

Control Strategy for Annual Bluegrass Using Prograss and a Preemergence Herbicide

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For the Michigan golf course superintendent, annual bluegrass control can be challenging and often unsuccessful. Several strategies exist for annual bluegrass control and given time may prove effective. The ultimate goal would be to control the existing annual bluegrass and prevent reinvasion by seed. Renovation as a means of annual bluegrass control is a popular strategy. In contrast preemergence herbicides used alone or in combination with postemergence products to prevent reinvasion has not been widely accepted.

In 1991 a study was initiated to evaluate fall applied PROGRASS to control existing annual bluegrass and in the spring a follow up application of a preemergence herbicide to prevent reinvasion of the annual bluegrass. Plots were treated with the first application of PROGRASS on 09/24/91 at a rate of 0.75 or 1.50 lbs AI/A and received one or two additional applications at three week intervals. Plots were evaluated in the fall for control (Data not shown) and again in the spring following the addition of a preemergence herbicide. Half the plot area received a preemergence herbicide on 04/06/92 before germination of annual bluegrass had occurred. Three visual evaluations were used to rate the percent control of annual bluegrass and ground cover.

All PROGRASS treatments that received a preemergence treatment gave significant control of annual bluegrass in comparison with the treatment lacking a preemergence application. The treatment that received two applications of 0.75 lbs AI/A of PROGRASS was the only exception (Table 1).

In addition to the prior study we repeated the 1990-1991 preemergence study looking at several commercially available and four experimental preemergence herbicides for annual bluegrass control. Evaluations were again done using observation circles within the plot area.

Treatments applied in the fall gave us excellent control of annual bluegrass when compared to the check plots (data not shown). The evaluation taken on 10/22 showed limited preemergence activity from PROGRASS, while all other treatments gave significant control when compared to check plots.

Spring treatments applied on 03/31/92 gave excellent control on the 04/23 evaluation with the low rate of BALAN being the only exception (Table 2). On the 06/01 evaluation, eight weeks after application, all herbicides were giving good control except RONSTAR, BALAN, and PROGRASS at the low rates. By the 06/22 only DIMENSION (G) at 0.38 lbs AI/A, the high rates of PRE-M and DACTHAL, and both rates of RONSTAR and BARRICADE provided significant control. In the last evaluation on 07/15 only the high rate of RONSTAR, PRE-M, and PROGRASS along with both rates of BARRICADE gave significant control.

Even though you may be successful in controlling annual bluegrass with a postemergence application you still have the viable seed within the soil to control. Again as we saw last year annual bluegrass continues to germinate throughout the season. As the activity of the preemergence herbicide decreases the potential for annual bluegrass germination increases. These studies show the importance of preemergence herbicides in an annual bluegrass management strategy. Additionally these studies demonstrate the need for split applications of a preemergence herbicide to achieve season long control.

Table 1. PROGRASS PLUS SPRING PREEMERGENCE

PREEMERGENCE**	YES		NO		YES		NO	
	% POA 05/06/92		% POA 05/19/92		% POA 06/22/92			
Progress 0.75 + 0.75	73	82	80	82	80	85		
Progress 1.50 + 1.50	7	62	18	77	40	75		
Progress 0.75 + 0.75 + 0.75	13	70	33	73	30	48		
Progress 1.50 + 1.50 + 1.50	0	22	0	27	17	53		
Preemergence	83	85	85	85	85	85		
Control	73	80	85	85	83	85		
LSD (P = 0.05)	16	16	12	12	20	20		
	% COVER 05/06/92		% COVER 05/19/92		% COVER 06/22/92			
Progress 0.75 + 0.75	84	99	95	100	100	100		
Progress 1.50 + 1.50	17	72	23	87	80	98		
Progress 0.75 + 0.75 + 0.75	47	87	72	95	97	99		
Progress 1.50 + 1.50 + 1.50	3	47	5	62	37	94		
Preemergence	100	100	100	100	100	100		
Control	100	100	100	100	100	100		
LSD (P = 0.05)	13	13	16	16	7	7		

Applied: *09/24/91

*10/16/91

*11/07/91

**04/06/92

Table 2. SPRING ANNUAL BLUEGRASS PREEMERGENCE TRIAL PERCENT CONTROL

<u>TREATMENT</u>	<u>FORMULATION</u>	<u>RATE lbs A/A</u>	<u>PERCENT CONTROL</u>				
			<u>04/23</u>	<u>05/13</u>	<u>06/01</u>	<u>06/22</u>	<u>07/15</u>
1 Control			0	0	0	0	0
2 Ronstar	2 G	2.00	100	100	67	57	12
3 Ronstar	2 G	4.00	100	100	100	91	52
4 Pre-M	60 WDG	3.00	100	100	100	77	66
5 Pre-M	60 WDG	2.00	100	100	100	0	41
6 Dimension	0.25 G	0.38	100	100	100	60	42
7 Dimension	0.25 G	0.25	100	92	100	0	15
8 Dimension	0.25 G	0.50	100	100	100	40	38
9 Dimension	1 EC	0.38	100	100	83	21	22
10 Dimension	1 EC	0.50	100	100	100	8	25
11 Balan	2.5 G	2.00	72	67	50	28	15
12 Balan	2.5 G	3.00	94	100	100	7	34
13 Barricade	65 WDG	0.50	95	100	100	51	84
14 Barricade	65 WDG	0.75	100	100	100	80	50
15 Lescosan	4 EC	12.50	100	100	89	33	17
16 Lescosan	4 EC	10.00	90	83	100	13	18
17 Dacthal	75 WP	10.50	97	100	100	26	20
18 Dacthal	75 WP	15.00	97	100	93	52	17
19 Prograss	1.5 EC	0.75	100	67	63	31	38
20 Prograss	1.5 EC	1.50	94	100	96	29	56
21 Team	2.0 G	1.50	88	100	96	28	13
LSD (P = 0.05)			19	26	37	40	44
Treated: '03/31/92							