

2004 Crabgrass Control Trial

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The purpose of this study was to evaluate the efficacy of several preemergence and postemergence herbicides for control of crabgrass. The study was conducted at the Iowa State University Research Facility on 'Ram 1' Kentucky bluegrass. To ensure uniformity, the plot area was seeded with crabgrass on April 26, 2004.

All liquid treatments were applied using a carbon dioxide backpack sprayer with #8002 flat fan TeeJet nozzles at 30-40 psi and diluted to a total spray volume of 3 gal per 1000 ft². Granular materials were applied using 'shaker dispensers' in order to provide uniform application. The initial preemergence application took place on April 27, 2004. On June 8, the 1-to-2-leaf-stage, the 1-to-3-leaf-stage, the early-post, and the 6-weeks-after-initial-treatment applications were made. The 4-to-6-leaf-stage application took place on July 10. Tillering crabgrass was treated on Aug. 3.

Turf quality was evaluated weekly during the summer and no damage to the bluegrass was observed from any of the treatments. On Aug. 13 and Sept. 10, the number of crabgrass plants in each plot were recorded.

Data were analyzed using Statistical Analysis System (SAS) and the Analysis of Variance procedure (ANOVA). Treatment effects were tested using the Least Significant Difference (LSD) test.

Heavy rains during and following the germination of crabgrass in May and June resulted in an extended period of flooding on the west end of the plots. This apparently affected establishment of the natural population and the seeded crabgrass, and very little germination occurred on the west one half of the study area. All three of the controls were in the flooded area which resulted in a lack of significant differences among treatments and the control.

While some differences occurred among treatments, the artifact caused by the flooding makes interpretation of the data difficult. Treatments and results are listed in Table 1.

Table 1. Number of crabgrass plants per plot for the 2004 Crabgrass control trial.

Treatment	Application timing	Rate a.i./A	Rate product/A	Crabgrass number	
				Aug. 13	Sept. 10
1 ^Z Untreated Control	N/A	N/A	N/A	2	2
2 Pendulum 3.3 EC	Preemergence	2 lb	77.58 oz	48	48
3 Pendulum 3.3 EC	Preemergence	1 lb	38.79 oz	58	52
	6 WAIT ^y	1 lb	38.79 oz		
4 Pendulum 3.8 CS	Preemergence	2 lb	67.37 oz	0	0
5 Pendulum 3.8 CS	Preemergence	1 lb	33.68 oz	0	0
	6 WAIT	1 lb	33.68 oz		
6 Oxadiazon I 2G	Preemergence	3 lb	150.00 lb	0	0
7 Oxadiazon II 2G	Preemergence	3 lb	150.00 lb	6	3
8 Oxadiazon III 2G	Preemergence	3 lb	150.00 lb	0	0
9 Oxadiazon I 2G	1-2 leaf stage	3 lb	150.00 lb	10	4
10 Oxadiazon II 2G	1-2 leaf stage	3 lb	150.00 lb	0	1
11 Oxadiazon III 2G	1-2 leaf stage	3 lb	150.00 lb	67	61
12 Ronstar 2G	Preemergence	3 lb	150.00 lb	1	5
13 Ronstar 2G	1-2 leaf stage	3 lb	150.00 lb	10	6
14 Ronstar 50 WSP	Preemergence	3 lb	6.00 lb	1	0
15 Betasan 4E	Preemergence	20 lb	320.00 oz	0	1
16 GWN-3031	Preemergence	20 lb	320.00 oz	0	0
17 GWN-3055	Preemergence	20 lb	320.00 oz	0	2
18 Barricade 4 FL	Preemergence	0.65 lb	20.80 oz	29	24
19 Mesotrione 4SC-A ^x	Preemergence	0.25 lb	8.00 oz	13	7
20 Mesotrione 4SC-A ^x	1-3 leaf stage	0.125 lb	4.00 oz	40	39
21 Mesotrione 4SC-A ^x	1-3 leaf stage	0.187 lb	6.00 oz	12	12
22 Mesotrione 4SC-A ^x	1-3 leaf stage	0.25 lb	8.00 oz	25	23
23 Mesotrione 4SC-A ^x	4-6 leaf stage	0.187 lb	6.00 oz	0	0
24 Mesotrione 4SC-A ^x	4-6 leaf stage	0.25 lb	8.00 oz	0	0
25 Mesotrione 4SC-A ^x	1-3 leaf stage	0.1875 lb	6.00 oz	0	0
	4-6 leaf stage	0.187 lb	6.00 oz		
26 Mesotrione 4SC-A ^x	1-3 leaf stage	0.25 lb	8.00 oz	0	0
	4-6 leaf stage	0.25 lb	8.00 oz		
27 Mesotrione 4SC-A ^x	Tillering	0.187 lb	6.00 oz	2	2
28 Mesotrione 4SC-A ^x	Tillering	0.25 lb	8.00 oz	41	5
29 Mesotrione 4SC-A ^x	Preemergence	0.187 lb	5.98 oz	0	0
	Barricade 4 FL	Preemergence	0.65 lb		
30 Barricade 4 FL	1-3 leaf stage	0.65 lb	20.80 oz	17	15
31 Mesotrione 4SC-A ^x	1-3 leaf stage	0.187 lb	5.98 oz	1	1
	Barricade 4 FL	1-3 leaf stage	0.65 lb		
32 Mesotrione 4SC-A ^x	1-3 leaf stage	0.25 lb	8.00 oz	0	1
	Barricade 4 FL	1-3 leaf stage	0.65 lb		

