

USING PGR'S IN THE LANDSCAPE

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Plant growth regulators (PGR's) have been used on turfgrasses for over 20 years as chemical mowing agents. The idea of developing a chemical that reduces grass growth, and thus mowing, seems like a million dollar idea. What homeowner wouldn't want a way to reduce the drudgery of mowing? However, after 20 years of research and experimentation, there is little use of these products in the homeowner marketplace. Interestingly, there is significant use of PGR's in the golf course market. Why the golf market and not the homeowner market?

Several problems have kept PGR's out of the homeowner marketplace. First, compared to golf courses, homeowners don't mow that frequently. Thus reducing growth by 33% saves at best, one mowing in three weeks. Do the savings in labor cost exceed the cost of PGR application? Usually the answer is no. In the golf course market, where 20 acres of fairways may be mowed 3 times in one week, a PGR application may make sense, or cents, by saving 1 mowing/week. Most current PGR's applied at label rates will give 4-6 weeks of 20-50% growth suppression. Thus, a golf course superintendent may save 4 mowings in one month while a homeowner may save 1 or 2 mowings.

Why not use PGR's at higher rates to achieve longer or more significant growth regulation? This can and has been done but the results are usually less than satisfactory. Turfgrasses look good because the leaves are continually being replaced, older leaves die and younger ones take their place. The turfgrass community looks good even though individual plants are losing leaves. When a PGR is applied, the growth process slows and leaves stay on the plant longer. The leaves become diseased, the cut ends turn brown, or a variety of other insults occur which reduce the visual quality of the stand. If a PGR is applied at a rate sufficient to totally stop turfgrass growth for a 2-3 week period, turf quality will rapidly decline during this period. Thus to get significant mowing reduction, i.e. mowing once a month instead of 4 times, a high rate of PGR is needed and the reduction in turf quality is usually unacceptable. This relationship is shown in Figure 1 where turf quality is plotted against percent mowing reduction. These data came from several different PGR's and show that an increase in growth reduction leads to a decrease in turf visual quality. In our trials, if overall growth suppression is between 20 and 30 percent, then turf quality remains equal to or sometimes exceeds that of the untreated control. However as stated above, this level of growth reduction will save the typical homeowner 1 -2 mowings during the period of growth suppression. This level of labor savings is usually not much greater than the cost of the PGR application.

Another concern with PGR's is the application timing. Cool season grasses put on most of their vertical leaf growth in the cool temperatures of the spring. In order to suppress this growth, applications need to be made in a fairly short window of time. In a lawn care setting, it may not be feasible to treat very many customers at the ideal times. Finally, uniform application can be a big problem, leading to an uneven response. Yards with sidewalks, driveways, trees, sandboxes, swing sets, etc. are difficult sites to make a uniform application.

Knowing these limitations, are there situations where PGR's could be incorporated into a landscape or lawn care setting? I believe some companies could use PGR's effectively to achieve labor savings. Those companies that provide a full-service operation; could benefit from using a PGR.

A full-service lawn maintenance company provides total landscape management often including mowing, fertilization, weed control, and even irrigation management. The spring of the year is often an extraordinarily busy time with mowing required as often as twice per week; plus fertilizer and herbicide applications need to be made. Mowing frequency is at its highest while many other tasks need to be done. A well timed application of a fertilizer, herbicide, and PGR may provide for high-quality turf with a reduced mowing requirement that results in direct labor savings, typically a reduction in overtime pay. Often in the spring, mowing even once per week can result

in clippings that are unsightly because of their length and have the potential to smother the turf if not removed. PGR's can be used to reduce the surge growth seen in the spring and redistribute labor to the myriad of other tasks that must be attended to in the spring.

Therefore, PGR's are not, in their present form, a panacea for the homeowner or lawn care operator. In limited settings, their use may make sense economically. Lawn and landscape managers are urged to try these products with caution because unacceptable results can occur particularly if the turf is under drought stress at the time of application. The homeowner dream of not having to mow the lawn remains just that.

Figure 1. Relationship of mowing reduction to turf quality

