

Preemergence Crabgrass Control - 1999 (Daniel Turf Center)

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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 for 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 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 21 Apr 1999 for all treatments. For those treatments with a split (sequential) application, the split application was made 45 days after initial application on 3 June 1999. Two treatments called for a second split application which was applied 90 days after the initial application on 20 July 1999. Sprayable formulations were applied using a three nozzle hand held boom in 4 gals of water per 1000 sq. ft. 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 7 July, 4 Aug and 8 Sep 1999.

Results

- None of the herbicide treatments caused any phytotoxicity damage to the Kentucky bluegrass turf.
- The untreated check had 81.3% crabgrass cover on 8 Sep 1999 (Table 1).
- Herbicide treatments providing nearly 10% or less crabgrass cover were considered to be commercially acceptable.
- Twelve treatments provided 10% or less crabgrass cover and another three treatments provided 15% or less crabgrass cover.
- Herbicide treatments applied as split applications provided much less crabgrass cover than a single application when the same total of ai/A was applied.

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

Treatment	Rate of application	Application timing ^b	Crabgrass cover ^a		
			7 July	4 Aug	8 Sep
	lbs ai/A		%		
Barricade 65WG	0.5		1.7	8.7	9.3
Ronstar 2G	3.0		4.0	10.7	22.7
Team 2G	3.0		6.0	20.7	25.7
Pendulum 60DG	1.5		7.7	26.7	36.7
Pendulum 60DG	2.0		7.7	48.3	58.3
Pendulum 60DG	2.5		3.7	30.0	35.0
Pendulum 60DG	3.0		2.3	21.7	20.0
Pendulum 60DG	1.5		0.3	6.0	4.3
Pendulum 60DG	1.5	45			
Barricade 65WG	0.38		0.3	4.3	5.7
Barricade 65WG	0.25	45			
Barricade 65WG	0.65		2.0	10.0	10.7
AND446 0.25G	0.38		2.0	15.7	15.0
AND445 0.164G	0.18		1.7	3.7	5.7
AND445 0.164G	0.18	45			
AND447 0.25G	0.5		2.7	16.7	25.0
AND445 0.164G	0.25		0.0	1.0	3.0
AND445 0.164G	0.25	45			
AND446 0.25G	0.38		0.7	1.3	1.3
AND446 0.25G	0.38	45			
AND445 0.164G	0.25		0.3	0.7	0.7
AND445 0.164G	0.25	45			
AND445 0.164G	0.25	90			
Dimension 1EC	0.38		2.0	11.3	13.0
Dimension 1EC	0.18		1.0	5.0	6.7
Dimension 1EC	0.18	45			
Dimension 1EC	0.5		3.3	24.3	34.7
Dimension 1EC	0.25		0.0	7.3	8.0
Dimension 1EC	0.25	45			
Dimension 1EC	0.38		0.3	4.0	4.3
Dimension 1EC	0.38	45			
Dimension 1EC	0.25		1.0	4.7	4.3
Dimension 1EC	0.25	45			
Dimension 1EC	0.25	90			
Team Pro on 19-3-7 .86G	1.5		8.3	35.0	31.7
Team Pro on 19-3-7 .86G	1.5		1.3	4.3	3.7
Team Pro on 19-3-7 .86G	1.5	45			
Team Pro on 19-3-7 .86G	2.0		14.7	50.0	65.0
Pendimethalin on 19-3-7 .86G	1.5		10.7	40.0	55.0
Pendimethalin on 19-3-7 .86G	1.5		7.0	25.0	33.3
Pendimethalin on 19-3-7 .86G	1.5	45			

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

Treatment	Rate of application lbs ai/A	Application timing ^b	Crabgrass cover ^a		
			7 July	4 Aug	8 Sep
Pendimethalin on 19-3-7 .86G	2.0		11.7	41.7	50.0
Dimension on 19-3-5 .1G	0.38		9.3	30.0	51.7
Barricade on 19-4-6 .22G	0.5		4.0	21.7	35.0
Check	---		19.3	62.7	81.3
LSD (0.05)			5.5	19.7	27.4

^a Visual rating of percent of plot covered by crabgrass.

^b Denotes timing of split applications. All treatments applied 21 Apr, 45 day split applied 3 June, and 90 day split applied 20 July.