STOP 11

USING PLANT GROWTH REGULATORS ON TURF

M. McElroy, P. E. Rieke and S. McBurney

One of the major impacts in turf management is associated with mowing. Increasing equipment and labor costs have become significant factors in increasing the interest in the use of plant growth regulators (PGR's) on turf.

There has been interest in the use of PGR's for several years but with the rising costs there are several new chemicals now being tested. Most use has centered on turfs which receive little traffic or where maintenance costs warrant their use. Examples are roadsides, limited use parks and grounds and for growth control around trees, buildings and fence rows.

Currently, we have a study in cooperation with the Michigan State Department of Highways and Transportation with emphasis on chemical management of roadside grasses. Both foliar and soil active chemicals are under study which have varying effects on inhibition of vegetative growth or seedhead development. Seven compounds are being evaluated: Embark (3M); MBR-18337-Experimental (3M); PP-333 (ICI Americas); Eptam (Stauffer); EL-500 (Eli Lilly); Glean (DuPont); and MON 4621 (Monsanto).

Several studies on highway sites have been initiated, some beginning in April, 1982. Preliminary data indicate good potential for growth regulation on highway grasses with certain compounds. But response is highly dependent on the grass species present. Timing of application is crucial for effective control. We are also evaluating effects of interactive effects when applying combinations of chemicals.

A study was initiated on Enmundi Kentucky bluegrass at the Hancock Turfgrass Research Center. Data on relative growth 40 days after treatment are given in Table 1. All compounds gave significant reduction in growth. Some compounds cause the grass to be greener. No significant discoloration resulted from treatments.

Dry clipping weights taken 28 days after treatment are given in Table 1 as well. Again, significant growth regulation was apparent.

Plant growth regulation of turfgrasses is quickly becoming more reliable and will surely be included in the management of many turfs. Much more research is needed on the effects of new chemicals on a range of plant species (including weeds), appropriate rates and timing of applications, effects of combining materials and economic considerations.

Table 1. Effect of plant growth regulators applied to Enmundi Kentucky bluegrass on July 15, 1982.

Treatment		Relative regrowth	Dry clipping wt
Chemical	Rate, lb/A	(9=highest; 1-none)	gm
Check	-	9.0 A	124 A
EL-500	3/4	3.2 CD	69 BCDE
EL-500	1 1/2	3.7 CD	81 BC
Embark	1/16	2.2 D	43 E
Embark	1/8	2.2 D	52 DE
PP-333	1	2.2 D	71 BCD
PP-333	2	2.0 D	70 BCD
Embark PP-333	1/16 1/2	2.2 D	66 DCDE
Embark EL-500	1/16 3/4	1.7 D	56 CDE