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HIGH QUALITY POINSETTIA PLANTS THE GOAL FOR 1960

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Within the past five years emphasis has been placed on cultural practices which result in vigorous and healthy poinsettia plants. The difficulty with such practices is that the high-quality plants are many times too tall for the average consumer. The practice of running the soil dry to minimize root rot damage is not the way to produce plants of high quality, though it may be the difference between a fair crop and no crop at all. A proper sterilization program can be more effective in disease control, without the corresponding decrease in plant vigor. The decision not to fertilize the plants after mid-November to keep them short may often result in a soil with nutrients at such low level that the leaves begin to drop, and quality is impaired.

Some attempts have been made to grow shorter plants by subjecting the plants to low temperatures (50 to 55° F). However, as some root rot organisms are particularly effective at these low temperatures, this temperature range is usually not recommended.

In 1958 a survey of poinsettia growers in New York State was conducted. This survey indicated that a height of 22 to 24 inches was desired by the majority of the growers. Last year many growers expressed satisfaction with 15 to 18 inch plants for the large proportion of their crop.

It is difficult to propagate cuttings in July and early August and obtain 15 to 18 inch plants in December, with proper watering and fertilizing practices, at night temperatures of 60° F or higher. In an effort to grow short poinsettias, without approaching the problem with the negative practices of not fertilizing and not watering, studies were conducted in 1959 using different sized cuttings and propagating later than normal.

Size of Cutting Study

Three sizes of Barbara Ecke Supreme cuttings were made every two weeks from July 15 to September 15. The sizes were 2, 4 and 6 inches. The cuttings were placed in peat pots and rooted under intermittent mist. The 2 inch cuttings were placed in 2¼ inch peat pots while the 4 and 6 inch cuttings were placed in three-inch peat pots. Approximately 25 days after propagation the cuttings were removed from the mist and the percentages of cuttings rooted were recorded. The 2 inch cuttings were then transferred to three-inch clay pots while the larger cuttings were placed in five-inch clay pots. (It was realized at the time that the different pot sizes could affect the final plant heights, and that a variable other than size of cutting was introduced. However, the feasibility of using 2-inch cuttings was being considered.) Plants in the 2-inch cutting treatment were finished in five-inch clay pots.

From the period July 15 to September 30 84% of the 2 inch cuttings were rooted within 25 days while the percentages for the 4 and 6 inch cuttings were 96% and 94%, respectively.

After the plants had been removed from the mist bench and were repotted they were separated into 2 groups; half were placed in a 70° F constant greenhouse and the other half were placed in a 60° F night, 70° F day greenhouse. All plants were given a 9 hour daylength, beginning October 10. The plants were fertilized weekly with 14-28-14 or KNO₃ at a rate of 2½ pounds per 100 gallons of water. They were watered when necessary, which in 1959 was usually twice a day.

The final plant heights and bract sizes for the August 15 and 30 treatments are shown in Table 1.

(continued on page 2)

Table 1. The plant heights and bract sizes of 2, 4 and 6 inch cuttings grown at two temperatures, and a nine-hour daylength. (Data recorded December 20, 1959)

Date of Propagation	60° night, 70° day						70° Constant					
	Average Height (inches)			Average bract Diameter (inch)			Average Height (inches)			Average bract Diameter (inch)		
	2	4	6	2	4	6	2	4	6	2	4	6
Aug. 15	30.2	36.4	37.9	12.5	12.8	10.8	30.2	36.6	38.0	15.3	13.3	14.0
Aug. 30	18.1	28.8	29.2	11.3	12.5	12.9	22.0	29.2	32.1	15.2	14.2	14.6

Poinsettias

(continued from page 1)

The differences in final plant heights between the 4 and 6 inch cutting treatments were slight. The 2 inch cuttings resulted in plants which were 6 to nearly 12 inches shorter than the other treatments, but the differences in pot size must be mentioned again. The differences in bract diameters were inconsistent. The smallest bract diameters in the August 15 propagation date were recorded on plants produced from 6 inch cuttings, at 60° night, 70° day. In the August 30 propagation treatment the bract diameters were very similar. The plants which were produced from the 2 inch cuttings and grown at 70° had the largest bracts, though the plants were the shortest.

Figure 1 indicates the bract sizes and relative heights of the plants grown at 60-70° F and a 9 hour daylength, propagated August 30.

