

## POSTEMERGENCE CRABGRASS CONTROL

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Trials were conducted at the Hancock Turfgrass Research Center during the summer of 1989 to evaluate the efficacy of preemergence and postemergence herbicides applied alone and in combinations to crabgrass (Digitaria sanguinalis and D. ischaemum) at three different growth stages.

The crabgrass study was conducted on a weedy site with a previous history of crabgrass infestation. In April of 1989 Roundup was applied to kill existing vegetation and the site was overseeded with large crabgrass to supplement the natural population. The area received no irrigation. Rainfall was plentiful during the application period (late May to early July). Conditions became somewhat drier in mid to late July. Treatments were applied at the 2-3 leaf growth stage (6/2/89), 2-4 tiller growth stage (6/23/89), and at the 4-6 tiller growth stage (7/7/89).

At the 2-3 leaf stage, Acclaim (0.08 and 0.12 lb ai/A) applied in combination with Team (2.0 lb ai/A) gave the best short-term crabgrass control when compared with other currently available products. Acclaim (0.08 and 0.12 lb ai/A) plus pendimethalin (1.5 lb ai/A), DPCA (10.5 lb ai/A) plus Acclaim (0.25 lb ai/A), and Acclaim (0.12 lb ai/A) applied alone also gave good short-term control. As was the case in 1988, Acclaim at 0.12 lb ai/A gave better control than at 0.18 lb ai/A. BAS 514, an experimental herbicide from BASF with both pre- and postemergence activity, gave the best short-term control of all products tested. Long-term control with this product was effectively achieved by repeating the application after 30 days. MON-15104 (0.75 lb ai/A) and MON-15151 (0.38 and 0.5 lb ai/A), also experimental herbicides with pre- and postemergence activity, gave the best long-term control from a single application. BAS 514 (1.0 lb ai/A) applied as a late preemergence treatment also gave very good long-term control.

At the 2-4 tiller growth stage BAS 514 (0.75 and 1.0 lb ai/A) plus BAS 090, a surfactant, gave excellent control for at least 6 weeks after treatment. Acclaim (0.25 lb ai/A) provided good short-term control. Combining Acclaim with pendimethalin (1.5 lb ai/A) extended activity somewhat. HOE-46360, the single, active isomer of the Acclaim product, (0.18 lb ai/A) also gave good short-term control.

At the 4-6 tiller growth stage BAS 514 (0.75 and 1.0 lb ai/A) + BAS 090 again achieved the best initial control, however, Acclaim (0.18 and 0.25 lb ai/A) plus pendimethalin (1.5 and 1.0 lb ai/A) was equally effective after 4 weeks. Acclaim at 0.35 lb ai/A combined with pendimethalin (1.0 lb ai/A) achieved the best control of all products tested after 4 weeks. Longer-term data at the 4-6 tiller stage was not yet available at the time this article was written.

In summary, herbicide efficacy is dependent on the crabgrass growth stage in most cases. BAS 514 is a notable exception. Acclaim is the best product currently available for postemergence crabgrass control. Acclaim in combination with Team and pendimethalin gave longer-term control than Acclaim alone, although generally only by a few weeks. The increase in efficacy during the first few weeks after application of Acclaim plus Team over Acclaim alone when applied at the 2-3 leaf stage may indicate a synergistic effect between these two products. Two experimental herbicides, BAS 514 and MON-15100 showed promising results for pre and postemergence crabgrass control.

TABLE 3. Effect of pre- and postemergence herbicides on crabgrass control.

Treatments	Rate (lbs ai/A)	PERCENT CRABGRASS CONTROL				
		1 WAT	2 WAT	4 WAT	6 WAT	8 WAT
Growth Stage: 2-3 leaf						
Application Date: 6-2-89						
BAS 514*	1.0	67	91	93	86	54
BAS 514 + 090	0.75 + 2 pts/A	93	98	94	7	0
BAS 514 + 090	1.0 + 2 pts/A	100	100	85	35	0
BAS 514 + 090**	0.75 + 2 pts/A	100	100	97	97	97
BAS 514 + 090**	1.0 + 2 pts/A	93	100	80	87	87
Acclaim + Pendimethalin	0.08 + 1.5	67	83	90	47	17
Acclaim + Pendimethalin	0.12 + 1.5	50	93	90	47	0
Acclaim + Team	0.08 + 2.0	91	100	91	33	0
Acclaim + Team	0.12 + 2.0	90	98	98	72	10
DCPA + Acclaim***	10.5 + 0.25	72	90	89	41	27
MON-15151	0.38	27	48	98	82	65
MON-15151	0.5	50	76	93	67	60
MON-15104	0.38	50	78	89	61	56
MON-15104	0.5	38	54	76	72	42
MON-15104	0.75	30	57	100	90	75
MON-15175	0.38	22	33	33	22	22
MON-15175	0.5	33	17	50	40	23
MON-15111	0.38	11	60	87	44	31
MON-15112	0.5	27	45	85	72	27
MON-15112	0.75	27	58	89	76	51
Acclaim	0.12	73	73	80	20	0
Acclaim	0.18	62	53	73	0	0
MSMA	2.0	28	38	17	0	0
MSMA**	2.0	0	0	0	0	0
Control		13	0	0	0	0
Control		20	13	0	0	0

TABLE 3 cont. Effect of pre- and postemergence herbicides on crabgrass control.

Treatments	Rate (lbs ai/A)	PERCENT CRABGRASS CONTROL				
		1 WAT	2 WAT	4 WAT	6 WAT	8 WAT
Growth Stage: 2-4 tiller						
Application Date: 6-23-89						
BAS 514 + 090	0.75 + 2 pts	98	98	95	93	
BAS 514 + 090	1.0 + 2 pts	100	97	93	92	
MSMA**	2.0	22	6	0	0	
MSMA	2.0	19	6	0	0	
Acclaim	0.18	44	86	20	0	
Acclaim	0.25	38	93	68	8	
HOE-46360	0.06	40	86	0	0	
HOE-46360	0.09	66	76	24	0	
HOE-46360	0.125	69	84	51	0	
HOE-46360	0.18	77	96	81	21	
HRAV 01129	0.18	0	0	0	0	
MON-15151	0.38	0	0	0	0	
MON-15151	0.5	15	0	0	0	
MON-15151	0.75	15	10	10	0	
Acclaim + Pendimethalin	0.12 + 1.5	37	90	47	11	
Acclaim + Pendimethalin	0.18 + 1.5	54	88	53	27	
Acclaim + Pendimethalin	0.25 + 1.5	17	93	70	50	
Control		0	0	0	0	
Control		0	0	0	0	

Growth Stage: 4-6 tiller  
Application Date: 7-7-89

BAS 514 + 090	0.75 + 2 pts	97	95	81
BAS 514 + 090	1.0 + 2 pts	95	96	74
MSMA**	2.0	7	20	0
MSMA	2.0	31	53	18
Acclaim	0.18	23	70	77
Acclaim	0.25	22	59	79
MON-15151	0.38	6	0	12
MON-15151	0.5	20	0	0
MON-15151	0.75	2	0	26
Acclaim + Pendimethalin	0.18 + 1.5	33	76	82
Acclaim + Pendimethalin	0.25 + 1.0	14	72	78
Acclaim + Pendimethalin	0.35 + 1.0	45	70	96
Control		4	2	0
Control		0	0	0

\* - Applied as a late preemergent on 5/23/89.

\*\* - Treatment repeated after 30 days.

\*\*\* - DCPA applied as a late preemergent on 5/23/89.  
Acclaim applied at 2-4 tiller stage on 6/23/89.