

Control of Crabgrass with Preemergence Herbicides- 2002

Zac Reicher and Dan Weisenberger

Background/Objective

To evaluate crabgrass control using commercially available and experimental preemergence herbicides.

Site Information

Location:	William H. Daniel Research and Diagnostic Center, W. Lafayette, IN.
Soil Type:	Starks-Fincastle silt loam
Soil pH:	7.2
Soil Organic Matter (%):	5
Turfgrass Species:	Kentucky bluegrass
Turf Condition:	Fair
Turf Management: Mowing Height cm (in):	6.35 (2.5)
Fertilization:	1 lb N/M/YR
Irrigation:	To prevent moisture stress
Testing on Site Previous Year:	None
Target Pest:	<i>Digitaria</i> spp. (crabgrass)
Growth Stage:	Pregermination

Application Information

Application Date:	22 April	15 June
Application Time:	6:30 pm	7:30 am
Air Temperature C⁰(F⁰):	9.1 (48)	17.3 (63)
Relative Humidity (%):	56	60
Wind Speed m s⁻¹ (mph):	1.3- (3-4)	2.2 (5)
Soil Temperature (7.6 cm depth) C⁰(F⁰):	10 (50)	15.6 (60)
Soil Moisture:	Moist	Moist
Spray Volume L ha⁻¹ (gal 1000 ft⁻²):	814 (2)	
Spray Pressure:	35psi	
Spray Nozzle:	8001.5	
Spray Equipment:	CO ₂ backpack	
Irrigation After Application:	None	
Experimental Design:	Randomized complete block	
Replications:	3	
Plot Size m (ft):	1.5 X 1.5 (5 X 5)	

Results:

Few differences in crabgrass cover were seen among the treatments by July. This was because crabgrass was slow to develop in the area, even though the experimental area has a history of tremendous crabgrass pressure. All herbicide treatments except MON 39805 at 3.25 lb ai/A reduced crabgrass cover compared to the untreated check by the end of the study. Though there were no statistical differences in crabgrass control among the herbicides, the Barricade 4FL and 65WDG provided the best control.

Table 1. Effect of experimental and commercially available preemergence herbicides on Kentucky bluegrass and percent crabgrass cover.

Treatment	Rate of application	Phytotoxicity		Crabgrass ^e	%Crabgrass	
		26 Apr	3 May	2 July	9 Aug	4 Sep
	lb a.i./A					
Pendulum 3.3EC	1.5	9	9	1.0	9.7	5.0
Pendulum 3.3EC ^a	1.5					
Pendulum 3.3EC	2.0	9	9	1.0	8.3	7.3
Pendulum 3.8CS	1.5	9	9	1.0	5.7	3.3
Pendulum 3.8CS ^a	1.5					
Pendulum 3.8CS	2.0	9	9	1.0	4.0	2.3
Barricade 4FL	21.0 ^c	9	9	1.0	0.3	0.3
Barricade 4FL ^a	10.0 ^c					
Barricade 4FL	32.0 ^c	9	9	1.0	0.0	0.7
Barricade 65WDG	1.0 ^d	9	9	1.0	0.0	0.0
Barricade 65WDG ^a	0.5 ^d					
Barricade 65WDG	1.5 ^d	9	9	1.0	0.3	0.7
Dimension 40WP	0.25	9	9	1.0	2.0	1.3
Dimension 40WP ^a	0.25					
Dimension 40WP	0.5	9	9	1.0	2.7	2.7
Barricade 65WDG	0.5	9	9	1.0	1.3	2.0
MON 39805 3.85LF	2.75	9	9	1.0	6.0	5.0
MON 39805 3.85LF	3.25	9	9	1.0	6.7	9.0
MON 39805 3.85LF	3.75	9	9	1.7	7.7	2.3
MON 39805 3.85LF	5.25	9	9	1.3	3.3	3.7
MON 39805 3.85LF	3.25	9	9	1.0	4.0	2.7
MON 39805 3.85LF ^a	2.0					
MON 39805 3.85LF	3.25	9	9	1.0	6.3	4.7
MON 39805 3.85LF ^a	1.25					
MON 39805 3.85LF ^b	3.0	9	9	1.0	4.0	2.7
Pendulum 60WG ^b	1.0					
Pendulum 60WG	3.0	9	9	1.3	7.7	3.3
Check		9	9	1.7	19.3	15.0
LSD (0.05)		NS	NS	0.4	8.4	7.0

^a Denotes an eight week application split, first application being 22 April and second application being 15 June.

^b Denotes products applied as a tank mix.

^c Application rate was fluid ounces per acre.

^d Application rate was pounds product per acre.

^e Crabgrass was rated for being present in plot, 1 = crabgrass not present and 2 = crabgrass present.