LINES BY LARSON

- Easy Ways to Grow Poor Poinsettias

There are many ways in which the poinsettia grower can produce a poor crop. However, the following ways are known to be effective in insuring a crop of poor quality.

1. Use weak cuttings - - experience has shown that cuttings which are small and weak will not root as quickly nor in as high percentages as when the cuttings are about 4" long, and the stems are of a good diameter. The grower can also decrease the percentage of rooting by neglecting to use mist. To further assure failure, the grower could take the cuttings from stock plants which have been crowded and inadequately fertilized.

   These propagation practices, which will result in a decreased number of rooted cuttings, will enable the grower to spend more time doing things other than transplanting rooted poinsettia cuttings.

2. Use dirty pots, non-sterilized soil and benches - - root rot pathogens are very effective in decreasing the quality and quantity of poinsettia plants. A high population of these pathogens can be attained if the grower ignores all the recommendations that have been frequently proclaimed in the last ten years. The diseases will be more destructive if improper temperatures and watering practices are maintained.

3. Withhold fertilizer - - poorer plants can be readily produced if the grower will withhold fertilizer. The resultant loss of leaves can be concealed by some ingenious means, and the smaller bracts will be easier to wrap.

If the grower would observe the above procedures, he could spend the Christmas holidays caroling, attending parties, and enjoying festivities that people in other occupations have observed for years. In the midst of his joyous holiday season, he could occasionally think of his unfortunate colleague who followed a different growing procedure and is now burdened with the task of delivering the high-quality poinsettia plants and having to add up the day's receipts.

For the grower who would prefer to be confronted with the tasks of selling and accounting rather than caroling and celebrating, the procedures are outlined in the following article.

- Ways to Grow Good Poinsettias

1. Propagation - - take good cuttings. Vigorous cuttings will give the grower a good start towards a good crop. The best of cuttings will not root under poor propagation conditions, however. Adequate moisture, light, and bottom heat will result in faster rooting with a higher percentage of rooting.

   A very common practice in propagation is to crowd the cuttings in the propatation bench. The use of 2 1/4 or 3" pots makes it necessary for the grower to space the cuttings and some of the success with pots may be due to this factor.

The necessity for careful sanitation practices in poinsettia propagation cannot be over-emphasized. Some poinsettia growers have already been troubled with Bacterial soft rot this year. The soft rot can be avoided by sterilizing the propagation medium and bench and rigidly following a clean program.

Fertilizer should be applied about ten days after the cuttings were first stuck in the propagation bench, particularly if mist propagation is being used. A recommended rate for the first fertilizer applications is 1 1/4 pounds of a complete fertilizer per 100 gallons of water. This can be repeated every three days until the cuttings are removed from the mist.

2. Later cultural program - - If the grower has followed a good cultural program for the first three weeks, he is well on his way to a successful and profitable poinsettia crop, but there are still some extremely important points to observe.

   A. Use of lights - - For accurate timing of poinsettias, it has been found helpful to use lights from September 20 to October 5-10. Gartner and McIntyre were among the first research workers to study poinsettia lighting, and the practice has been successful in North Carolina and throughout the country.

      If you have not tried this practice before, it is strongly suggested that you try it for the first time on a limited scale. The same lighting procedure can be used for poinsettias as is used for mums (lights from 10:00 P.M. to 2:00 A.M. at an intensity of 10-foot candles should be sufficient).

      Table 1 can act as a guide to the poinsettia grower who wishes to use lights to October 10. This work was done by Langhans and Larson at Cornell and is based on the results of several years of study. The variety used was Barbara Ecke Supreme.

      The grower will note in Table 1 that bract color was not showing on any plants prior to November 29 (after Thanksgiving Day), except with the 65° Night, 70° Day, 9-hour day length treatment. All plants were salable for Christmas.

   B. Temperature control - - There are many sources of information on the best temperatures to use for poinsettias. Generally speaking the warmer the day temperature, the sooner flowering will occur. Flower initiation will be more rapid at 60° F than at 65 or 70° night temperatures, but subsequent development will be more rapid at the warmer temperatures. A temperature combination of 65° night, 70° day will result in plants of good quality and the devastating effects of the root rots will be lessened.

   C. Fertilization - - Many growers are of the philosophy that a "starved" poinsettia plant is better than an excessively tall one. The practice of withholding fertilizer will usually result in a shorter plant than when an adequate fertilizer schedule is followed. One characteristic symptom of a lack of nutrients is the dropping of foliage. This can adversely affect the salability of the plant to the same extent as excessive height. The keeping quality of the plants in the home will also be adversely affected.

