



# MINNESOTA STATE FLORISTS' *Bulletin*



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## POINSETTIA NOTES

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A well prepared soil makes the task of growing quality poinsettias much easier. At the University we use a soil mix containing two parts soil, one part sphagnum peat moss and one part sand. If your starting soil is rather acid, a four-inch potful of pulverized limestone may be mixed with three bushels of the peat moss before it is mixed with the soil, in order to prevent too low a pH. Recent work at the University of Maryland (4) indicates that a low soil pH (4.8-5.0) may be quite helpful in controlling *Thielaviopsis* (black root rot). If this work is confirmed on a larger scale the addition of lime may not be necessary. This method of control through low soil pH is an additional precaution to take, not a substitute for sterilizing soil, benches, etc. Some growers who have an adequate supply of manure may wish to substitute well rotted manure for the sphagnum peat moss. In all instances it would be wise to add a four-inch potful of superphosphate (0-20-0) to three bushels of soil in the starting soil mix, unless soil tests indicate an adequate phosphorus level in the soil. Nitrogen and potassium may be added later as soil tests indicate the need.

## Stock Plants

Plant stock plants in large containers with good drainage in order to obtain a maximum of high quality cuttings. Cornell University tests (2) showed that the minimum temperature at which the stock plants were maintained greatly influenced the number of cuttings obtained. Plants of Albert Ecke variety were potted on May 30 and checked on May 17. Those plants grown at a 50°F. minimum were not leafed out; plants grown at a 60°F. minimum had just begun to leaf out; plants grown at a 70°F. minimum displayed appreciable growth; and plants grown at an 80°F. minimum displayed almost twice the growth of the plants grown at 70°F. Average cutting production per plant at the end of the season from No. 1 Albert Ecke stock plants was as follows:

Temperature	Cuttings
50°F.	51.1
60°F.	70.5
70°F.	98.2
80°F.	112.2



It may be concluded from this work that stock plants should be grown as warm as is economically possible. A night temperature of 80°F. will tend to bring in some of the increased production early in the season before cuttings are desired. On this basis the 70°F. temperature minimum would tend to be more desirable.

### Cuttings

In 1952, Cornell University<sup>(3)</sup> reported that the number of cuttings obtained from stock plants is greater when each cutting is made so that two leaves remain on the stock plant than when more leaves are left. Cutting production from No. 1 Improved Albert Ecke plants grown at a minimum of 70°F. was as follows:

Number of leaves left on stock plant when cuttings were removed.	Average number of cuttings per stock plant (June 25 to Oct. 5).
6	20.8
4	30.8
2	62.6

Early cuttings usually present a problem because the plants become tree-like if they are not starved, and starved plants seldom make a top quality finished product. Pinching or topping of early shoots when they are 6 to 8 inches long will avoid the necessity of taking cuttings several weeks before desired. Pinched shoots will produce new cuttings within a month. Size of cuttings will vary with the time of season and the grower's ideas. Cuttings four to six inches long usually make the best plants. In the latter portion of the propagating season cuttings six to eight inches long are preferable, as the length of the growing season is limited and stronger plants result. Cuttings which are small in stem diameter usually produce much stronger cuttings if allowed to remain on the stock plant an extra week.

If stock plants are crowded, only the top growth makes good cuttings. Space the plants so that the leaves barely touch, keep the soil relatively moist and provide nutrients as needed to keep the plants in top condition. We have not found that running the stock plants dry before taking cuttings improves rooting; but rather that cuttings wilted more than usual and a lower percentage of rooting resulted. Ohio State<sup>(1)</sup> reported similar results. Many growers follow the practice of taking cuttings early in the day or on cloudy days when the cuttings are most turgid to avoid wilting.

Dipping of cuttings in water for five or ten minutes before sticking has failed to improve rooting, according to our tests.

### Rooting

Visits to six commercial poinsettia growers will usually show six different methods of propagation. Individual growers often vary their methods from year to year depending on the results of the previous season. Some variation in practices may be necessary because of differences in individual establishments. Despite these factors we will tell you of our experiences at the University over the past few seasons. We have tried sand, vermiculite, perlite, and mixtures thereof. We have tried building up the sides of the bench and covering the top, producing what some growers refer to as sweat-box conditions. We have tried running stock plants dry and we have tried dipping the cuttings in water before sticking. Our conclusions are as follows:

Washed coarse sand, five inches deep, has proven best under our conditions. The sand should be sterilized in the bench before using and between crops; but if this is impractical, a fermate drench (one ounce to four gallons of water) should be applied before sticking the



cuttings. This procedure has given good results in our greenhouse.

Only those leaves which are attached to the stem below the sand line are removed from the cutting before sticking. All cuttings are treated with a root promoting substance. If the root promoting substance does not contain a fungicide, mix the powder with fermate at the rate of 1 part fermate to 19 parts root promoting substance. Larger ranges which use appreciable amounts of root promoting substances may find it much more economical to make their own mixtures. Indole-3-butyric acid can be diluted with talc (both are obtainable from wholesaledrug supply houses) to provide the equivalent of some of the commercial mixtures now in use. A thorough mixing of the two materials is essential.

Pack the sand before sticking and place the cuttings deeply in the sand. Deep placing spreads the leaves and brings them in closer contact with the sand, thus reducing water loss from the cuttings. Deep placing increases the amount of space required but warrants the greater space by providing quicker rooting. Avoid overlapping of the leaves to prevent unnecessary rotting. Gently press the sand against the cuttings as hard packing injures the stems. Follow with a light watering to settle the sand around the stems.

At the University we have a layer of double cheesecloth about four feet over the bench and another cheesecloth screen hanging along the south side of the bench. The screens act as baffles against direct drafts from the ridge ventilator and as a source of shade from the sun when necessary. The screen along the south side of the bench can be pushed aside when desired. Sides of the benches are not built up as we found this precaution was not very helpful. Cuttings are given as much light as possible without causing wilting of the cuttings. The temperature of the sand is maintained at about 68°F. Bottom heat is necessary during cool spells. The secret of success with this system is to water the cuttings daily. There is little danger of overwatering unless the bench is not properly drained. During especially hot, dry weather the cuttings are misted overhead several times during the middle of the day in preference to heavier shading. Some shade is on the greenhouse glass throughout the summer.

Removal of rooted cuttings from the sand before the roots are over one inch long, preferably shorter, will reduce the shock of transplanting. If stem rot develops, it can be controlled by drenching the infected area with a fermate solution at the rate mentioned previously. Excessive amounts of fermate will hamper rooting of poinsettias.

Other phases of poinsettia culture have been described in previous issues of this bulletin. Be sure to follow the advice given on black root rot prevention and control by Dr. Dosdall in the December 1, 1952, issue.

#### References

1. . 1953. Poinsettia stock plants. Ohio Florists' Assoc. Bul. 285:4.
  2. Post, Kenneth, Arthur Bing, and F.F. Horton. 1951. Keep poinsettias hot. N.Y. State Flower Growers' Bul. 68:5-6.
  3. Post, Kenneth, and F.F. Horton, 1952. Low cut increases poinsettia cuttings. N.Y. State Flower Growers' Bul. 78:11.
  4. Shanks, James B., and John R. Keller. 1954. Low pH joins sanitation measures in fight on poinsettia root rot. Florists' Exchange and Horticultural Trade World, April 24.
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