

STOP 9

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Effects of Repeated Applications of Preemergence Herbicide on Desirable Turfgrass Species.

A study was initiated in 1964 to determine the effects of annual or biennial applications of eight preemergence herbicides on Kenblue and Merion Kentucky bluegrass and Pennlawn red fescue. The results have varied from year to year depending upon prevailing weather conditions and associated environmental stresses. Several trends have developed, however, which provide specific indications of the effects of these herbicides. Bandane has been moderately injurious to all three turfgrasses resulting in substantial thinning of the turf (Table 10), and severe stripe smut infestations on the Merion Kentucky bluegrass in the spring of 1970 and 1971. The red fescue plots treated with yearly applications of bandane were the most affected of the three turfgrasses as evidenced by the extensive transition from red fescue to Kentucky bluegrass in these plots. Red fescue was also significantly injured by DCPA, benefin, siduron and the arsenates.

Evaluations in 1967 and 1969 revealed significant injury from bensulide on the two Kentucky bluegrasses but this has largely disappeared in recent years.

Investigations are currently underway in which other effects of these herbicides will be ascertained. Root growth, thatch accumulation, carbohydrate reserves, and clipping weights are being measured to more accurately determine the effects of preemergence herbicides on these turfgrasses.

TABLE 10. EFFECTS OF REPEATED APPLICATIONS OF HERBICIDES ON THE QUALITY OF THREE TURFGRASSES. (Rating System: 1 = no effect, 9 = complete kill).

Trmt. No. *	Herbicide Treatment	Application Rate (lb/A)	Turfgrasses		
			Common Kentucky Bluegrass	Merion Kentucky Bluegrass	Pennlawn Red Fescue
1	DCPA	10	1.3	1.3	3.0
2	DCPA	10	1.3	1.0	2.3
3	Lead arsenate	610	1.7	1.0	3.3
4	Lead arsenate	610	1.3	1.0	2.3
5	Bandane	40	3.3	3.7	4.0
6	Bandane	40	1.3	1.3	2.7
7	Terbutal	10	1.3	1.0	1.7
8	Terbutal	10	1.3	1.0	1.7
9	Bensulide	20	2.0	2.0	1.7
10	Bensulide	20	1.7	1.0	1.3
11	Benefin	1.5	1.7	1.0	1.3
12	Benefin	1.5	1.3	1.0	3.0
13	Calcium arsenate	610	1.3	1.0	2.3
14	Calcium arsenate	610	1.3	1.0	2.0
15	Siduron	10	1.0	1.0	2.0
16	Siduron	10	1.0	1.0	2.0

*All odd numbers treated yearly while all even numbers were treated every second year.