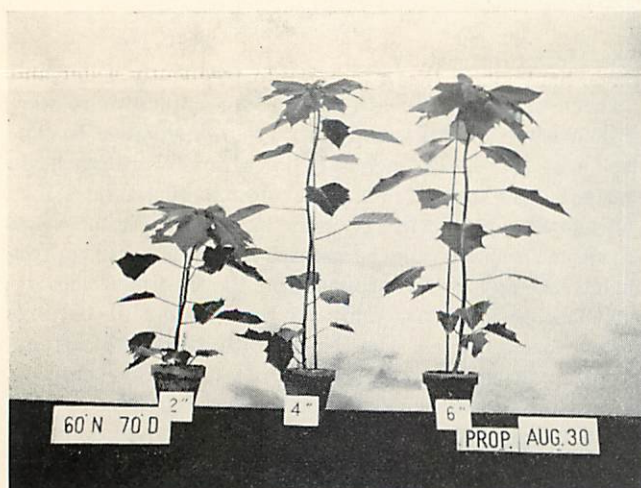


Figure 1. Plants produced from 2, 4 and 6 inch cuttings, grown at 60° F night, 70° F day, and a 9 hour daylength. The cuttings were propagated August 30. The photograph was taken December 28, 1959.

Figure 2 illustrates the bract sizes and relative heights of the plants grown at 70° F and a 9 hour daylength, propagated August 30.

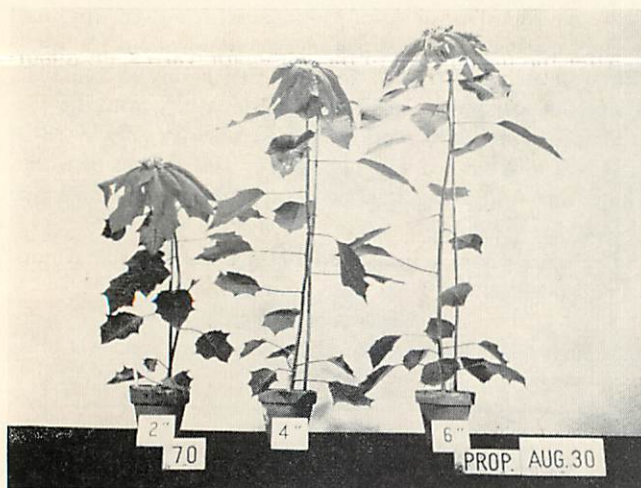


Figure 2. Plants produced from 2, 4 and 6 inch cuttings, grown at a constant temperature of 70° F, and a 9 hour daylength. The cuttings were propagated August 30. The photograph was taken December 28, 1959.

The data indicate that short cuttings can be propagated with no decrease in bract diameter. Shorter plants can be obtained by taking shorter cuttings in late August. The fertilization and watering practices can still be those considered to be the best for the production of healthy, vigorous plants. The propagation of 2-inch cuttings in August may be an approach to the possibility of growing short plants without having to resort to negligent practices.

Late Panning Study

It has been stated that one should never pan poinsettias after the initiation of flower buds (October 10). It was felt that panning later than this would result in plants of poor quality with regard to bract size and development. The big disadvantage of such early panning is that plants of different sizes will be found in each pan at Christmas. Many growers prefer this "staged" effect but the crux of the problem is that with early panning the grower has little or no control over the arrangement of plants with regard to heights, and the staged effects occur in spite of, rather than because of, the grower. It is definitely known that not all flower buds initiate or develop simultaneously even under the same cultural conditions so a plant which is retarded in flower bud initiation and development will usually be taller than one in which the reproductive stage has been initiated. Another disadvantage of the "necessity" to pan in late September or very early October is that this period may not be the most suitable for a particular grower. He might prefer to pan later if he dared, to alleviate a busy schedule.

In 1959 a "late-panning" study was run to determine the effects of panning in September, October, November, and mid-December. Cuttings of the variety Barbara Ecke Supreme were propagated September 1 under intermittent mist. The plants were propagated in three inch clay pots, in a one part soil-one part sand-one part peat mixture. September 30, October 31, November 30 and December 15 were the panning dates selected for this study. The plants were grown at 60° F night, 70° F day temperatures. The plants were lighted from September 20 to October 10, and a 9 hour daylength was given after October 10.

On the date of panning 3 plants were placed in a 6"-3/4 clay pot. There were 15 large pots per panning date, for a total of 45 plants. The 3 plants placed in each pot were selected for uniformity. Any combination of heights could have been obtained but uniformity was desired.

