

Hydrangeas Respond to New Growth Regulator

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The quest for growth regulators to control height of hydrangeas, particularly the vigorous variety Rose Supreme, seems to be perpetual. Years ago B-Nine was shown to be effective if applied at precisely the proper time and concentration, but some seasons treated plants still exceeded the desired size.

In 1981-82 the growth regulator PP 333 was tried on poinsettias, potted chrysanthemums, Easter lilies, hybrid lilies and hydrangeas. I was responsible for the hydrangea portion of the investigation. Plants were received from Joseph S. Merritt, Inc. the first week in January, 1982. Plants were potted January 8 in a medium composed of 3 parts pine bark humus: 1 part sand: 1 part acid peat moss. Dolomitic limestone (12 oz/2 cu ft), hydrated lime (3 oz/2 cu ft) and treble superphosphate (3.5 oz/2 cu ft) were incorporated in the potting medium at time of planting.

Plants were fertilized once each week with alternating applications of 20-20-20 and 15-30-15. STEM was applied once, and one tsp of Osmocote (14-14-14) was also applied, as a top-dressing.

Growth retardants used in this experiment were B-Nine SP and PP 333. The treatments were as follows:

	<u>Growth retardant</u>	<u>Concentration</u>	<u>Number of applications</u>
1.	None	-	-
2.	B-Nine SP	2500 ppm	two
3.	PP 333	50 ppm	one
4.	PP 333	100 ppm	one
5.	PP 333	200 ppm	one
6.	PP 333	50 ppm	two
7.	PP 333	100 ppm	two
8.	PP 333	50 ppm	four

The first application was made when 4 to 5 pairs of leaves were unfurled. Second applications were made to the appropriate plants 2 weeks after the first application. Ten ml. of PP 333 were applied per plant. B-Nine SP was applied to run-off. There were 6 plants per treatment. Plants were grown under natural daylengths in the departmental greenhouse.

Shoot lengths were measured at weekly intervals, beginning February 12. Other measurements included diameter of inflorescence, uniformity of plants, and quality.

Results and Discussion

Shoots on untreated plants averaged 50 cm, while shoots on treated plants ranged in average length from 24 to 45 cm (Table 1, Figure 1). Excessive height control occurred when plants were treated with 2 applications of PP 333 at 100 ppm, or 4 applications at 50 ppm.

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Plants treated with B-Nine SP had average shoot lengths of 38 cm. The best PP 333 treatment was Treatment 6, which was 2 applications at 50 ppm.

Flowering was often delayed when PP 333 was used. This delay was indicated by the absence of fully developed sepal color when data were recorded. Plants were placed under home conditions, to evaluate keeping quality. Reports of long-lasting beauty were received, perhaps because recipients of the plants for evaluation had been instructed to examine the plants daily for watering.

The author completed her undergraduate program in May, 1982. She conducted the research as a Special Topics Problem, with the guidance of Anne Whealy, graduate assistant, and Roy A. Larson, professor. The following firms are acknowledged: Uniroyal, for B-Nine SP; ICI Americas for PP 333; Robert B. Peters, fertilizer; Joseph S. Merritt, Inc., for hydrangeas.

