

Triple The Productivity Of Poinsettia Stock Plants

Roy A. Larson and R. W. Langhans
Department of Floriculture
Cornell University

Growers are becoming increasingly aware of the effects of daylength and temperature on the flowering of the poinsettia and many are using the most up-to-date methods of poinsettia culture, such as lighting the crop to October 10, pulling black cloth, and growing at warmer temperatures (65° to 70° F night temperatures). The advantages of a good soil sterilization program are being realized by more and more growers each year. Better plants are being sold to the retailer and to the consumer because better cultural methods are being practiced. However, the grower in general is still neglecting a very important phase in the production of poinsettia plants—the culture of the stock plants and propagation.

In the past few years we have checked with several growers as to their stock plant culture. Many of these growers claimed that 50 cuttings per stock plant (variety Barbara Ecke Supreme) for the propagation season was a fairly accurate estimate of production. This number was obtained from No. 1 stock plants. An occasional grower reported a yield of 75 to 100 cuttings per stock plant but 50 was the most consistent figure. The majority of the stock plants were being grown in eight-inch pots or similar small containers, watered once or twice a day, and fertilized mostly when the plants appeared to be lacking in nutrients. The stock plants were often grown in some place in the greenhouse where they wouldn't bother anyone or get in the way. Then, when the time arrived for the propagation of a large number of vigorous cuttings, these cuttings weren't available, or an excess of stock plants had to be ordered to meet the demand.

Many poinsettia growers are aware of the low productivity of their stock plants and realize that 50 cuttings per stock plant is not a bargain.

In 1959, for the period of July 7 to September 25, approximately 150 cuttings were obtained from each of the No. 1 stock plants (variety Barbara Ecke Supreme) grown in the Cornell greenhouses.

How to Get 150 Cuttings per Stock Plant

One of the most important items in poinsettia stock plant culture is the container. The containers used were six gallon cottage cheese cans, readily available from many creameries and bakeries. Five to six half-inch holes were punched in the bottom of each container. A two-inch layer of coarse gravel was placed in each can, and the can was then filled to within two inches of the top with a soil mixture of one part soil, one part sand, and one part peat.

The stock plants, which were No. 1, were placed in these containers in mid-April and started at a night temperature of 80° F. The new growth was pinched back until June 18, and cutting production records were started July 7.

Some curling of the foliage and "false blossom" were evident in the early stages of development. These abnormalities became less frequent and less noticeable as the

plants developed and no stock plants were discarded.

The plants were grown at high temperatures (average was 77° F night temperature) and the plants often had to be watered three times per day. The plants were fertilized twice each week, alternating potassium nitrate and 14-28-14 at a rate of 2½ pounds of fertilizer per 100 gallons of water. Approximately six square feet of bench area was allowed for each stock plant in the study.

After July 7 the cuttings were propagated every seven to 10 days. When the cutting was made at least one leaf was left on the remaining shoot in July and early August, and two leaves were left on the shoot in late August and September.

Misting of Poinsettia Cuttings

Increasing the number of poinsettia cuttings threefold will not be fully appreciated if the propagation setup is inadequate or inefficient. The use of a mist system has proven very satisfactory.

The mist nozzles should be spaced so that complete coverage of the bench area will be achieved with each application of mist. The spacing of the nozzles is dependent on the make, height and water pressure and this information is given by the manufacturers. The timing of the mist is also a very important consideration. The timing system should be controlled by a 24 hour time clock which turns on at dawn and off at dusk. The exact length of the misting period will depend on each individual setup. The poinsettia is a very succulent plant and when the cuttings are first "stuck" they should be misted frequently to prevent wilting. When the cuttings have caloused (about 10 days) the frequency of the mist should be reduced to about half. This will harden the cuttings and reduce severe wilting when the plants are finally removed from the propagation bench.

Perlite, peat moss and perlite, vermiculite, sand or other porous well-drained material can be successfully used as a propagation media. Another consideration is the rooting of the cuttings directly in small sized pots or peat pots. Clay, plastic and peat pots have been used with equal success. The media should be a well drained porous mixture. We have used a mixture of one part soil, one part sand and one part peat moss. The advantages of using small pots for rooting are (1) better spacing of the cuttings (2) less root breakage when repotting (3) saving of potting operation (4) reduction in spread of disease because of less handling and separate containers.

Under this method of propagation the cuttings should be left until the roots are to the outside of the pot. During the summer this normally requires about 21 to 25 days. Since the plants are under the mist for a long period of time it is necessary to fertilize. Starting fertilizing after 10 days with a half strength (1¼ pounds per 100 gallons) of a complete fertilizer. This should be continued

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every three days until the plants are removed from the propagation bench.

Bottom heat is another prerequisite for successful mist propagation. This can be achieved with lead or plastic heating cables, low voltage heating (N.Y.S.F.G. Bul. 115) or heat pipes under the bench. The bottom heat temperature should be 70° F and the air temperature a minimum of 65° F.

One of the big advantages of using mist for propagation is that no shade is necessary. From our observations the brighter the season the faster the poinsettia cuttings will root.

SUMMARY

150 cuttings of the variety Barbara Ecke Supreme have been obtained from stock plants by:

- (1) using a large container with good drainage and a good soil mixture.
- (2) frequent watering (3 times each day if necessary).
- (3) following a regular fertilization program (alternating with 2½ pounds potassium nitrate and a complete fertilizer per 100 gallons of water twice a week).
- (4) liberal spacing (at least 6 sq. ft. per plant).
- (5) growing the plants at high temperatures (65° F plus).

The propagation of these extra cuttings can be improved by:

- (1) using a good mist system.
- (2) use either a well drained propagating media or propagate directly into pots.
- (3) use a bottom heat of 70° and an air temperature of 65°.
- (4) start fertilizing the cuttings after 10 days with a complete fertilizer and repeat every three days.