In Table 2 are shown the final plant heights for the various panning dates. The variations in heights from the shortest plants to the tallest in each pot are also shown.

(continued on page 3)

Table 2. The final plant heights and deviations from the shortest to the tallest plants in each pan for four panning dates. The plants, of the variety Barbara Ecke Supreme, were propagated September 1.

Panning Date	Average height to tallest plants per pan (inches)	Deviation from shortest to tallest plants per pan (inches)
September 30	18.1	6.8
October 31	19.0	2.6
November 30	17.7	0.9
December 15	18.7	1.1

Figure 3 indicates the responses of poinsettias to panning on 3 of the 4 dates.

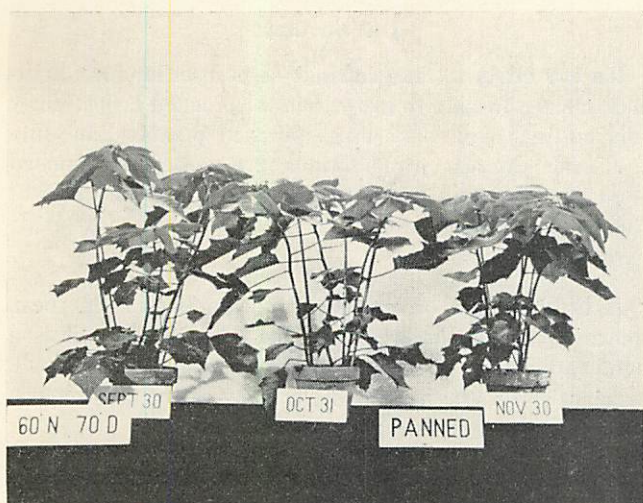


Figure 3. Poinsettias, variety Barbara Ecke Supreme, panned Sept. 30, Oct. 31, and Nov. 30. The photograph was taken on December 28, 1959.

The plants which were panned in late October, November, and December were of quality equal to or better than those panned September 30. The overall appearance of each pan was better in the October 31 and November 30 treatments than those panned September 30. No wilting, loss of leaves, or loss of bracts occurred at the later panning dates. Flower bud initiation and development were not apparently interrupted, and no abnormal flowers were obtained.

It was realized that December 15 would be a poor time to pan poinsettias because of the rush in the greenhouse at that time. The treatment was included merely to see what would occur. No detrimental effects resulted from such a late panning date.

The grower must bear in mind that these plants were kept in 3 inch clay pots until final panning. They were watered frequently because they were definitely underpotted, and a weekly fertilization program of KNO_3 or 14-28-14 at a rate of $2\frac{1}{2}$ pounds per 100 gallons of water was followed.

The individual grower would know when panning would be most convenient. From the panning studies it is known that late panning has no detrimental effects on flower bud initiation and development, and greater control can be exercised in selecting plants for uniformity or in staging the finishing pan.

Late Propagation

To produce shorter, high quality plants more and more growers are delaying the time of propagation. July propagations are decreasing in popularity. With delayed propagation it is imperative that the mist bench be lighted after September 20. Poinsettia cuttings root very poorly when the days are short, and abnormal flowers result. At least one week of long days (interrupted nights) should be given after the plants are removed from the propagation bench. For example, cuttings propagated September 15 should be lighted from September 20 until they are removed from the propagation bench, and an additional 7

long days given after transfer to the greenhouse bench. The approximate time for rooting to occur is 21 days so on October 6 the plants would be removed from the propagation bench. On October 13 short days could be given. A 9 hour daylength with night temperatures of 65° F or 70° F are then recommended.

Summary

Two, 4 and 6 inch cuttings were propagated, and the 2-inch cuttings resulted in plants with bracts as large as plants which had been produced from 4 and 6 inch cuttings. The percentage of 2 inch cuttings which rooted was reduced by about 10 per cent from the other sizes. Shorter plants were obtained with the shorter cuttings.

Plants of good quality were obtained when the plants were panned as late as December 15. Greater uniformity was possible when the plants were panned October 31, November 30 or December 15 instead of September 30. The grower could make up any height combinations he desired by panning late, rather than trust to chance and pan in September. It is necessary to frequently water and fertilize the plants which are to be panned late, as they will be under-potted before the final shift.

Lights are necessary on cuttings which are being rooted after September 20. Cuttings do not root readily under short days, and flower buds apparently do not normally initiate and develop on poorly rooted cuttings.