Table 1. Guide to the poinsettia grower who wishes to use lights to October 10

Treatment	Start of Short Days	Date of Bud	Date of Color	Date Stamens Showed	Condition for Christmas
Natural day length					
60°N 60°D	10/10	11/20 (40 days)	12/6 (57 days)	*	Green but Salable
65°D	10/10	11/20 (40 days)	11/29 (49 days)	*	Salable
70°D	10/10	11/20 (40 days)	12/2 (53 days)	12/31 (82 days)	Salable
65°N 60°D	10/10	11/20 (40 days	12/6 (57 days)	12/31 (82 days)	Salable
65°D	10/10	11/13 (33 days)	11/29 (49 days)	12/24 (75 days)	Salable
70°D	10/10	11/15 (35 days)	11/29 (49 days)	12/18 (69 days)	Salable
70°N 60°D	10/10	11/22 (42 days)	12/13 (64 days)	12/31 (82 days)	Salable
65°D	10/10	11/20 (40 days)	12/18 (69 days)	12/24 (75 days)	Salable
70°D	10/10	11/15 (35 days)	12/6 (57 days)	12/18 (69 days)	Salable
9 hour day length					
60°N 60°D	10/10	11/22 (42 days)	12/2 (53 days)	-	Salable
65°D	10/10	11/13 (33 days)	11/29 (49 days)	-	Salable
70°D	10/10	11/20 (40 days)	11/29 (49 days)	12/31 (82 days)	Salable
65°N 60°D	10/10	11/13 (33 days)	11/29 (49 days)	12/31 (82 days)	Salable
65°D	10/10	11/15 (35 days)	11/29 (49 days)	12/24 (75 days)	Salable
70°D	10/10	11/13 (33 days)	11/22 (42 days)	12/18 (69 days)	Salable
70°N 60°D	10/10	11/20 (40 days)	11/29 (49 days)	12/24 (75 days)	Salable
65°D	10/10	11/15 (35 days)	12/2 (53 days)	12/18 (69 days)	Salable
70°D	10/10	11/20 (40 days)	12/6 (57 days)	12/18 (69 days)	Salable

The application of fertilizer every 10 to 14 days, at a rate of 2 1/2 pounds per 100 gallons of water, should be satisfactory. Success has been realized when a complete fertilizer such as 20-20-20 or 17-17-17 has been alternated with potassium nitrate. The grower who is using a fertilizer injection system can readily plan a suitable program.

D. Root rot control - - This problem has been widely publicized but the problem cannot be over-emphasized. Warm temperatures (65-70° night) will generally enable the grower to avoid the worst ravages of the root rot pathogens, primarily because of the good root systems formed at such temperatures. At 50 to 60°, the root growth will not be as luxuriant, and the root rot pathogens can be very effective.

It has been shown that root rots will be curtailed at a soil pH of 5.0, whereas damage may be severe at pH 7.0. The plant will grow well at either pH.

Soil moisture also has an effect on root rot damage. Pythium will be much more of a problem in wet soil, and a well-drained soil is one way to lessen the problem. Rhizoctonia will thrive in a dry soil, but PCNB (Terraclor) will specifically control that fungus.

The most effective way to avoid the root rots is to thoroughly sterilize the soil, benches, tools, etc. Some soil drenches have been recommended but these do not take the place of a good sterilization program. Some new drench materials are being tested this year at North Carolina State College and perhaps some good materials can be recommended in the future.

E. Height control - - The use of CCC (Cyococel) for height control was reported in the July issue of this bulletin and will not be repeated here. The grower should definitely follow the directions of the manufacturer.

F. Panning - - There is a strong belief in the floriculture industry that poinsettia plants should be panned early in the season, before the flower buds have initiated. Leaf drop and poor bract formation are listed as results of late panning.

Varieties that were used 15 to 20 years ago may have responded in such a manner when the plants were panned in late October or early November; however, recent work with the variety Barbara Ecke Supreme showed that the best plants were obtained when the plants were panned as late as November 30. Selections could then be made as to the arrangement of the flower heads in the container. With early panning the grower has no choice in the matter.

The practice of late panning will be improved if 3" pots are used in propagation and if the plants are adequately watered and fertilized.

The results of late panning are shown in Figure 1.

