

Special Report: # _____ : Production Technology

Taming the White Dragon

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BACKGROUND

The stunning white inflorescences of *Globba magnifica* 'White Dragon' are borne on stems ranging from 20 to 30 inches tall. Potted plants are thus too tall for ease of handling without staking and out of proportion to a 6" pot.

MATERIALS & METHODS

Three rhizomes were planted in Premier HP medium in 6" azalea pots. The medium was amended with 1.0 lb treble superphosphate per yd³, 6 lb dolomite per yd³, and 9 lb 18N-2.6P-10K Osmocote ® per yd³, and 1.5 lb Micromax ® per yd³. Following planting the pots were set under 60% saran shade under ambient conditions (80 F D/72 F N) with overhead sprinkler irrigation.

The growth retardants chosen for the experiment were paclobutrazol (PBZ), uniconazole (UNI) and flurprimidol (FLUR). A set of rhizomes were given an overnight soak prior to planting in each of the growth retardants at 2 mg a.i./L. Other rhizomes were treated with 0.5 or 0.1 mg/pot soil drenches of each retardant as shoots emerged

from the medium about 2 weeks after planting.

RESULTS

Rhizomes that received preplant retardant soaks were delayed in shoot emergence and many failed to develop to flowering. This does not appear to be a viable approach to height control.

Drench treatments successfully controlled plant height, with the 1.0 mg/pot rates mostly more effective than the 0.5 mg/pot rates (Table 1).

PGR	Rate mg/pot	Shoot Length	DTF days	Rating
Control	0	53.4	45	4.8
Bonzi	0.5	31.6	46	3.9
	1.0	21.9	47	3.2
Sumagic	0.5	18.7	46	3.2
	1.0	19.6	48	3.3
FLUR	0.25	18.1	48	3.0
	0.5	15.2	51	3.7
	1.0	14.5	50	3.5

Effectiveness was achieved in the order of FLUR>UNI>PBZ>control. Inflorescence lengths followed the same trend. Expanded leaf counts for all shoots were not different from 6. First shoots to flower required about 6 weeks for all treatments, with second shoots flowering only a few days later. Thus, uniformity was good. The salability

ratings varied, with only a

few plants achieving the best ratings, due largely to bunching of the foliage at the top of the stem as the retardants took effect.

In this study, the controls, at 21 inches (53.4 cm), were too tall, but had the longest inflorescences and best foliage appearance. PBZ-treated plants averaged 51% of the height of control plants, while the UNI and FLUR plants averaged 42 and 36%, respectively, and were too distorted at the rates used. In hindsight, a rate of 0.25 mg/pot should have been included for an intermediate effect on height without excess compression of the inflorescence or foliage.

The plants were allowed to go dormant and were forced the following spring with no additional growth retardant treatment. Flowering was achieved about 7 weeks after shoot emergence.

Rhizomes from the previous year's soak treatments ranged in height from 18 to 25 inches (46 – 65 cm), with 50 to 86 percent of the pots producing inflorescences. Control plants at 20.5 inches (52 cm) were too tall for ease of handling, but had the best

foliage quality. Plants developing from the previous year's soak treatments were quite variable, with some taller than the controls and others showing more compact growth. As the uniformity was poor, this would not be the best way to produce a uniform crop of short plants.

Plants from rhizomes that developed in the two PBZ treatments were taller than plants in the FLUR or UNI treatments but were shorter than the control plants, but with comparable stalk strength. The increasing growth retardant concentrations used as drenches in the previous year had a linear effect in reducing finished plant height (Table 2).

PGR	Rate	Shoot Length	% Flower	Flower Stalks
Control	0	52.0	77.7	2.3
Bonzi	0.5	48.5	90.0	1.5
	1.0	34.2	50.0	4.6
Sumagic	0.5	7.5	50.0	3.2
	1.0	4.4	50.0	2.2
FLUR	0.25	30.5	62.5	3.2
	0.5	20.4	33.3	2.7
	1.0	11.3	28.5	1.5

The 0.5mg PBZ and 0.25mg FLUR drench treatments produced plants that were marketable from the standpoint of height, inflorescence counts, and percentage of pots that bloomed. The most severely retarded stalks were not marketable and the inflorescences were also greatly reduced in size. Nearly all the flowering stalks had necrotic leaf

margins at flowering, suggesting nutrients may have been limiting during inflorescence development, while non-flowering stalks had healthy green leaves.

CONCLUSIONS

The results suggest that retardants drenches can be used to achieve marketable plants of *Globba magnifica* 'White Dragon.' It is necessary to determine whether the carryover effects of the retardants into the second year were due to retardant remaining in the medium or to uptake of the retardant into the rhizome. If the latter, there may be a potential for marketing retardant-pre-treated rhizomes for production of compact plants.

IMPACT TO THE INDUSTRY

1. Attractive and unusual flower form generate consumer interest.
2. Short cropping time of 8 to 10 weeks at 77 to 83 F greenhouse temperatures.
3. Drenches of growth retardants at sprout control excessive plant height.



0.25 mg/pot flurprimidol



Control (no treatment)



1.0 mg/pot paclobutrazol