

Research Topic: A Moderately Aggressive Annual Bluegrass (*Poa annua*) Reduction Strategy on a Putting Green using Plant Growth Regulators (PGR's) and Foliar Fertilizers. McDonald, S., Primary Investigator. Wedgewood CC, Hellertown, PA

Paclobutrazol is an early stage gibberellic acid (GA) biosynthesis inhibitor (plant growth regulator/PGR), which differentially suppresses the growth of *Poa annua* compared to creeping bentgrass (*Agrostis stoloniferous*). Paclobutrazol is often used to reduce *Poa annua* populations while providing general growth regulation benefits, including increased lateral turfgrass growth, improved turfgrass quality, and abiotic stress tolerance. An integrated approach is often required to successfully increase the competitive advantage of one turf species over another, including the use of cultural practices such as the timing and source of fertilization. Results can vary, however, because of the high degree of environmental variability including, but not limited to, various root-zone chemical and physical properties. **A two (2) year study was commenced with the objective of determining the effect of foliar fertilizers containing nitrogen (N), iron (Fe) and other micronutrients (Mn and Zn) applied in combination with different rates of paclobutrazol (Trimmit) on annual bluegrass (*Poa annua*) management (reduction) and subsequent creeping bentgrass competition, color, and quality.** The results of year one (1) indicate that tank mixing foliar fertilizers with Trimmit (16 fl. oz./M) did not compromise the efficacy of the paclobutrazol to decrease the population of healthy *Poa annua* (Figure 1). The untreated check and Primo MAXX treated turf contained the highest percentage of healthy *Poa annua*. Trimmit applied at both the 8 and 16 fl. oz. rate(s) resulted in unacceptable turfgrass color (≥ 6.5), while turf treated with the higher rate of Trimmit (16 fl. oz./M) exhibited the most phytotoxicity (Figure 2). Trimmit (16 fl. oz./M) applied in combination with Gary's Green Ultra and Microburst resulted in the best turf color on a consistent bases, while turf treated with Primo MAXX also provide excellent turf color, but in particular during the latter half of the study (Aug.-Oct.) (Figure 2). **Initial results of this study suggest that combining paclobutrazol (Trimmit) with Grigg Brothers foliar fertilizers will result in excellent *Poa annua* reduction while providing optimum turfgrass quality and color. The use of both adequate nitrogen (N) (0.16 lb N/M) and an efficient supply of micronutrients (Fe, Mn, and Zn) seem important to limiting phytotoxicity associated with the use of 16 fl. oz./M Trimmit on a putting green^{**}. Firm conclusions regarding the success of these treatments regarding the percent (%) *Poa annua* reduction cannot be made until the conclusion of this study in the fall of 2009.**

