STOP: 7

Evaluation of Chemical Growth Regulators

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An effective chemical growth regulator on turfgrasses would result in great turfgrass maintenance costs savings for the professional turfgrass manager as well as provide additional leisure time for the homeowner.

The problem with developing growth retardants for turfgrasses is that the turfgrass community relies on continuous regenerations of shoots and roots, especially under excessive wear conditions. The loss of vegetative recuperative potential and root growth is the most serious problem associated with chemical growth inhibition. Ideally, a growth retardant must be specific for the inhibition of vertical shoot growth while allowing root and rhizome growth to continue.

Discoloration also continues to be a problem. Most of the growth regulators have at least some yellowing effect on the leaf tissue, usually resulting in an objectionable loss of turfgrass quality.

Tests over the past years indicate that timing of application is critical in the effective use of chemical growth retardants on turfgrasses. It appears that timing the application as soon as turfgrass shoot growth reaches 2-2 1/2 inches following the first mowing in the spring is the best time.

In this investigation, an experimental growth regulator, CME 10951 was evaluated with Maintain, Ethrel, and Embark. The treatments were applied either with a hand held, single nozzle sprayer at 30 p.s.i. or by a special dribble bar attachment to a sprinkler can for small lawns, narrow paths, or areas where drift must be kept to a minimum.

The results indicate that CME 10951 is excessively toxic to Merion Kentucky bluegrass at recommended rates of application. It was effective in retarding growth, eliminating dandelions and in reducing seed head numbers.

Maintain exhibited less discoloration than CME 10951 but was not as effective in growth, seed head, or dandelion control. Ethrel exhibited slight discoloration, quite good vegetative growth and dandelion control, but poor seed head retardation.

Embark (MBR-12325) continues to be the best growth regulator in all areas except weed control. Applications of broadleaf weed control chemicals should be considered when using this chemical.

The Effect of Chemical Growth Retardants on Merion Kentucky Bluegrass

Treatments, May 6, 1977			Quality rating (1-Best; 9-Poorest) June 14, 1977			
	Chemical	Pounds A.I. Per Acre	Color	Seed Head Control	Dandelion Control	Vegetative Growth Control
1.	CME 10951-P	X (S)*	6.3	4.0	1.0	3.7
2.	CME 10951-P	2X (S)	8.3	2.3	1.3	3.0
3.	CME 10951-P	X (D)	7.0	3.0	1.3	3.3
4.	Maintain	2.0 (S)	3.7	5.0	3.0	5.3
5.	Maintain	2.0 (D)	4.3	6.0	2.0	6.0
6.	Ethrel	4.0 (S)	5.0	6.7	3.7	4.3
7.	Emgark	0.25 (S)	4.0	1.3	5.3	3.3
8.	Check	------	3.0	8.0	5.7	7.3

*Treatment application was by a hand held, single nozzle sprayer at 30 p.s.i. (S) or by Cela Merck Garten gieber dribble bar (D).