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Ornamental Gingers as Flowering Potted Plants – Part 6 Production of *G. magnifica* ‘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. Thus, potted plants are too tall for ease of handling without staking and out of proportion for a 6-inch pot.

MATERIALS & METHODS

Three rhizomes SetCon Co. Thailand were planted in Premier HP medium in 6-inch azalea pots. The medium of peat moss and perlite was amended with 11b 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. After planting, the pots were placed under 60% saran shade under ambient conditions (80 F day/72 F night) with overhead sprinkler irrigation.

The plant growth retardants (PGR’s) compared to

the control were: paclobutrazol (PBZ), uniconazole (UNI), and flurprimidol (FLUR). One set of rhizomes were soaked overnight prior to planting in each of the growth retardants at 2 mg (active ingredient)/L. Other rhizomes were treated with soil drenches of 0.5 or 0.1 mg/pot shoots emerged from the medium, i.e. about 2 weeks after planting.

RESULTS

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

Drench treatments successfully controlled plant height, with the 1.0 mg/pot rate more effective than the 0.5 mg/pot rate (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

Thus, effectiveness was FLUR>UNI>PBZ>.

Inflorescence lengths followed the same trend. Expanded leaf counts for all shoots were not different. First shoots to flower

required about 6 weeks for all treatments, with second shoots flowering a few days later. Thus, uniformity was good. The salability ratings varied, with only a few plants achieving high ratings. The reduced ratings were largely due to bunching of the foliage at the top of the stem.

In this study, the controls at 21 inches, were too tall, but they had 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, but were too distorted at the rates used. A rate of 0.25 mg/pot may produce an intermediate effect on height without excess compression of the inflorescence or foliage.

Plants were allowed to go ‘dormant’ in the October and were forced the following spring with no additional PGR treatment. Flowering was achieved about 7 weeks after shoot emergence. Rhizomes from the previous year’s soaking PGR 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 highly variable, with some taller than the controls and others showing more compact growth. Thus, this would not be an acceptable system.

Plants from rhizomes that developed in the two PBZ treatments were taller than plants from the FLUR or UNI treatments, but were shorter than the control plants. Stalk strength was not affected. The increasing PGR 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 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. This suggests that nutrients may be limited during inflorescence development, while non-flowering stalks had healthy green leaves.

CONCLUSIONS

The results suggest that PGR 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 PGR remaining in the medium or to uptake of the PGR into the rhizome. If the latter, there may be a potential for marketing PGR-pre-treated rhizomes for production of compact plants.

IMPACT TO THE INDUSTRY

1. The attractive and unusual flower form of *G. magnifica* 'White Dragon' can generate consumer interest.
2. It has a cropping time of 8 to 10 weeks at 77 to 83 F greenhouse temperatures.
3. Drenches of plant growth retardants at sprout control plant height. (give best PGR traits)



0.25 mg/pot flurprimidol



Control (no treatment)



1.0 mg/pot paclobutrazol

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