ance. The hoped advantages of growth regulators are:

- Reducing growth—especially sprout growth—following extensive trimming. This extends the trimming cycle which leads to reduced maintenance expenses.
- Reducing the amount of wound-

ing due to repeated trimming. It is es-
timated that the average tree trim exposes about 400 sq. in. of cut sur-
face. This stresses the tree due to the energy needed to heal this area, and it exposes a large area to disease organ-
isms.
- Improving stress resistance by re-
ducing surface area exposed to water loss and reducing the energy wasted on excess regrowth.
- Allowing normally large trees to be planted in smaller spaces. In many cases the appearance of the tree is im-
proved by using a growth regulator. That’s due to a reduction in sprout

PGRs: a tool to manage mowing

It may seem that the ideal growth reg-
ulator would stop growth completely, making mowing unnecessary. But that is an unrealistic expectation. Turfgrass are constantly subjected to environmental stresses such as traffic, disease, insects and pollution. The only way grasses have to repair the damage from these stresses is by, growing and replacing the damaged shoots. Therefore, some growth must be allowed.

Growth regulators should be thought of as a tool to help manage the mowing schedule, not to replace mowing completely.

There are two major potential uses for growth regulators in turf maintenance. One is control of low-
maintenance, low-quality turf such as along roadsides, steep slopes, fencerows, ditches, and stream banks. The second is in difficult-to-mow areas of higher quality turf.

Another possible use is on more formal, high-quality turf where mowing is continued, but a growth regulator is applied at a low rate to reduce some mowing. Currently, this application for growth regu-
lators is highly limited, probably because most lawns are exposed to injury by foot traffic and that growth is needed in order for the grass to rejuvenate itself.

Types of PGRs

The greatest potential use of turfgrass growth regulators for general landscape management is for difficult-to-mow areas such as steep slopes, along fences, or around obstacles.

Some specific characteristics of turfgrass growth regulators are as follows:

- Maleic hydrazide (Royal Slo-
Gro, Drexal Retard): first growth regulator available for turf; for cool-
season grasses only; inhibits growth by suppressing cell division in the shoots, roots, and buds; suppresses root and rhizome development; seedhead formation inhibited if application is timed properly; best application time is in spring when

forsythia and dandelions are in full bloom; use limited to low mainte-
nance areas due to possible phyto-
toxicity and excessive growth inhibition; not recommended for home lawns except possibly for edge treatments along walls and around trees.

- Mefluidide (Embark): newer growth regulator for both cool- and warm-season grasses; considered a standard of the industry for grass control; suppresses vegetative growth and seedhead production in plant areas; may be used to arrest seedhead development of Poa an-
nu; not readily translocated; does not restrict roots or rhizomes; low phytotoxicity potential; good product for general landscape mainte-
nance work; should still be considered for use only on low-maintenance, hard-to-mow and trim areas.

- Amidochlor (Limit): cool-sea-
son grasses only; suppresses shoot growth, inhibits seedhead forma-
tion; needs rainfall or irrigation within three to five days of applica-
tion; does not suppress root develop-
ment; features low phytotoxicity and tolerance of application overlap.

- EPTC (Shortstop): new growth regulator recommended for tall fes-
cue; can cause severe phytotoxicity on finer turf; root-absorbed; sup-
presses both shoot growth and seed-
head formation; also provides some broadleaf weed suppression.

- Chlorfluorenol (Maintain
CF-125): cool-season grasses; sup-
presses shoot growth, inhibits seed-
head formation; also controls some broadleaf weeds.

- Paclobutrazol (Clipper, O.M.
Scott’s TGR): new growth regulator for both cool- and warm-season grasses; good residual control of shoot growth, but does not suppress seedheads; foliar and root absorbed; does not restrict roots or rhizomes; also provides some broadleaf weed suppression; will gradually reduce Poa annua in perennial turfs; yel-
lowing of leaf blade tips four to six weeks after application possible; Scott’s TGR is a granular formul-
ation, which also provides nitrogen fertilization.

- Flurprimidol (Cutless): very new growth regulator, not yet available commercially; effects on tur-
grass very similar paclobutrazol.

In general, plant growth regu-
lators can be helpful in managing turfgrasses, but they should be used with caution and should be selected carefully to match the situation in-
volved. They are still not recom-
mended for high quality turf situations, except for edging and difficult-to-mow areas. Plant growth regulators inhibit the re-
newal process of grass plants. This can lead to increased disease, in-
sect, and traffic problems and result in lower turf density.

—Banko and Stefani