

# TURFGRASS PGRS NEAR WIDESPREAD USE

Turfgrass plant growth regulators (PGRs) are in theory a great idea. They may perform well in the laboratory, but when put to the test in commercial landscape maintenance, they can become unpredictable and produce undesirable results, especially in fine turf situations.

PGRs have been around for at least two decades, either under testing or as registered products.

Most of the registered materials are used in niche markets or for large low-maintenance areas like roadsides, airfields, levees, stream banks and golf course roughs.

In reality commercial PGRs have not gained truly widespread use in fine turf maintenance.

But, that may be changing with a new class of PGR chemistry. The first one to reach the commercial market is likely to be a product from Ciba-Geigy, Primo. What makes it different from the rest is that it is foliar absorbed (other PGRs are activated through the soil).

"There has been a lot of interest in PGRs over the years and some of them have enjoyed what I would call specialty market success, but for the general landscape market there has not been a truly effective, reliable fine turf plant growth regulator for general use," says Dave Hanson of San Jose, Calif., manager of technical support for Environmental Care's maintenance operations in seven states.

"Most turfgrass stands are a mixture of grasses and weeds, and PGRs react differently on different grass and weed species. The result is uneven response," says Hanson, former University of California extension ornamental horticulture farm advisor and a 24-year veteran of the green industry.

"There has been a lot of promise and a lot of fascination with PGRs over the years, but all of those who have worked with these compounds agree that the problem has been that every conceivable parameter of a plant's growth affects the way PGRs work...age of the plant, cultivar, temperature, soil type and every other thing you can imagine. Most pesticide products are one dimensional in their effect. PGRs are not," says Bruce Kidd, Western area turf and ornamental specialist for DowElanco based in Clovis, Calif.

DowElanco markets a PGR, Cutless, which Kidd says performs "superbly" on cool-season grasses in the Northeast. "It results in excellent quality bentgrass and reduces poa annua, but it fails to produce the same results on most warm-season grasses, and we really do not know why. Rather than provide good plant growth regulation and improved plant quality, you get burn."

Plant growth regulators work best where environmental conditions can be precisely controlled, like a greenhouse or perhaps on a golf course with a mono-stand of turfgrass.

"PGRs have looked good in certain niche situations, but none has been able to gain a broad market," says Kidd, who is a former commercial landscape maintenance contractor.

Kidd admits Primo is a "different kind of plant growth regulator" because of its foliar absorption actions. "Primo has looked good—probably better than most other PGRs in university tests. The real challenge will come when it is put under commercial customer-use conditions," he says.

Ciba-Geigy is expecting federal Environmental Protection Agency approval for unrestricted use this year. The company

hopes a California label will follow. It has been tested under an Experimental Use Permit.

Researchers have found Primo use reduces biomass 40 to 50 percent over a six or seven week period and enhances root development of the turfgrass without any adverse effects.

Hanson has been testing it and other new PGRs for several years.

"There is not as much discoloration and injury with this new chemistry, and results are more consistent," says Hanson. "Not only has the chemistry evolved, but I think the industry is a little more sophisticated in doing a better job of using these new products. I think we have reached the next level in the evolution of PGRs.

"We are reaching the threshold of widespread PGR use on turfgrass," he predicts.

Primo, says Hanson, has a broad spectrum adaptability across both warm- and cool season grasses with relatively minor discoloration. "We are working on making that, which is always a prime concern when you look at PGRs."

Primo's activity on the plant can be reversed with heavy water and fertilizer use.

That masking effort and the countless hours Hanson puts in evaluating PGRs is justified because of the tremendous economic benefits these products offer.

"PGRs should be viewed as labor-saving tools just like more efficient mowers, better edgers or controlled release fertilizers. There are so many places where there are intensive turfgrass maintenance practices—lawn edging, edging around headstones in cemeteries, large expanses of fairly uniform, rapidly growing

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turf that is mowed quite frequently in the summer and objectionable seed head production—where these products could save a tremendous amount of labor by slowing down turf vertical and lateral growth,” Hanson says.

Besides labor, there are also the issues of increasing dump fees for clippings, wear and tear on equipment both to mow and edge and haul clippings to the landfills.

Despite somewhat less than resounding successes in developing PGRs, major chemical companies continue to research the subject. “Some very big companies like Scott, DowElanco, CibaGeigy and others continue to believe there is a big commercial potential in PGRs, and they are correct,” says Hanson. “Those of us in the commercial landscape maintenance business continue to face escalating costs and increasing competition while being challenged by our customers to produce a high quality product at lower costs. We must continue exploring the area of plant growth regulators to gain the benefits they offer.”

Hanson says today’s new generation of PGRs has an average effectiveness period of six weeks, “but that does not mean you can stop mowing for six weeks. It means you may be able to skip every other mowing or mow every three weeks.”

Hanson warns that use of a turfgrass plant growth regulator puts the plants under a certain amount of stress and inappropriate sequential applications could well have an adverse effect. “It’s critical to know the product and site you are working with.

“The cardinal sin in using these compounds is applying them when a plant is under stress. One of the problems we had in the early days in using PGRs on bluegrass in the San Francisco Bay area was that when you used a PGR on stressed turf, it resulted in a rust infestation, and the grass turned orange.”

While the new chemistry offers more hope for a widely adaptable PGR, Hanson says they still should be used “only at the right place at the right time.”

“And, evaluation must include cost. There must be a cost-benefit study on each site. It may not be financially feasible to use PGRs on some sites. It may be cheaper to mow more often.”

Article seen in Western Turf Management, February 1993 by Harry Cline.

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