

## Influence of Early Harvest PGR on the Growth of Five Woody Ornamental Species<sup>®</sup>

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### INTRODUCTION

Decline of container-grown ornamentals during the hottest months of summer is a common problem for nurserymen throughout the United States. When roots are killed from prolonged exposure to supraoptimal root-zone temperatures, growth ceases and the production of naturally-occurring plant hormones also decreases. Supplemental application of plant hormones may be beneficial during stressful periods of plant growth in container nurseries.

Numerous biostimulants (non-nutritional growth enhancers) are available today and these products have been useful for decreasing summer decline in various cool-season turfgrasses. Claims made by companies producing plant biostimulants include enhanced root growth, improved stress tolerance, decreased senescence of plant tissue, improved tillering of grasses, increased nutrient translocation, ability to reduce pesticide applications, and improved efficient use of applied nutrients. Early Harvest PGR (Griffin LLC, Valdosta, GA) is a commercial product labeled for use on vegetables, fruit crops, agronomic crops, rice, turfgrass, and bedding plants.

### MATERIALS AND METHODS

A study was conducted with Early Harvest PGR (EH), a product which contains cytokinins, gibberellic acid, and indole-3-butyric acid, to determine if the product would improve the growth of five woody ornamental species that typically decline during the summer months in south Georgia nurseries. Species used were *Cotoneaster dammeri* Schneid. 'Coral Beauty', *C. salicifolius* Franch. 'Green Carpet', *Spiraea japonica* L. 'Shirobana', *Thuja occidentalis* L. 'Little Giant', and *Weigela* 'Minuet'. Plants were grown outdoors in #1 containers (3.8 liter) on black woven ground cloth at the Coastal Plain Station in Tifton, Georgia. Plants were spaced 30 cm (12 inch) on center and were topdressed with 20 g (0.7 oz) of Osmocote Plus 15N-9P-12K (8-9 month formula; The Scotts Company, Marysville, Ohio). All plants were pruned uniformly to the edge of the container and a height of 10 cm (4 inch) at the initiation of the study. Plants were irrigated as needed using solid-set sprinklers at the rate of 0.9 cm (about 0.4 inches) per day.

The treatments (control, 1.5 ml, and 3.0 ml of EH per 1125 ml water) were applied every 2 weeks from mid-June until mid-September 1999 as a foliar drench such that each plant received ~45 ml (1.5 oz) of solution. Sil-Energy organosilicone surfactant (Brewer International, Vero Beach, Florida) was added at 0.1% to improve foliar uptake of EH.

### RESULTS AND DISCUSSION

Treatment of both *Cotoneaster* species and *Thuja* with Early Harvest PGR had little or no influence on plant growth. The low rate of EH increased shoot dry mass of *Weigela*

and the plant quality ratings for *Weigela* and *Spiraea*. Percent root coverage was greatest for *Weigela* at the lowest rate of EH application. The high rate of EH was generally detrimental to plant growth. These results indicate that treatment of container-grown woody ornamentals with EH is both species and rate dependant. Further work is needed before recommendations can be made for the use of EH on woody nursery crops to alleviate problems associated with high summer temperatures.

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## Evaluation of Ornamental Grasses in South Georgia®

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### INTRODUCTION

Ornamental grasses continue to increase in popularity in the southeastern United States. Grasses offer variation in plant texture, form, color, and seasonal interest for homeowners and landscapers.

NESPAL is an acronym for the National Environmentally Sound Production Agriculture Laboratory located at the Coastal Plain Station in Tifton, Georgia (USDA Zone 8A). Unique aspects of the NESPAL complex are the native plant community based design and the use of environmentally sound landscaping practices. The grounds are also being used as a test site for landscape plant establishment and adaptability evaluations. Tifton averages about 100 days per year at or above 32°C (90°F).

### MATERIALS AND METHODS

An experimental planting was established at the NESPAL site which is approximately 9 m × 16 m (30 ft × 60 ft) and between an asphalt parking lot and a west-facing wall. The original soil was a Tifton loamy sand, however, most of the topsoil was removed during construction leaving the "B" horizon for landscaping purposes. During fall of 1998, approximately 8 cm (3 inches) of a mixture of composted dairy waste and peanut shell bedding was applied. In February 1999 another 10 cm (4 inch) of cotton gin compost was spread over the area and incorporated to a depth of 15 cm (6 inches).

Well-rooted container-grown liners of 23 different taxa of commercially available ornamental grasses were planted on 30 April 1999. Selections used were *Andropogon gerardii*, *A. glomeratus*, *A. ternarius*, *A. virginicus*, *Calamagrostis × acutiflora* 'Karl Foerster', *Chasmanthium latifolium*, *Eragrostis curvula*, *E. spectabilis*, *Festuca glauca* 'Elijah Blue', *Miscanthus sinensis* 'Adagio', *M. sinensis* 'Morning Light', *Muhlenbergia capillaris*, *Panicum virgatum* 'Cloud Nine', *P. virgatum* 'Haense Herms', *P. virgatum* 'Heavy Metal', *P. virgatum* 'Prairie Sky', *P. virgatum* 'Rotstrahlbusch', *Pennisetum alopecuroides* 'Hameln', *P. alopecuroides* 'Moudry', *Saccharum ravennae*, *Schizachyrium scoparium*, *S. scoparium* 'The Blues', and *Sorghastrum avenaceum* 'Sioux Blue' (*S. nutans* 'Sioux Blue'). The area was mulched with a 8-cm (3-inch) layer of mixed wood chips and was watered as needed for the first month, periodically thereafter.