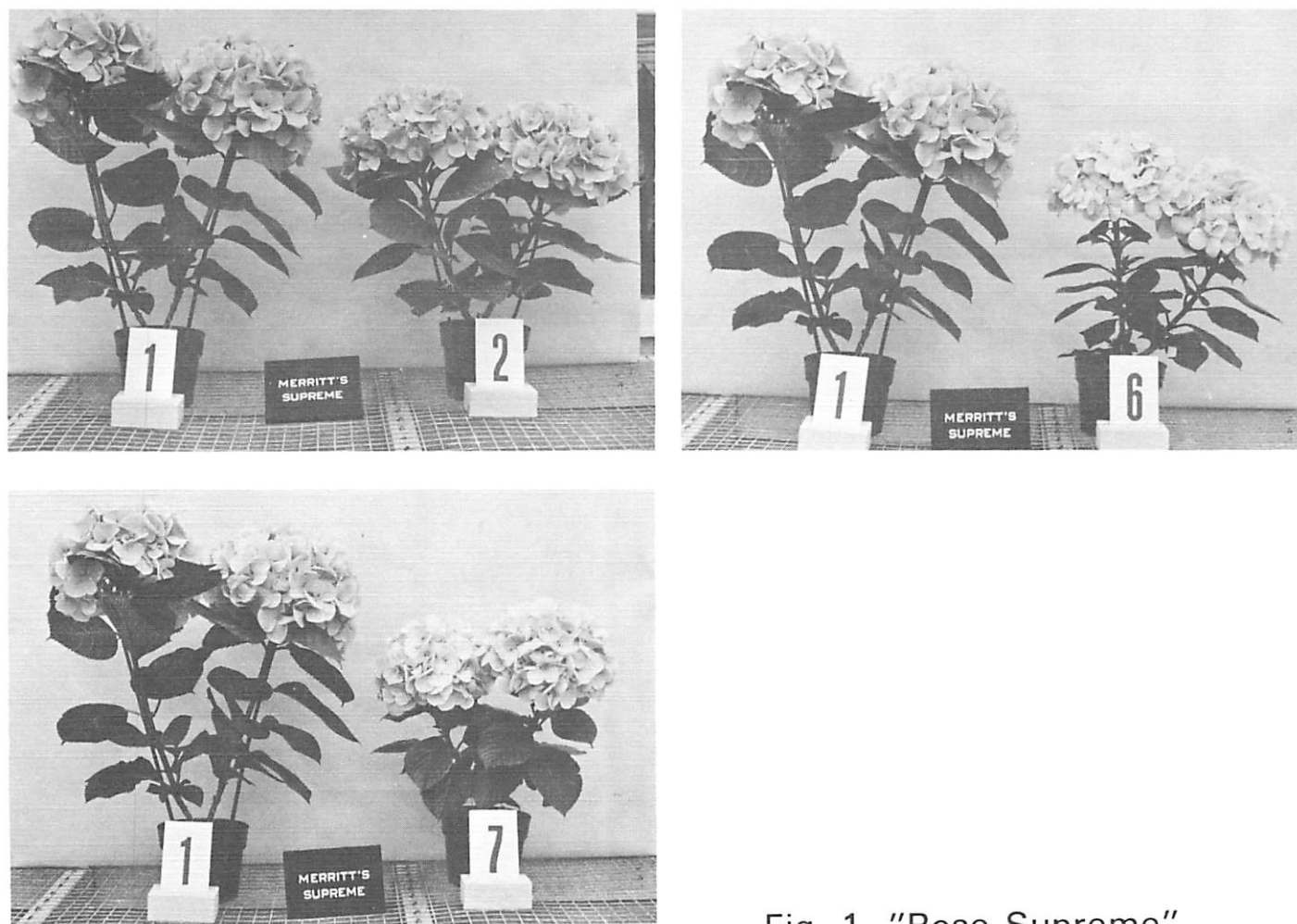


Fig. 1. "Rose Supreme" plants treated with 1, control; 2, B-Nine SP at

2500 ppm; 6, PP 333 twice at 50 ppm; 7, PP 333 twice at 100 ppm.

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Table 1. Growth retardant effects on shoot length and flowering of Rose Supreme hydrangea plants.

Treatment	Shoot length, cm ²	Diameter Inflorescence, cm	Sepal color ^y	Quality Rating ^x
1. Control	50	25	1.1	1.5
2. B-Nine SP, twice, 2500 ppm	38	23	1.5	2.2
3. PP 333, once, 50 ppm	45	24	2.0	2.3
4. PP 333, once, 100 ppm	41	22	1.9	2.2
5. PP 333, once, 200 ppm	32	21	2.4	2.6
6. PP 333, twice, 50 ppm	37	24	2.3	2.7
7. PP 333, twice, 100 ppm	30	19	2.4	2.7
8. PP 333, 4 times, 50 ppm	24	19	2.7	2.3

Final shoot lengths measured on April 16.
 Y1 = intense color to 4, very light pink.
 XQuality rating: 1 = excellent to 4 = poor.