SPLIT-NIGHT TEMPERATURE: POINSETTIAS, 1979

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Four cultivars of poinsettias were grown in the University of Connecticut floriculture greenhouses. The plants were subjected to the usual night temperature of 60°F (16°C) while others were placed under a split-night temperature treatment of 60°F until 2300 hr. and either 50°F (10°C) or 40°F (4°C) from 2300 hr. until 0500 hr. In the 16°/10° and 16°/4° regimes, groups of plants received bottom heat from existing greenhouse heat pipes trapped beneath the pots. Under the same temperature another group of plants were merely placed on the greenhouse bench without any additional heat.

Unfortunately, due to the unusually warm fall weather in Connecticut, split-night temperatures could not be maintained. In the control treatment the night temperature was kept at 16°, but under all other treatments the split-night temperature lowered to only an average of 13° during the plants' growing period. There was no significant difference among plants with or without bottom heat. Any differences found among plants were not due to temperature variations.

This is in accord with previous studies where early cultivars develop before nights become very cold and there is no reduction in quality. During this portion of the year there is not a great savings in heat. But if the thermostat is designed for split-night temperatures, early poinsettias will grow just as well.

Table 1. Poinsettia Height Under Split-Night Temperatures

Cultivar	Treatment (Temp. °C) 16	16/10 bh[z]	16/10	16/4 bh[z]	16/4	Mean
		Plant Height (cm)				
Super Rochford	22.2^{cx}	23.3^{c}	23.0^{c}	27.3^{b}	28.8^{a}	24.9^{ny}
V-10 Amy	15.5^{ghi}	16.2^{fgh}	15.0^{hij}	11.9^{l}	14.1^{jk}	14.5^{p}
Diva	19.7^{d}	16.4^{fg}	17.7^{e}	17.4^{ef}	20.0^{d}	18.2^{o}
Lady	15.1^{hij}	15.5^{ghi}	16.1^{fgh}	13.6^{k}	14.4^{ijk}	15.0^{p}
Mean	18.1	17.9	18.0	17.6	19.3	18.2

[z]Bottom heat

[y]Cultivar mean separation within columns by Duncan's multiple range test, 5% level. Heights followed by the same letter are not significantly different.

[x]Treatment by cultivar mean separation within rows and columns by Duncan's multiple range test, 5% level.

Table 2. Poinsettia Bract Diameter Under Split-Night Temperatures

Cultivar	Treatment (Temp. °C) 16	16/10 bh[z]	16/10	16/4 bh[z]	16/4	Mean
		Plant Height (cm)				
Super Rochford	26.2	24.8	23.9	24.4	26.5	25.2[a x]
V-10 Amy	18.7	18.1	17.3	16.4	20.0	18.1[d]
Diva	21.6	16.9	19.4	20.0	21.4	19.7[c]
Lady	22.3	17.4	22.3	22.5	23.6	21.6[b]
Mean	22.2[mn y]	19.3[o]	20.7[n]	20.8[n]	22.9[m]	21.2

[z]Bottom heat

[y]Treatment mean separation by Duncan's multiple range test, 5% level. Bract diameters followed by the same letter are not significantly different.

[x]Cultivar mean separation by Duncan's multiple range test, 5% level.

Figure 1. 'Annette Hegg Lady' grown under split-night temperatures of 60/40° with bottom heat; 10/40°, 60° control, 60/40° with bottom heat and 60/50°. For early varieties, no delay was found.