

Table 3. Effect of chemical growth regulators on growth and development of azalea 'Prize' at Bradenton.

Treatment <sup>a</sup>	Conc. (ppm)	Appl. method	Number appl.	Plant height (cm)	Plant diameter (cm)	Number bypass shoots	Number days to flower
Control - water	—	Spray	1	30.5	48.1	2.3	46.8
Paclobutrazol	100	Spray	1	23.0	43.8	1.6	46.4
Paclobutrazol	100	Spray	2	21.7	41.6	1.3	46.1
Paclobutrazol	200	Spray	1	21.7	41.3	1.1	46.7
Paclobutrazol	200	Spray	2	21.7	39.2	1.1	46.7
Paclobutrazol	400	Spray	1	21.3	39.0	0.3	51.3
Paclobutrazol	400	Spray	2	20.8	38.0	0.1	54.6
Paclobutrazol	5	Drench	1	24.3	41.0	2.1	46.2
Paclobutrazol	5	Drench	2	22.0	40.9	1.8	46.4
Paclobutrazol	10	Drench	1	22.9	40.3	1.4	47.2
Paclobutrazol	10	Drench	2	21.7	39.8	0.4	53.1
Paclobutrazol	15	Drench	1	21.9	39.8	0.4	53.1
Paclobutrazol	15	Drench	2	22.1	39.3	0.1	54.8
Daminozide	2500	Spray	1	25.6	43.6	2.3	49.8
Daminozide	2500	Spray	2	23.3	41.0	2.1	54.2
HSD (P=0.05)				2.1	3.7	1.2	4.6

<sup>a</sup>Plants sprayed at 204 ml/m<sup>2</sup> (2 qt/100 ft<sup>2</sup>) or drenched with 120 ml/pot (4 oz/pot).

GVL but were shorter than control plants at BTN. Response to the soil drenches was similar in both locations. The advantage of the foliar spray was the reduction in bypass shoot formation and the number of multiple floral buds. Further studies should be initiated to determine why the response to the foliar sprays was different at the two locations.

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## EFFECT OF BA, B-NINE, BONZI AND CYCOCEL ON GROWTH OF PHILIPPINE VIOLET (*BARLERIA CRISTATA* L.)

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**Abstract.** *Barleria cristata* L. (Philippine violet) is a fast growing tender perennial that can be found in newer landscapes around central Florida. A violet-flowered and a white-flowered form can be found. Because of their attractive foliage and flowers a test was conducted to determine if *Barleria cristata* would

make a suitable flowering pot crop. Plants growing in 10-cm pots, were given a single foliar spray of B-9 (2500 mg-liter<sup>-1</sup>), Bonzi (25 mg-liter<sup>-1</sup>), BA (500 mg-liter<sup>-1</sup>) or Cycocel (1000 mg-liter<sup>-1</sup>). BA was used in attempt to stimulate lateral branching while the other growth regulators were applied to reduce plant height. At 14 weeks after treatment Cycocel-treated plants were significantly shorter than untreated plants; the other treatments had no significant effect on growth. Leaves on Cycocel-treated plants of the white cultivar showed a significant increase in width compared to control plants. Although final plant quality was lower in plants receiving the Cycocel or Bonzi treatments, these growth regulators did appear to have benefit, and further tests are planned to determine optimum rates to use for production of good quality pot plants.

*Barleria cristata* (Philippine violet) is a fast growing tender perennial that occasionally can be found in newer landscapes around central Florida. A violet-flowered and a white-flowered form exist (Neal, 1965). Based on the Royal Horticultural Society Colour Chart (Anonymous, N.D.) the violet flowers

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Table 1. Effect of four growth regulators, applied as a single foliar spray, on growth of a violet-flowered clone of *Barleria cristata*. Plants were treated on 18 Jan. 1994 and data taken on 29 Apr. 1994.

Treatment	Initial canopy height (cm)	Final canopy height (cm)	Change in canopy height (cm)	Canopy Diameter (cm)	No. flowers at termination	Plant quality <sup>a</sup>
Control	6.4 a <sup>b</sup>	43.8 a	37.4 a	25.2 a	2.8 a	3.8 a
B-Nine, 2500 mg·liter <sup>-1</sup>	6.2 a	38.2 b	32.0 b	25.1 a	3.0 a	3.6 a
Bonzi 100 mg·liter <sup>-1</sup>	6.4 a	39.7 b	33.2 ab	21.7 bc	3.0 a	3.0 b
Cycocel, 1000 mg·liter <sup>-1</sup>	6.2 a	28.7 c	22.5 c	19.8 c	3.0 a	2.4 b
BA, 500 mg·liter <sup>-1</sup>	6.3 a	39.3 b	33.0 ab	23.9 ab	2.7 a	3.8 a

<sup>a</sup>Visual quality rating of 1 to 5 where 1 = poor; 2 = fair; 3 = acceptable (saleable); 4 = good; and 5 = excellent quality.

