

# CONTROL OF CRABGRASS WITH PRE AND POSTEMERGENCE HERBICIDES

STOP  
#11

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Crabgrass, be it hairy or smooth, is a troublesome pest throughout most of the United States. Without adequate preemergence herbicides in previous heavily infested sites, crabgrass will slowly turn a desirable turf into a nightmare. As of January, 1987, "Acclaim" 1 EC herbicide is now registered for turfgrass usage. This will prove to be a useful tool for postemergence crabgrass control on high quality turf.

Four studies were initiated to test preemergence and postemergence herbicides in a variety of situations:

1. Acclaim and Curfew in combination with popular preemergence herbicides tested on various crabgrass growth stages.
2. Preemergence herbicides applied postemergence to various crabgrass growth stages.
3. Trimec applied at intervals before and after Acclaim applications.
4. Acclaim applied to a Bentgrass variety trial.

In the first three studies, crabgrass plants were established by spraying Roundup herbicide on the existing weeds in early spring followed by vertical mowing and overseeding with crabgrass. Table 10 shows the herbicide combinations along with the results of the first experiment.

The best pre-post combinations were Acclaim at both rates (0.12 and 0.18 lb/A) plus bensulide, which is consistent with last year's results. Acclaim alone rapidly killed the crabgrass plants up to 4 tillers within two weeks. The split applications of Acclaim (#9 & 14) gave excellent control also.

The second experiment contained a very promising herbicide developed by Monsanto for pre and postemergence control of crabgrass. As shown in Table 11, this product can control plants up to seven tillers or more in approximately 4 to 5 weeks. Also, Pendimethalin did show postemergence activity on small crabgrass plants.

Past research has shown Acclaim to be antagonistic with phenoxy herbicides. A study was initiated on August 15th to try and determine what the proper timing should be between an application of Acclaim and a 2,4-D containing product. Crabgrass plants in the test area ranged from 7 to 11 tillers. The treatments and days between applications chosen are as follows:

TREATMENTS	RATE (LB/A)
1. Acclaim	0.25
2. Acclaim + Trimec (Tank mixed)	0.25 + 1.0*
3. Acclaim + Trimec (3 days after Acclaim)	0.25 + 1.0*
4. Acclaim + Trimec (3 days before Acclaim)	0.25 + 1.0*
5. Acclaim + Trimec (1 day before Acclaim)	0.25 + 1.0*
6. Acclaim + Trimec (1 day after Acclaim)	0.25 + 1.0*
7. Acclaim + Trimec (5 days after Acclaim)	0.25 + 1.0*
8. UNTREATED	-----

(\*1.0 LB rate implies the 2,4-D proportion of Trimec.)

The results should show that a longer period between applications will increase Acclaim's effectiveness and the antagonism will be diminished.

Due to the curiosity of field day participants in 1986, a study was initiated on August 20, 1987, using Acclaim at very low rates on a bentgrass variety trial. Since bentgrass is very sensitive to Acclaim, the rates chosen were 0.03, 0.05, and 0.08 lbs ai/A on the following varieties:

- |              |             |
|--------------|-------------|
| 1. CARMEN    | 7. SEASIDE  |
| 2. EMERALD   | 8. TORONTO  |
| 3. KINGSTOWN | 9. B853WWK  |
| 4. PENNCROSS | 10. V851WWK |
| 5. PENNEAGLE | 11. V852WWK |
| 6. PROMINENT | 12. V858WWK |

Large Crabgrass (*D. sanguinalis*) was overseeded into one half of each plot to try to determine if these low rates can control young crabgrass plants at the 1 to 3 leaf stage. The highest rate of 0.08 lb/A has been phytotoxic to the bentgrass varieties previously this season. Percent control and phytotoxicity ratings will be determined this fall at 1 week intervals.

TABLE 10. Acclaim and Curfew timing with preemergence herbicide combinations for controlling crabgrass.

