

HERBICIDE AND PLANT GROWTH REGULATOR EFFECTS ON
OVERSEEDED CREEPING BENTGRASSM.G. Hendricks and B.E. Branham
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Annual bluegrass is a grass that has both desirable and undesirable characteristics. It is the undesirable characteristics of annual bluegrass which cause it to be considered a weed, with management practices geared towards its elimination. The elimination of annual bluegrass and the establishment of creeping bentgrass is often very difficult, in part due to the tremendous seed reservoir which is present in the soil. Overseeding is one method used to change the composition of annual bluegrass stands. The main problem encountered when overseeding into an annual bluegrass turf is the competition from the existing annual bluegrass.

Plant growth regulators used to reduce seedhead production in annual bluegrass have been shown to result in a reduction in annual bluegrass density. Herbicides with pre, post, or pre and post emergence activity have also been shown to reduce annual bluegrass density. The purpose of this study was to examine how different herbicides and plant growth regulators might be used to reduce annual bluegrass density which should lead to an increase in the establishment of overseeded creeping bentgrass.

Sixteen different chemicals or chemical combinations were applied at different rates and times in the fall of 1987 (Table 12). The chemicals tested were applied to an area which contained 95% or more annual bluegrass. On August 12, the area was vertical mowed in two directions, fertilized with starter fertilizer (12-12-12) at a rate of 1 lb N/1000 ft², overseeded by hand with 2 lb/1000 ft² Penncross creeping bentgrass seed, then dragged, rolled, and irrigated.

To evaluate the experiment, plant counts were taken on November 14, 1987 and June 23, 1988 using a grid constructed on a frame measuring 4 x 6 ft. and having 112 intersections. The plant beneath each intersection was examined and the percentage of creeping bentgrass was determined.

Fall counts indicate that treatment with Round-up and Round-up + Prograss resulted in 62 and 50% creeping bentgrass establishment, respectively (Table 12). Treatment with Embark and Embark + Prograss resulted in creeping bentgrass establishment ranging between 13 and 34%. Plant counts taken in summer of 1988 indicate that treatment with Round-up + Prograss resulted in 92% bentgrass establishment while Round-up alone had 57% bentgrass cover. Bentgrass establishment when treated with Embark alone ranged between 25 and 33%, but when combined with Prograss, bentgrass establishment ranged between 63 and 73%.

Treatment with Round-up and Embark reduces annual bluegrass density to varying degrees prior to overseeding, allowing for increased germination of creeping bentgrass. Treatment with Prograss following bentgrass establishment further weakens the annual bluegrass and prevents the establishment of new annual bluegrass seedlings from seed present in the soil, which also increases bentgrass establishment.

The use of chemicals to help in the establishment of overseeded creeping bentgrass does have drawbacks. Some of the chemicals also reduce the playing quality of the turf below acceptable levels. Treatment with Round-up resulted in reduced playing quality four to six weeks following overseeding. Prograss treatment may result in reduced density, and delayed green-up the following spring until the end of May or the beginning of June.

TABLE 12. Treatment, rate of application, date of application, and percent creeping bentgrass cover for the study of the effects of herbicides and plant growth regulators on creeping bentgrass establishment.

TREATMENT	RATE (lb/a)	DATE APPLIED	% BENTGRASS COVER	
			FALL	SUMMER
Round-up	1.0	7/30	63	57
Round-up + Prograss (6W)*	1.0 + (.75 + .75 ai)	7/30 + (9/29 + 10/27)	50	92
Embark	0.25 ai	8/10	13	25
Embark	0.38 ai	8/10	26	33
Embark	0.50 ai	8/10	18	31
Embark + Prograss (3W)	0.38 ai + (.25 + 1.0 ai)	8/10 + (9/9 + 10/6)	23	73
Embark + Prograss (3W)	0.38 ai + (.38 + .75 ai)	8/10 + (9/9 + 10/6)	22	63
Embark + Prograss (6W)	0.38 ai + (.75 + .75 ai)	8/10 + (9/29 + 10/27)	34	71
Prograss (4W)	(.38 + .75 ai)	(9/15 + 10/15)	7	26
Prograss (5W)	(.38 + .75 ai)	(9/21 + 10/19)	3	17
Prograss (6W)	(.75 + .75 ai)	(9/29 + 10/27)	29	29
Prograss (Dormant Seeded)	(.75 + .75 ai)	(9/15 + 10/15)	--	13
Prograss (Dormant Seeded)	(1.5 + 1.5 ai)	(9/15 + 10/15)	--	59
Cutless	1.0	7/28	8	15
Cutless + Prograss (6W)	1.0 ai + (.75 + .75 ai)	7/28 + (9/29 + 10/27)	2	41
No Chemical	-----	-----	5	16
LSD (0.05)			14	18

* 3W, 4W, 5W, and 6 W indicates first prograss application was made at 3, 4, 5, or 6 weeks after emergence.