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## MINIPOT POINSETTIAS PART II: POT SPACING, PINCHING, AND GROWTH RETARDANT<sup>1 2</sup>

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### 1979 Evaluations

'Annette Hegg Brilliant Red' and 'Mikkel Triumph' were potted in 10 cm (4-inch) plastic azalea pots on September 13, 1979 using equal volumes of clay loam, sphagnum peat and no. 6 perlite. The plants were grown pot to pot at a night temperature of 16°C (61°F). On September 14, one third of the 'Brilliant Red' were pinched, leaving four breaks above the soil line. The second group was pinched on September 21 and the last group, along with the buffer plants ('Triumph') were pinched September 24. On October 13, they were divided into two temperature groups and the cvs. 'Brilliant Red' spaced at 27.9, 34.0, 39.0 and 44.8 per m<sup>2</sup> (2.6, 3.2, 3.6 and 4.2/ft<sup>2</sup>) respectively). The two night temperature regimes were intended to be 12°C (55°F) and 16°C (61°F) but, instrumentation in recently renovated FRP covered facilities provided almost identical conditions at the higher range. All plants were hand watered throughout the experiment and were drenched with Dex-on/Benlate at one month intervals. The plants were fed recommended rates (1).

Data was taken December 13 and evaluated. Because of the uniformity of plant height in all treatments, no statistical analysis were made. All the plants ranged in height from 19.1 to 22.8 cm (7.5 and 9.0 in., respectively). They had fair symmetry; but still immature on this date. They were marketable two days before Christmas.

<sup>1</sup>A portion of a senior project report.

<sup>2</sup>Appreciation to Cyndi Schwandt, student Res. Asst. for helping collect data.

<sup>3</sup>Professor and senior student, Department of Horticulture, Colorado State University.

The data was not valid for the 1979 experiments, however, it was interesting to note that both 'Annette Hegg Brilliant Red' and 'Mikkel Triumph' could be grown under relatively adverse conditions and still obtain marketable plants.

The 1980 experiments were of similar design but eliminated the 1979 problems.

### 1980 Studies

The 1980 studies were designed to re-evaluate some phases of the previous year's studies and to establish a recommended spacing for mini poinsettias grown in 10 cm (4-inch) azalea pots. Rooted cuttings (Rootcubes®) of the cultivar 'Annette Hegg Brilliant Red' were planted on Sept. 4, in 10 cm. plastic azalea pots using a medium containing equal volumes of clay loam, sphagnum peat and no. 6 perlite. They were placed in two temperature environments using a specific spacing, pinching date and growth retardant application.

Temperatures: A. Heat to: 12°C (55°F) night  
16°C (61°F) day  
Cool at: 21°C (70°F) day  
B. Heat at: 16°C (61°F) night & day  
Cool at: 21°C (70°F) day

Spacing: 27.0 (2.5)\*, 32.0 (3.0), 37.8 (3.5) and 43.2 (4.0) pots per m<sup>2</sup>.

Pinch Dates: Group 1 - 9 September 1980  
Group 2 - 16 September 1980  
Group 3 - 23 September 1980

Cycocel Drench: Group 1 & 2 - 8 October 1980  
Group 3 - 20 October 1980

\* ( ) number pots per sq. ft.

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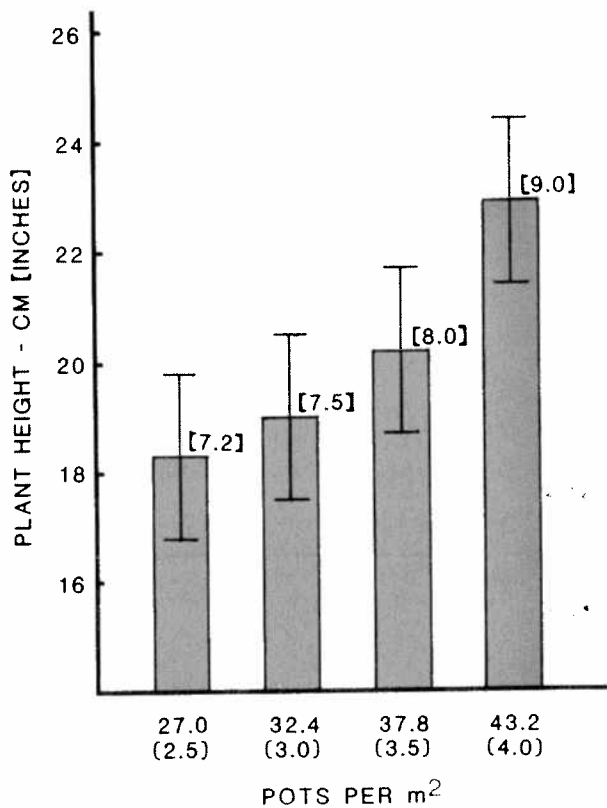


Fig. 1. Height response on poinsettia plant, cv. Annette Hegg Brilliant, spaced at four bench densities and using 10 cm (4-inch) pots. HSD = 3.07 cm.