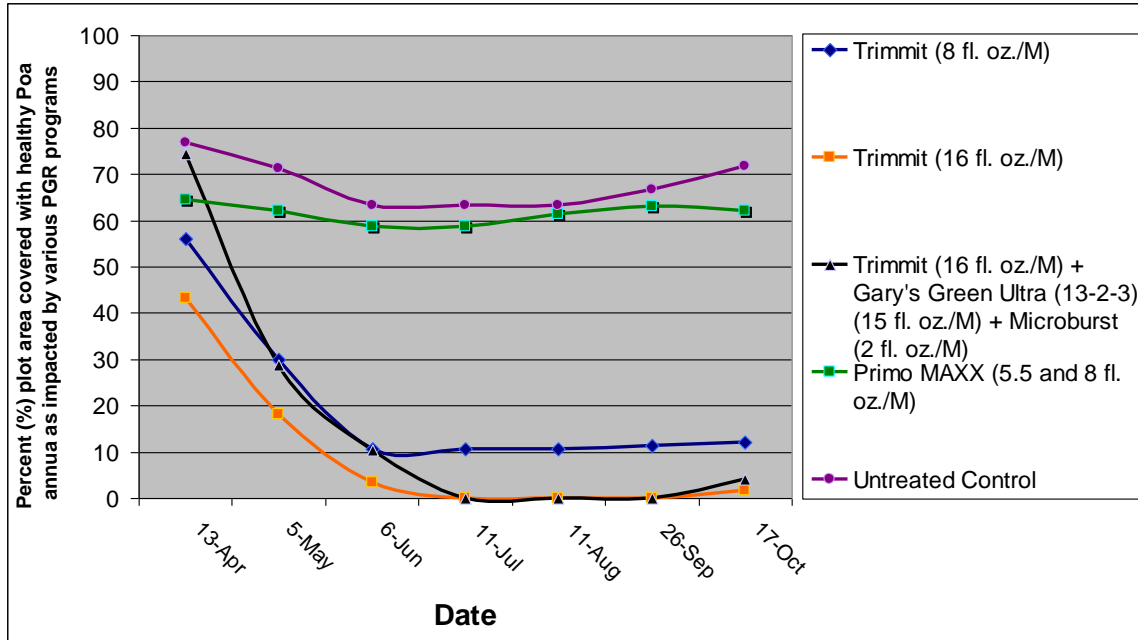


Figure 1. Percent (%) plot area covered with healthy *Poa annua* as impacted by plant growth regulator (PGR) and foliar fertilizer programs

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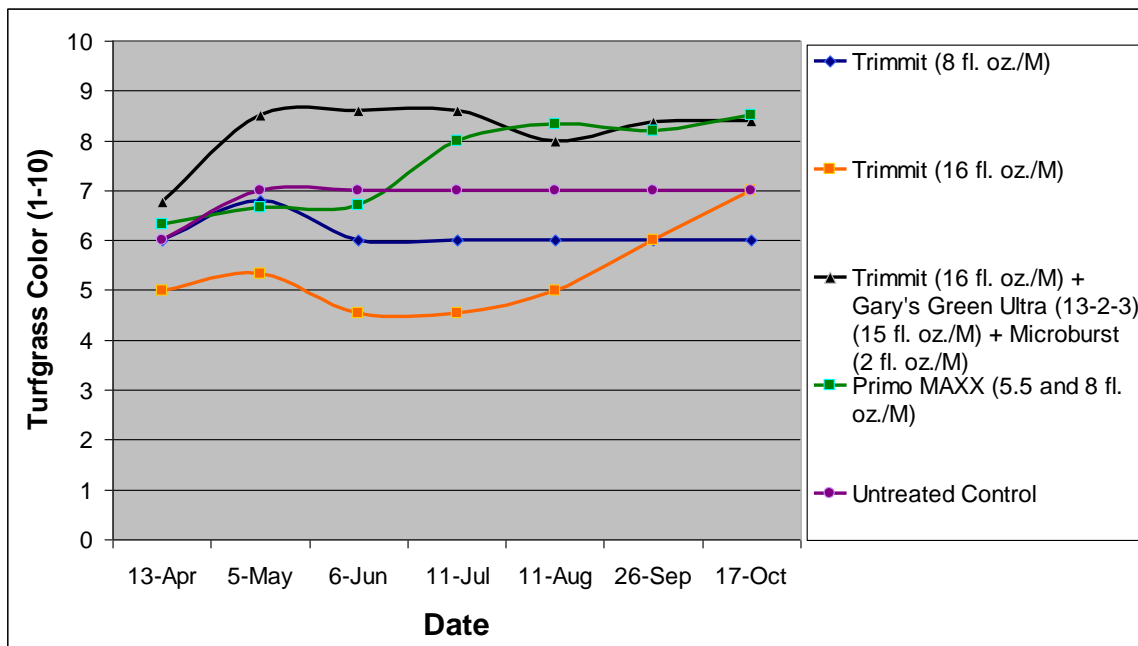


Figure 2. Turfgrass color as impacted by plant growth regulators (PGR) and foliar fertilizer programs

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