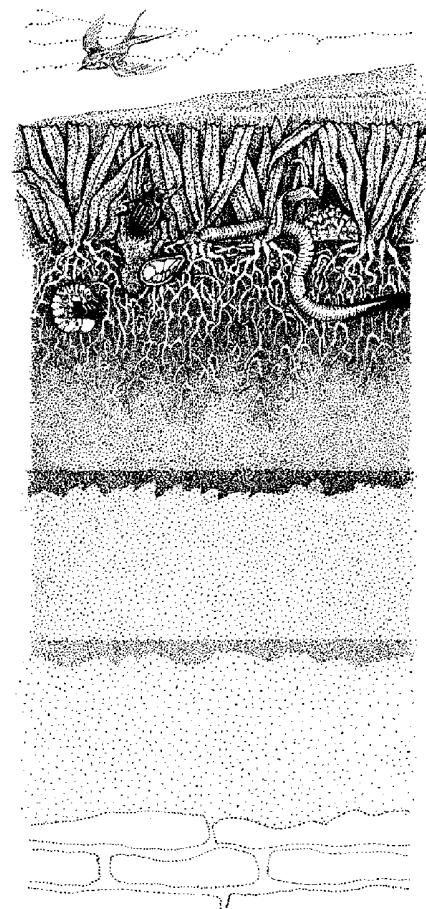


CUTT

Fall 1996 • Volume Seven • Number Three • A Publication of Cornell Cooperative Extension



The Influence of Plant Growth Regulators on Golf Course Turf

Plant growth regulator (PGR) technology is poorly understood by a majority of golf turf managers. PGR's are touted as tools for reducing mowing, controlling annual bluegrass, and increasing green speed. PGR's regulate growth by inhibiting cell division or cell elongation. The PGR's recommended for use on high quality (or Class A type) turf generally inhibit cell elongation for a period of time (weeks).

The process of regulating cell elongation includes the synthesis of giberillic acid (GA). Each PGR effects the synthesis differently. For example, studies have shown that paclobutrazol (Turf Enhancer) and flurprimidol (Cutless) block GA synthesis early in the pathway. This early blockage prevents the creation of the 50 or so GA's necessary for growth. This indiscriminate blockage can result in severe injury under stressful conditions. Also, this explains the morphological effects of Turf Enhancer with regard to widening the blades of bentgrass under regulation. Trinexepac (Primo) blocks the pathway at the very end after the 50 or so GA's are produced but before the important GA₁, can trigger elongation. In essence, Primo is less physiologically disruptive. ■

PGR's for mowing management could extend the mowing intervals and allow for increased flexibility with staff time. Also, it could reduce wear and tear on mowers, reduce energy consumption and clipping problems.

This study is in the 3rd year. The first two seasons investigated clipping reduction and vi-

sual quality. Data from these years indicate that regulation greater than 40% significantly reduces turf quality below an acceptable level. Assuming this information, the next two years of research will address morphological and func-

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