seasons. Smooth crabgrass germination was first noted in the test site on May 8, 2012.

Results and Discussion

Turfgrass phytotoxicity was rated four times during the study (Table 1). There was no phytotoxicity found on any rating dates.

The percent control of the smooth crabgrass was rated three times during the study (Table 2). On all rating dates, control of smooth crabgrass never fell below 90% with all treated plots. The commercially acceptable level of control was considered to be 85% or greater. The materials in this study provided excellent control of smooth crabgrass for the entire growing season.

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Table 1. Evaluations of turfgrass phytotoxicity of perennial ryegrass in 2012, where 0 = dead turf, 7 = acceptable, and 10 = no injury.

Treatment	Form	Rate lb ai/A	Timing	(-----Turf Phyto-----)			
				5/11	5/18	6/15	6/22
DITHIOPYR VC2	EC	0.25	PRE/5 WAT	10.0	10.0	10.0	10.0
DITHIOPYR VC2	EC	0.5	PRE	10.0	10.0	10.0	10.0
QUALIPRO DITHIOPYR	40WP	0.25	PRE/5 WAT	10.0	10.0	10.0	10.0
CHECK				10.0	10.0	10.0	10.0
QUALIPRO DITHIOPYR	40WP	0.5	PRE	10.0	10.0	10.0	10.0
QP PRODIAMINE	4L	32 oz/A	PRE	10.0	10.0	10.0	10.0
QUALIPRO PRODIAMINE	65WDG	24.6 oz/A	PRE	10.0	10.0	10.0	10.0
DIMENSION	2EW	0.25	PRE/5 WAT	10.0	10.0	10.0	10.0
DIMENSION	2EW	0.5	PRE	10.0	10.0	10.0	10.0

Table 2. Evaluations of smooth crabgrass control on a mono stand of perennial ryegrass in 2012, where 85% control or greater was considered commercially acceptable.

Treatment	Form	Rate lb ai/A	Timing	(-----Crabgrass Control-----)		
				7/4	8/4	8/27
DITHIOPYR VC2	EC	0.25	PRE/5 WAT	96.7	95.2	95.2
DITHIOPYR VC2	EC	0.5	PRE	96.7	95.2	95.2
QUALIPRO DITHIOPYR	40WP	0.25	PRE/5 WAT	97.9	94.7	92.9
CHECK				0.0	0.0	0.0
QUALIPRO DITHIOPYR	40WP	0.5	PRE	97.9	96.3	96.3
QP PRODIAMINE	4L	32 oz/A	PRE	95.0	90.2	90.2
QUALIPRO PRODIAMINE	65WDG	24.6 oz/A	PRE	95.8	94.4	94.4
DIMENSION	2EW	0.25	PRE/5 WAT	99.7	94.2	94.3
DIMENSION	2EW	0.5	PRE	100.0	100.0	100.0

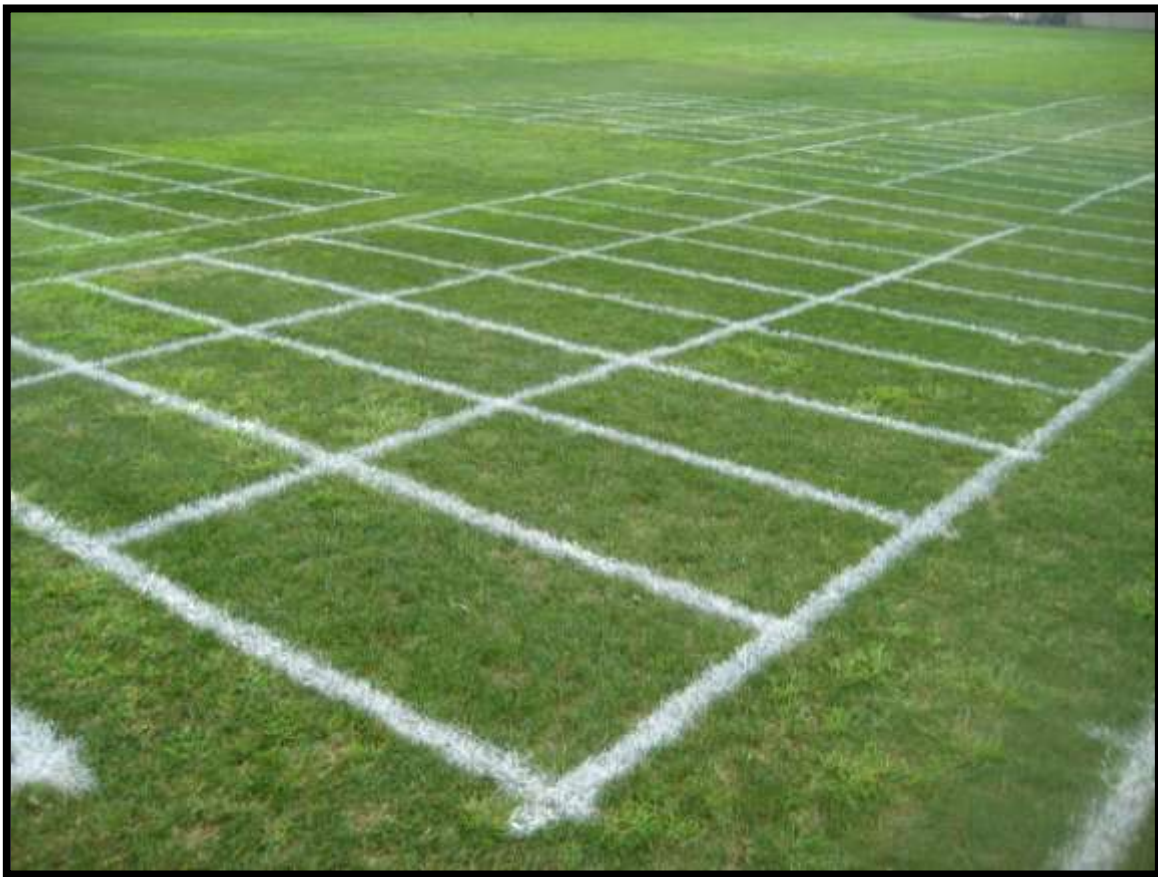


Figure 1: Overview of the crabgrass testing area. Photo taken 8/15/2012.



Figure 2: CO₂ powered boom sprayer used for applying liquid materials.