

Post Emergence Control of Smooth Crabgrass

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Introduction

Post emergence control of smooth crabgrass (*Digitaria ischaemum*) was evaluated on a mature mixed stand of 'Midnight' Kentucky bluegrass (*Poa pratensis*) and 'Jet Elite' 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 and the injury to the desired species.

Methods and Materials

This study was a randomized complete block design with three replications (Figure 1). All treatments were applied on July 15, 2009 at the two to four tiller stage of smooth crabgrass using a three foot CO₂ powered boom sprayer 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 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 on September 9, 2009.

Smooth crabgrass germination was first noted in the test site on April 28, 2009 and was at the two to four tiller stage of growth at the time of application of these materials.

Results and Discussion

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

Crabgrass phytotoxicity was rated two times during the study (Table 2). Treated crabgrass exhibited varying levels of phytotoxicity.

The percent control of the smooth crabgrass was rated two times during the study (Table 3). There was no commercially acceptable control (85% or greater) of smooth crabgrass found on any rating date.

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Table 1. Evaluations of turfgrass phytotoxicity in 2009 where 0 = dead turf, 7 = acceptable, and 10 = no phytotoxicity.

Treatment	Form	Rate oz/A	(-----Phytotoxicity-----)		
			7/22	7/29	8/12
ACCLAIM EXTRA	EW	20	10.0	10.0	10.0
CHECK			10.0	10.0	10.0
DRIVE XLR8	1.55EC	0.75 lb ai/A	10.0	10.0	10.0
ACCLAIM EXTRA	EW	28	10.0	10.0	10.0

Table 2. Evaluations of smooth crabgrass phytotoxicity after application of selected herbicides, taken in 2009.

Treatment	Form	Rate oz/A	(-----Crabgrass Phyto-----)	
			7/22	7/29
ACCLAIM EXTRA	EW	20	4.0	2.3
CHECK			10.0	10.0
DRIVE XLR8	1.55EC	0.75 lb ai/A	1.7	7.7
ACCLAIM EXTRA	EW	28	3.7	2.3

Table 2. Evaluations of the percent control of smooth crabgrass in 2009. Commercially acceptable control was considered to be 85% and above.

Treatment	Form	Rate oz/A	(-----% Control-----)	
			8/12	9/9
ACCLAIM EXTRA	EW	20	78.1	77.1
CHECK			0.0	0.0
DRIVE XLR8	1.55EC	0.75 lb ai/A	20.9	47.6
ACCLAIM EXTRA	EW	28	83.2	62.9



Figure 1: Overview of the testing area showing crabgrass phytotoxicity. Photo taken July 23, 2009 (7 DAT).