

GreenSmart

a newsletter for arborists

Reducing Drought Stress for Your Client's Trees

ShortStop® Plant Growth Regulator for Trees can be effectively used by arborists to reduce the stress in trees caused by drought conditions. Research has shown that when treated by Paclobutrazol (ShortStop® TGR), trees show more drought tolerance, fungal & bacterial resistance, less pollution sensitivity, and appear a healthier green.¹ Paclobutrazol (PBZ) increases the abscisic acid in the tree, while blocking the production of the growth hormone, gibberellin. The reduction of gibberellin slows branch growth and the increased abscisic acid has a beneficial effect on the tree's ability to survive a water shortage.

Indications of drought stress include wilting, cupped leaves, dead or dying leads in the tree crown, premature fall coloration in leaves, and early leaf drop. PBZ promotes smaller stomata, thicker leaf cuticle, and enhanced fine root hairs.

For the Arborist:

"This means we can take an active role in pre-treating our clients most valued trees before consecutive dry spells can create excessive damage."

- Mark Mann, CEO -PGMS

These improvements in treated plants prevent excess water loss during transpiration.² A study in the Journal of Arboriculture verified that the efficacy of PBZ applications were not adversely affected during or after a drought.³ Arborists can apply ShortStop® Plant Growth Regulator for Trees by basal drench or soil injection. The application should be



evenly distributed and can be made any time of the year (except when soil is frozen or in standing water). The proper rates can be determined from the arborist rate charts provided by your distributor.

¹ Chaney, W.R., Growth Retardants: A Promising Tool for Managing Urban Trees, FNR-252-W Purdue Extension Publications, Sept. 2005.

² Poole, R.T. and Conover, C.A., Water Use and Growth of Eight Foliage Plants Influenced by Paclobutrazol, CFREC-A Research Projects (RH-92-23), University of Florida, 1992.

³ Groninger, J.W. and Seiler, J.R., Soil Texture and Moisture Availability Impacts on the Efficacy of Soil-Applied Paclobutrazol, JOA 23(3): May 1997.

ShortStop®

TGR

everything you've come to expect from a TGR

- 22.3% active ingredient; *Paclobutrazol*
- much lower price
- higher percent purity of active ingredient
- same growth control & benefits
- less residue & better distribution
- better application rates
- more refined & uniform

"I was amazed..."

In the fall of 1999, at the end of two consecutive drought seasons, I was observing a test plot I had begun in 1989 with approximately fifty (50) Little Leaf Lindens in South Bend, Indiana using a treatment of Paclobutrazol. I was amazed, it looked like two different species of trees had been planted along the street on each side. The leaves on the trees that were left as controls were yellowing and dropping early from drought stress, and the treated trees looked normal, with dark green leaves showing no sign of stress. The next year (2000), I invited Purdue University to join me in an air root excavation to compare the root systems of the treated and untreated trees. The most exciting part of this unexpected benefit was that the growth control had diminished after 1993 but the physiological changes remained, particularly the enhanced root hair growth, and it was still helping to make these Linden trees strong and healthy, even in a less than adequate environment.

Mark Mann, CEO -PGMS

For more information or to order ShortStop® Plant Growth Regulator for Trees, please contact:

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