The plants in both temperature environments were watered by hand, when the growing media was dry to the touch. Recommended nutrients (1) were supplied at each watering with some supplemental feeding. Carbon dioxide levels were maintained between 500 and 600 ppm during daylight hours. The plants were pinched leaving four nodes above the soil line. A Banrot® drench was applied immediately after potting and every four weeks thereafter.

#### Temperature Responses

'Annette Hegg Brilliant Red' performed well in the 16°C night temperature facility. The performance in the lower night temperature, 12°C night environment, caused excessive delay of bract development. On December 22, the flowers were well developed and the bracts about one-third as large as those grown in the warmer temperature. Both this experiment and another one conducted in an adjacent facility, indicated that 'Annette Hegg Brilliant Red' should not be grown at temperatures below 16°C. This report will therefore discuss the results obtained in the warm house.

#### Spacing

Studies by Ecke (2) indicated that spacing 10 cm pots at 43.2, per sq. meter of bench (4.0/ft<sup>2</sup>) was possibly too dense and cause the plants to stretch. This study

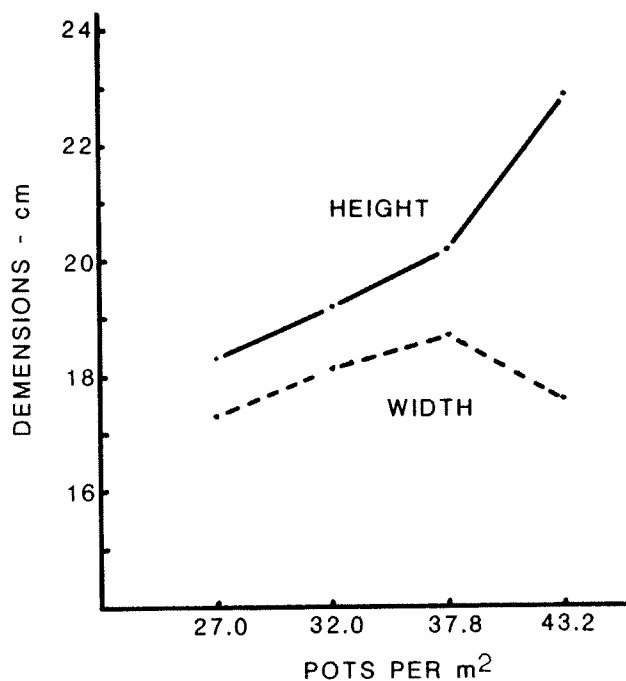


Fig. 2. Height and width relationship of poinsettia cv. Annette Hegg Brilliant when grown in four plant densities.

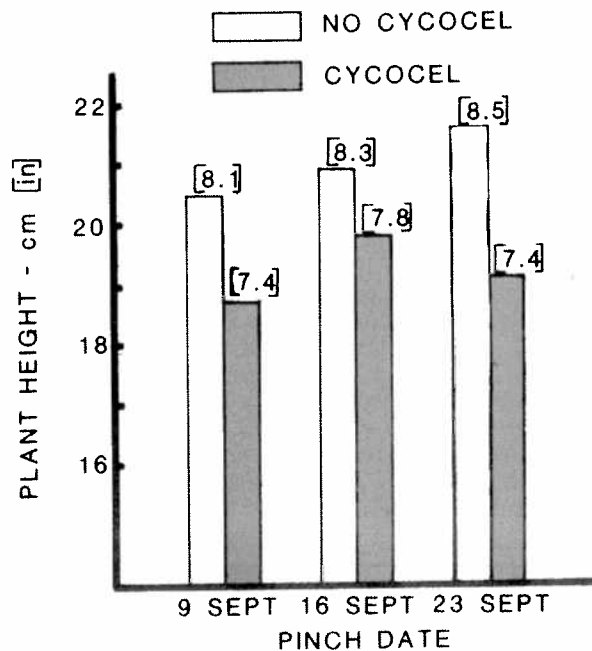


Fig. 3. Height response of poinsettia cv. Annette Hegg Brilliant, potted 4 September 1980, to three pinch dates and a 1500 ppm drench of cycocel.\*

showed that such a spacing did produce tall plants, (figure 1) but they were not significantly taller than those grown at 37.8 per m<sup>2</sup> (3.5/ft<sup>2</sup>). The higher density plants did have a larger ratio of height to width, (figure 2) as would be expected, but the plants were still very desirable and marketable.