TREATMENTS	RATE(lb/A)	APP.DATE	GS <sup>a</sup>	PERCENT CRAB GROUND COVER				
				weeks after treatment				
				0	2	4	6	8
Curfew	1.5	June 1st	1-1.5lf	47	35	13	53	62
Curfew	2.0	"	"	43	24	5	24	33
Cur + Starane	1.0 + .25	"	"	43	23	17	44	44
Cur + Starane	1.5 + 5.0	"	"	47	15	4	19	26
Starane	.50	"	"	47	22	25	62	67
Cur + Pendimethalin	1.0 + 2.0	"	"	22	8	4	11	24
Cur + Bensulide	1.0 + 7.5	"	"	35	14	8	22	32
Acclaim	.12	"	"	47	4	10	19	28
Acclaim + Acclaim	.12 + .12	(" + 7-1)	"	38	3	9	1 <sup>b</sup>	2 <sup>c</sup>
Acc + Bensulide	.12 + 7.5	June 1st	"	48	4	7	7	12
Acc + DCPA	.12 + 7.5	"	"	43	5	5	19	25
Acc + Pendimethalin	.12 + 1.5	"	"	62	7	4	17	25
Acclaim	.18	"	"	30	0	2	2	9
Acclaim + Acclaim	.18 + .18	(" + 7-1)	"	42	1	6	0 <sup>b</sup>	1 <sup>c</sup>
Acc + Bensulide	.18 + 7.5	June 1st	"	35	0	4	4	6
Acc + DCPA	.18 + 7.5	"	"	43	2	3	12	18
Acc + Pendimethalin	.18 + 1.5	"	"	63	4	2	9	17
Acclaim	.25	"	"	32	1	4	4	11
Acclaim	.35	"	"	45	1	4	18	26
Curfew	1.5	June 15	1-3 Til	63	60	43	53	68
Curfew	2.0	"	"	63	58	23	40	59
Acclaim	.12	"	"	47	7	10	22	40
Acclaim	.18	"	"	72	3	10	18	35
Acclaim	.25	"	"	67	2	7	17	38
Acclaim	.35	"	"	75	12	27	35	47
Curfew	1.5	July 1	2-4 Til	87	53	38	52	
Curfew	2.0	"	"	85	63	5	17	
Cur + Starane	1.5 + .50	"	"	75	42	14	26	
Starane	.50	"	"	83	67	45	62	
Acclaim	.12	"	"	78	22	22	28	
Acclaim	.18	"	"	74	38	16	40	
Acclaim	.25	"	"	78	15	4	18	
Acclaim	.35	"	"	77	14	4	16	
Curfew	1.5	July 15	3-6 Til	94	72	26		
Curfew	2.0	"	"	75	53	10		
Acclaim	.12	"	"	73	78	85		
Acclaim	.18	"	"	85	90	91		
Acclaim	.25	"	"	80	68	70		
Acclaim	.35	"	"	85	62	78		
Curfew	1.5	July 30	6-10 Til	75	67			
Curfew	2.0	"	"	90	70			
Cur + Starane	1.5 + .50	"	"	70	73			
Starane	.50	"	"	71	63			
Acclaim	.12	"	"	89	87			
Acclaim	.18	"	"	94	87			
Acclaim	.25	"	"	93	81			
Acclaim	.35	"	"	89	83			
Untreated	---	---	---	90	89			

a - GS = Growth stage of Digitaria sanguinalis.

b - Ratings taken 2 weeks after the second application of Acclaim.

c - Ratings taken 4 weeks after the second application of Acclaim

TABLE 11. MON 15126 tested as postemergence treatments applied on three stages of Digitaria sanguinalis growth, 1987.

TREATMENT	RATE(LB/A)	PERCENT CRABGRASS GROUNDCOVER				
		OWAT	2WAT	4WAT	6WAT	8WAT
Application Date = 5-29-87						
Growth Stage = 1.5 to 3 Leaf						
1. MON 15126	0.50	23.3	31.7	17.7	11.3	7.7
2. MON 15126	1.0	26.7	33.3	11.0	1.0	1.3
3. MON 15126	2.0	22.6	18.7	3.3	0.0	1.0
4. CONTROL	---	28.3	73.3	76.7	87.0	87.0
Application Date = 6-16-87						
Growth Stage = 1 to 3 Tillers						
5. MON 15126*	0.50	71.7	73.3	73.3	74.0	76.0
6. MON 15126*	1.0	75.0	71.7	65.0	31.7	29.3
7. MON 15126*	2.0	81.7	80.0	72.7	19.0	6.3
Application Date = 7-1-87						
Growth Stage = 4 to 7 Tillers						
8. MON 15126*	0.50	91.7	92.3	88.0	80.0	---
9. MON 15126*	1.0	90.3	88.0	88.3	64.0	---
10. MON 15126*	2.0	90.0	93.3	61.3	10.3	

\* Frigate added at 0.5% Vol/Vol.