(Table 1. Cont.)

Treatment	Application timing	Rate a.i./A	Rate product/A	Crabgrass number		
				Aug. 13	Sept. 10	
33	Mesotrione 4SC-A ^x	1-3 leaf stage	0.187 lb	5.98 oz		
	Barricade 4 FL	1-3 leaf stage	0.65 lb	20.80 oz	0	0
	Mesotrione 4SC-A ^x	4-6 leaf stage	0.187 lb	5.98 oz		
	Barricade 4 FL	4-6 leaf stage	0.65 lb	20.80 oz		
34	Mesotrione 4SC-A ^x	1-3 leaf stage	0.25 lb	8.00 oz		
	Barricade 4 FL	1-3 leaf stage	0.65 lb	20.80 oz	0	0
	Mesotrione 4SC-A ^x	4-6 leaf stage	0.25 lb	8.00 oz		
	Barricade 4 FL	4-6 leaf stage	0.65 lb	20.80 oz		
35	Barricade 4 FL	1-3 leaf stage	0.65 lb	20.80 oz		
	Mesotrione 4SC-A ^x	4-6 leaf stage	0.25 lb	8.00 oz	0	0
	Barricade 4 FL	4-6 leaf stage	0.65 lb	20.80 oz		
36	A14524A 0.06%	Preemergence	0.14 lb	225.00 lb	23	16
37	A14525A 0.08%	Preemergence	0.18 lb	225.00 lb	0	1
38	A14526A 0.25%	Preemergence	0.56 lb	225.00 lb	0	0
39	Dimension Ultra 40 WP	Preemergence	0.25 lb	0.63 lb	1	2
	Dimension Ultra 40 WP	Early post	0.25 lb	0.63 lb		
40	Dimension Ultra 40 WP	Preemergence	0.50 lb	1.25 lb	18	16
41	Andersons Dimension	Preemergence	0.15 lb	95.84 lb	0	0
42	Andersons Dimension	Preemergence	0.25 lb	152.48 lb	2	2
LSD_{0.05}					NS^w	NS

^z Treatments 2-5 were screened for the BASF Corporation, 6-14 for Bayer Environmental Sciences, 15-17 for the Gowan Company, 18-38 for Syngenta Crop Protection, Inc., and 39 and 40 for Dow AgroSciences, respectively.

^y Weeks after initial treatment.

^x Denotes that the non-ionic surfactant X-77 was used at a rate of 0.25% volume by volume.

^w Means are not significantly different at the 0.05 level.