

Post Emergence Control of Smooth Crabgrass

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Introduction

Post emergence control of smooth crabgrass (*Digitaria ischaemum*) 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 post emergence control of smooth crabgrass

Methods and Materials

This study was a randomized complete block design with three replications. Treatments were applied on July 25 (2-3 TILL) and August 20, 2012 (3 WAT) using a three foot CO₂ powered boom sprayer (Figure 1) calibrated to deliver 80 gpa using one, flat fan, TP9508EVS nozzle at 40 psi. The test area (Figure 2) 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. Each 18 ft² test plot had approximately 80% smooth crabgrass at the initiation of the study. Smooth crabgrass germination was first noted in the test site on May 8, 2012.

Results and Discussion

Turfgrass phytotoxicity was rated twice during the study (Table 1). There was no phytotoxicity found on any rating date.

Crabgrass phytotoxicity was rated on August 1, 2012 (Table 2). Treated crabgrass exhibited varying levels of phytotoxicity.

The percent control of the smooth crabgrass was rated three times during the study (Table 3). In general, there was an increase in the control of smooth crabgrass found from the first rating date, to the last rating date. On the last rating date, September 5, 2012 all treated turfgrass provided greater than what is considered commercially acceptable (85% or greater) control.

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

Treatment	Form	Rate oz/A	Timing	---Turf Phyto---	
				8/1	8/8
XONERATE	70WDG	0.5	2-3 TILLER/3 WAT	10.0	10.0
TENACITY	4SC	5	2-3 TILLER/3 WAT		
CHECK				10.0	10.0
XONERATE	70WDG	1	2-3 TILLER/3 WAT	10.0	10.0
TENACITY	4SC	5	2-3 TILLER/3 WAT		
XONERATE	70WDG	0.25	2-3 TILLER/3 WAT	10.0	10.0
TENACITY	4SC	5	2-3 TILLER/3 WAT		
DRIVE XLR8	L	64	2-3 TILLER/3 WAT	10.0	10.0

Table 2. Evaluations of smooth crabgrass phytotoxicity in 2012, where 0 = dead weeds, 7 = acceptable, and 10 = no injury.

Treatment	Form	Rate oz/A	Timing	---Crab Phyto---
				8/1
XONERATE	70WDG	0.5	2-3 TILLER/3 WAT	6.3
TENACITY	4SC	5	2-3 TILLER/3 WAT	
CHECK				10.0
XONERATE	70WDG	1	2-3 TILLER/3 WAT	6.0
TENACITY	4SC	5	2-3 TILLER/3 WAT	
XONERATE	70WDG	0.25	2-3 TILLER/3 WAT	6.0
TENACITY	4SC	5	2-3 TILLER/3 WAT	
DRIVE XLR8	L	64	2-3 TILLER/3 WAT	7.8

Table 3. Evaluations of smooth crabgrass control, where 85% control or greater was considered commercially acceptable in 2012.

Treatment	Form	Rate oz/A	Timing	-----Crabgrass Control-----		
				8/8	8/22	9/5
XONERATE	70WDG	0.5	2-3 TILLER/3 WAT	76.2	78.2	91.6
TENACITY	4SC	5	2-3 TILLER/3 WAT			
CHECK				0.0	0.0	0.0
XONERATE	70WDG	1	2-3 TILLER/3 WAT	87.6	92.7	98.6
TENACITY	4SC	5	2-3 TILLER/3 WAT			
XONERATE	70WDG	0.25	2-3 TILLER/3 WAT	87.4	89.9	96.8
TENACITY	4SC	5	2-3 TILLER/3 WAT			
DRIVE XLR8	L	64	2-3 TILLER/3 WAT	27.2	29.8	87.0



Figure 1: CO₂ powered boom sprayer used for applying liquid materials.



Figure 2: Xonerate at 1 oz/A plus Tenacity at 5 oz/A. Photo taken 9/5/2012.