

Preemergence Crabgrass Control - 2000 Results

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Objective

Our objective was to determine the effectiveness of commercially available and experimental preemergence herbicides to control crabgrass.

Rationale

Crabgrass is one of the most common weeds invading turfgrass stands in Indiana. Turfgrass managers frequently use preemergence herbicides to control crabgrass. New preemergence herbicides to crabgrass control are being developed and refinements are continually being made to currently used preemergence herbicides. It is important that new herbicides and improved herbicides are evaluated under Indiana growing conditions so we can determine how effectively they control crabgrass.

How It Was Done

A stand of Kentucky bluegrass turf with a natural population of crabgrass at the William H. Daniel Turfgrass Research and Diagnostic Center was selected as the site for this experiment. The turf was mowed twice each week at 2.5 inches with clippings returned. No fertilizer was applied during the course of the experiment unless fertilizer was the carrier for a granular preemergence herbicide. Turf was irrigated to prevent any sign of drought stress. The initial date of herbicide application was 18 Apr-00 for all treatments. For those treatments with a split (sequential) application, the split application was made 45 days after initial application on 1 June-00. Sprayable formulations were applied using a three nozzle hand held boom in 2 gals H₂O/1000 ft². Granular products were applied using a hand shaker jar. Data collected were phytotoxicity to the Kentucky bluegrass turf and a visual rating of percent of the plot covered by crabgrass on 5 July, 3 Aug, and 8 Sep-00.

Results

None of the herbicide treatments caused phytotoxicity to the Kentucky bluegrass turf rated on 3, 7, and 10 days after application. The crabgrass population on the experimental site was extremely high. Percent cover by crabgrass in the check plot was 76.7% on 3 Aug and 100% on 8 Sep. Due to the high crabgrass population only three herbicide treatments provided less than 30% crabgrass cover on 8 Sep (Table 1). Since crabgrass cover on all plots was so high on 8 Sep, data from the 3 Aug rating date will be discussed. Herbicide treatments providing 15% or less crabgrass cover were considered to have provided commercially acceptable control. Treatments providing 15% or less crabgrass cover were: Team Pro on 19-3-7 0.86G applied 1.5 lbs ai/A 0 and 45 days, A12333C 4L applied 1.0 lbs ai/A 0 days, Barricade 65WG applied 1.0 lbs ai/A 0 days, A12333B 4L applied 1.0 lbs ai/A 0 days, Barricade 65WG applied 0.75 lbs ai/A 0 days and A12333C 4L applied 0.75 lbs ai/A 0 days. Several other treatments provided nearly 15% or less crabgrass cover and were not statistically different from treatments that provided 15% or less crabgrass cover.

Herbicide treatments that provided the least crabgrass cover were those treatments applied as a split application or at higher rates.

Table 1. Crabgrass cover following the application of commercially available and experimental preemergence herbicides.

Treatment	Rate of application	Application timing ^a	5 July	3 Aug	8 Sep
	lbs ai/A		%		
Barricade 65WG	0.5		0.7 ^b	25.0	90.0
Barricade 65WG	0.75		0.0	12.3	33.3
Barricade 65WG	1.0		0.0	7.7	28.3
A12333B 4L	0.5		0.3	23.3	90.0
A12333B 4L	0.75		0.0	16.7	70.0
A12333B 4L	1.0		0.0	9.0	35.0
A12333C 4L	0.5		0.3	26.7	81.7
A12333C 4L	0.75		0.0	14.0	61.7
A12333C 4L	1.0		0.0	7.0	26.7
PENDULUM 3.3EC	1.5		2.0	55.0	96.7
PENDULUM 3.3EC	2.0		1.7	48.3	95.0
PENDULUM 60WDG	1.5		1.3	41.7	88.3
PENDULUM 60WDG	2.0		1.0	40.0	75.0
PENDULUM 2G	1.5		0.7	31.7	71.7
PENDULUM 2G	2.0		1.3	33.3	91.7
Team Pro on 19-3-7 0.86G	2.0		0.3	20.0	70.0
Team Pro on 19-3-7 0.86G	1.5		0.3	5.3	18.3
Team Pro on 19-3-7 0.86G	1.5	6 to 8 weeks			
Pendimethalin on 19-3-7 0.86G	2.0		0.7	26.7	95.0
Pendimethalin on 19-3-7 0.86G	1.5		1.0	20.0	71.7
Pendimethalin on 19-3-7 0.86G	1.5	6 to 8 weeks			
Dimension on 19-3-5 0.1G	0.25		1.0	23.3	85.0
Barricade on 19-4-6 0.22G	0.5		0.3	18.3	63.3
Lebanon Experimental	157.0 ^e	dry	0.3	25.0	91.7
Lebanon Experimental	157.0 ^e	wet	0.3	26.7	96.7
Dimension 1EC	0.18		1.0	35.0	91.7
+ Blank ^c	21.0 ^f				
Dimension 1EC	0.25		1.0	30.0	81.7
+ Blank ^c	21.0 ^f				
Dimension 40WP	0.18		1.0	35.0	71.7
+ Blank ^c	21.0 ^f				
Dimension 40WP	0.25		0.3	26.7	80.0
+ Blank ^c	21.0 ^f				
AND445 0.164G	0.18		2.3	45.0	96.7
AND445 0.164G	0.25		1.7	43.3	95.0
XF-00020 2.65L	0.18		2.3	41.7	86.7
+ Blank ^c	21.0 ^f				
XF-00020 2.65L	0.25		1.0	26.7	85.0
+ Blank ^c	21.0 ^f				
XF-00045 2.43L	0.18		1.0	31.7	95.0

Table 1. Continued.

Treatment	Rate of application	Application timing ^a	5 July	3 Aug	8 Sep
	lbs ai/A		————— % —————		
+ Blank ^c	21.0 ^f				
XF-00045 2.43L	0.25		0.7	26.7	78.3
+ Blank ^c	21.0 ^f				
Tupersan 50WP	12.0		1.7	58.3	96.7
Dimension 1EC	0.5		0.3	41.7	91.7
Pendimethalin on 19-3-7 0.86G	3.0		0.0	15.7	68.3
Team Pro on 19-3-7 0.86G	3.0		0.0	16.7	51.7
Drive 75DF	0.75		3.0	65.0	100.0
+ MSO ^d	1.0 ^g				
Drive 75DF	0.75		4.0	68.3	100.0
+ BAS 090 02 S ^d	1.0 ^g				
Drive 75DF	0.5		3.0	50.0	93.3
+ MSO ^f	1.0 ^g				
Drive 75DF	0.5		4.0	61.7	100.0
+ BAS 090 02 S ^d	1.0 ^g				
Check			8.3	76.7	100.0
LSD (0.05)			2.0	13.6	29.6

^a Denotes timing of split applications. All treatments were initially applied 18 Apr.

Treatments requiring a split application 6 to 8 weeks after the initial application were made on 1 June. The dry application was applied in the afternoon to dry turf and the wet application was applied the same morning to wet turf.

^b Percent of plot area covered by crabgrass.

^c Blank indicates a dry fertilizer applied at the same time as the herbicide.

^d Denotes products applied as a tank mix.

^e Rate is pounds product/A.

^f Rate is grams product/m².

^g Rate is percent volume/volume