<sup>b</sup>Means within columns followed by the same letter are not significantly different according to Duncan's Multiple Range Test, 5% level.

match RHS Fan #2, Plate 83D and the white color matches RHS Fan #4, Plate 155D. Because of their attractive foliage and flowers a test was conducted to determine if *Barleria cristata* would make a suitable flowering pot crop.

### Material and Methods

Rooted cuttings from 50-celled plastic trays were potted one per 10-cm plastic pot in Vergro container mix A(2:1:1, Canadian peat moss:perlite:vermiculite; Verlite Co., Tampa, FL). Each pot was fertilized with 2.5 grams 19:6:12 Osmocote (Sierra Chemical Co., Inc., Milpitas, CA) on 12 Jan. 1994.

Table 2. Effect of four growth regulators, applied as a single foliar spray, on growth of white-flowered clone of *Barleria cristata*. Plants were treated on 18 Jan. 1994 and data taken on 29 Apr. 1994.

Treatment	Initial canopy height (cm)	Final canopy height (cm)	Change in canopy height (cm)	Canopy Diameter (cm)	No. flowers at termination	Plant quality <sup>a</sup>
Control	5.2 a <sup>b</sup>	25.5 b	19.1 a	30.1 a	4.0 a	3.0 a
B-Nine, 2500 mg·liter <sup>-1</sup>	4.9 a	28.2 ab	21.9 a	26.9 ab	3.6 a	3.1 a
Bonzi 100 mg·liter <sup>-1</sup>	4.6 a	30.1 a	24.4 a	24.9 b	3.9 a	2.9 a
Cycocel, 1000 mg·liter <sup>-1</sup>	4.9 a	17.6 c	11.5 b	19.9 c	1.9 b	2.2 b
BA, 500 mg·liter <sup>-1</sup>	5.2 a	28.4 ab	21.9 a	27.2 ab	3.8 b	3.1 a

<sup>a</sup>Visual quality rating of 1 to 5 where 1 = poor; 2 = fair; 3 = acceptable (saleable); 4 = good; and, 5 = excellent quality.

<sup>b</sup>Means within columns followed by the same letter are not significantly different according to Duncan's Multiple Range Test, 5% level.

Table 3. Effect of Cycocel on leaf size of white-flowered clone of *Barleria cristata*. Plants were treated on 18 Jan. 1994 and data taken on 29 Apr. 1994.

Treatment	Leaf length (cm)	Leaf width (cm)	Length + Width/2
Control	6.8 a <sup>a</sup>	3.0 a	4.9 a
Cycocel, 1000 mg·liter <sup>-1</sup>	6.9 a	4.9 b	5.9 b

<sup>a</sup>Means within columns followed by the same letter are not significantly different according to Duncan's Multiple Range Test, 5% level.

Plants were grown in a shaded greenhouse with natural photoperiod and a light intensity of 2000 ft-c. Watering initially was once per week and increased as needed.

Four different growth regulators were tested: B-Nine (daminozide) at 2500 mg·liter<sup>-1</sup>; Cycocel (chlormequat) at 1000 mg·liter<sup>-1</sup>; Bonzi (paclobutrazol) at 100 mg·liter<sup>-1</sup>; and, BA (N<sup>6</sup>-benzyladenine) at 500 mg·liter<sup>-1</sup>. These four chemicals and their respective rates were selected because they represented the scope of growth regulators commonly used on ornamental plants. The experimental design was a randomized complete block with 10 replications. Each pot containing a single plant was the experimental unit. On 18 Jan. 1994, treatments were applied as a single foliar spray; 100 ml of treatment solution was applied as evenly as possible among the 10 plants. Control plants were sprayed with deionized water.

Plants were repotted to 15-cm pots using the same soil medium on 15 Mar. 1994 and were moved outside to full sun as the danger of frost had passed. Final data, taken on 29 Apr. 1994, included plant height, canopy diameter, number of flowers and a visual quality rating of 1 to 5 where 1 = poor; 2 = fair; 3 = acceptable (saleable); 4 = good; and, 5 = excellent quality.

### Results and Discussion

At 14 weeks after treatment Cycocel-treated plants of the violet-flowered cultivar were significantly shorter than untreated plants; the other treatments had no significant effect on growth or branching (Table 1). Similar results were observed with the white-flowered cultivar (Table 2). Leaves on Cycocel-treated plants of the white cultivar were different in appearance. Leaves of treated plants were significantly wider and darker green than those of untreated plants. Although final plant quality was lower in plants receiving the Cycocel and Bonzi treatment, potential benefits such as more compact plants with darker foliage (particularly with the white cultivar), further tests are planned to determine optimum rates to use for production of good quality pot plants.

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