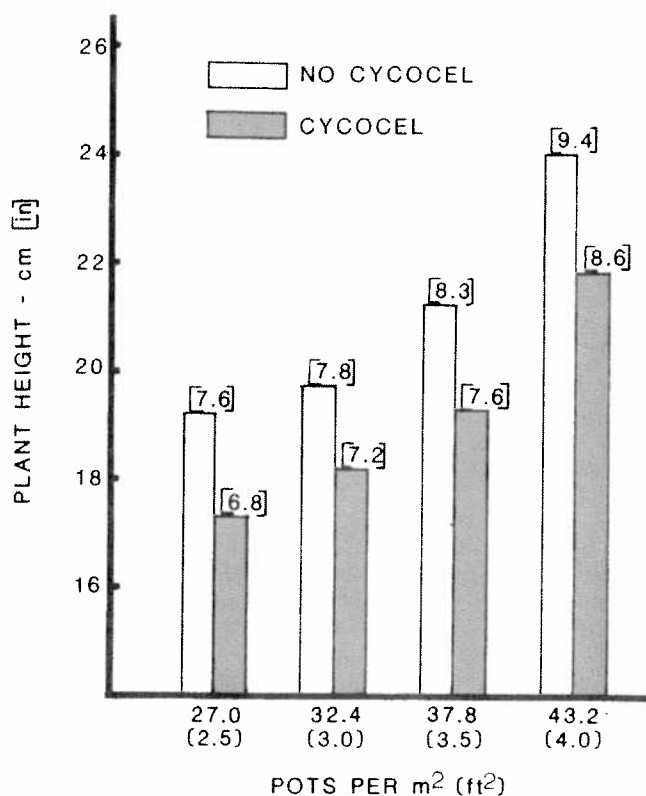


Fig. 4. The influence of plant spacing and a growth retardant application on the final height of poinsettia cv. Annette Hegg Brilliant Red.

#### Pinching Dates

The poinsettia cultivar 'Annette Hegg Brilliant Red' was effectively timed, based on a single planting date and varied pinching dates. In all spacing the first pinching date treatment, 9 September, was in prime condition the first week of Dec., but most flowers were over mature. Pinch group two was well developed and marketable. The necrotic cups in pinch group three were just starting to develop. They were at least 10 days behind group one, in maturity. The plants in the last pinching date treatment were the tallest, however, pinch dates did not significantly affect the height of the plants (figure 3).

#### Cycocel Response

Cycocel, at a rate of 1500 ppm, was applied as a drench. It was effective on all spacing densities, (figure 4) but had little or no effect on plant response to pinching dates (figure 3). The drench method of cycocel application appeared to be more effective than the foliage spray used by Ecke (2).

#### Conclusions

Based on the data obtained in 1975, 1979 and 1980 poinsettia seasons, highly symmetrical 10 cm poinsettia plants can be approximately timed using planting

and pinching dates and growing temperatures. The size of the plants can be controlled by watering, growth regulators and pot size.

Recommendations as follows:

- 1) Pot rooted cuttings approximately 100 days before a marketable plant is desired, in a 10 cm plastic azalea pot.
- 2) Heat to 16°C (61°F) night and day throughout the growing season. Some varieties can be grown at 12°C (55°F) night and 16°C day. Cool to 21°C (70°F) during the day in either case.
- 3) Place pots on a watering mat at a 37.8 or 43.2 per m<sup>2</sup> spacing (3.5 or 4.0/ft<sup>2</sup>). Water plants overhead by hand when the growing media is dry to the touch. If a peat-lite media is used, watch the degree of dryness.
- 4) Pinch, leaving four leaves above the soil line, 10 days after potting, but no later than September 25. Pinches on a specific planting can be spread over a three week period to help extend marketing capabilities.
- 5) Apply Cycocel® approximately 30 days following the pinch. A drench of 1500 ppm was effective, however a spray is easier to apply.

Used recommended cultural procedures for fungicides, fertilizers and photoperiod (1).

Recommended varieties that can be grown at warm or cool temperatures and make excellent minipots:

Mikkel White Rochford	Mikkel Heritage
Annette Hegg White	Mikkel Triumph
Mikkel Dawn Rochford	Ecke R-13
Annette Hegg Marble	Mikkel Pink Rochford
Annette Hegg Diva	Annette Hegg Pink
Annette Hegg Lady	

#### References

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