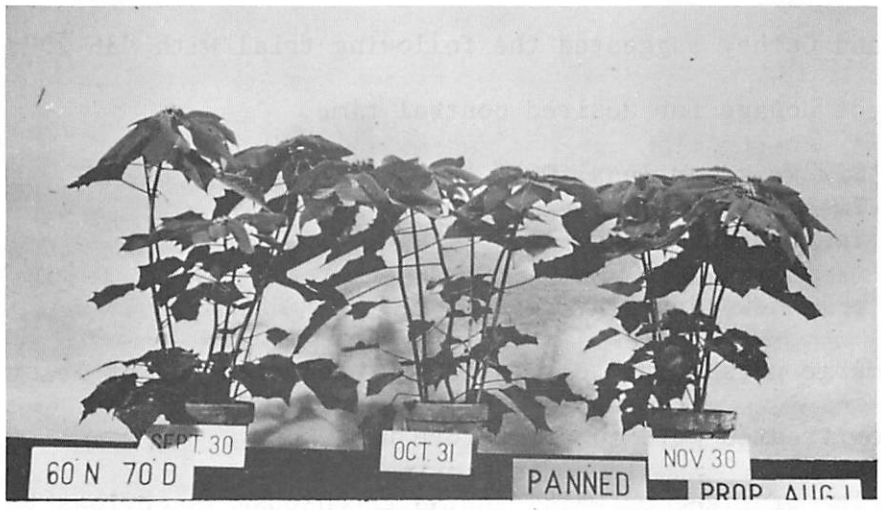

Figure 1. Photograph of poinsettias panned September 30, October 31, and November 30. Note that with later panning pots are better balanced as to bract size and plant height.

Once again, the grower who has never panned poinsettia plants in late October or early November should only try it on a limited scale.

G. Marketing - - This is a phase of poinsettia growing that is given too little attention by the growers.

The stage of maturity of the flower at the time of sale has been given a great deal of attention by research workers studying the effects of lighting and temperature control. Some of this consideration has been passed along to the grower, who for too many years simply stated that the customer wanted a plant that was actually over-mature at the time of sale. More precise growing methods have enabled the grower to time the crop for Christmas so the keeping quality of the plant will be prolonged when placed in the home.

The poinsettia crop has been widely studied in recent years and the number of recommendations that have been made can be staggering to the grower who has been making an effort to keep up with the literature. However, the progressive grower who has brought his poinsettia cultural program up-to-date can now produce a better crop in less time than he could a few years ago.

- Algae and the Greenhouse Operator

Algae are described as microscopic plants, but the difficulties they present to the greenhouse operator are by no means small. Algae on clay pots, walks, and cooling pads are just three of the problems.

Investigations with the use of No. "36-20" have indicated that the problem of algae on clay pots can be greatly reduced with this material. Researchers at Colorado, Texas, Michigan, Beltsville, and North Carolina State College have worked with this material. Consult the Florists' Review of June 21, 1962, for more complete information.

Stuart and Cathey suggested the following trial with "36-20":

1. Select dosage for desired control time.

    a. Six weeks or less, 0.1% "36-20".
    b. Twelve weeks, 0.5%.
    c. Twenty-four weeks, 1%.

2. Use only new, dry clay pots.

3. Submerge pots completely in "36-20" solution for at least two minutes.

4. Allow treated pots to dry before use.

The problem of algae on walks in the greenhouse is obvious to anyone who has fallen, nearly fallen, or been sued. Copper sulphate crystals sprinkled on the walk will clear up the situation. For continuous control, repeat applications periodically.

Algae on cooling pads is a big problem that has not been thoroughly solved. Copper sulphate and copper naphthanate have been successfully used to eliminate algae, but salt accumulation on the pads and corrosion of the wires have resulted. Clorox (calcium hypochlorite) has not resulted in salt accumulation or corrosion but its effectiveness may be limited. Experimental evidence is presently lacking, but at least a 5% concentration of clorox appears to be necessary. This would be equal to 2 1/2 gallons of clorox in a 50-gallon tank.

"36-20" has not been effective on pads according to work done in the western part of the country.

J. C. Delk at Asheboro treats his pond for algae control and consequently has no algae in his cooling pads. The Fish and Wildlife Service has a publication, Circular 19, in which they recommend copper sulphate at a rate of 1 ppm. You must know the area and volume of your pond before accurate amounts can be added. Do not use the weed control chemicals often recommended for fish ponds, as most greenhouse crops are very sensitive to such materials. If you are skeptical about using a certain chemical, don't use it. Mistakes with such materials are not easily corrected.

- Cleaning Greenhouse Glass

The following comments are not related particularly to removal of shading compounds, but rather with the removal of dirt and films present on many greenhouses. August may seem a strange time to talk about increasing light intensity, and it is too early to remove shading compound from your houses. However, it isn't too early to start thinking about ways to increase light intensity during the fall and winter months.

Sometime critically examine the amount of dirt and film on your greenhouse glass. Examining the glass is the easiest job. It is much more difficult to figure out what cleaning material to use, and harder yet to use it.

An excellent article pertaining to dirty glass appeared in the Ohio Florists Association Bulletin #384, September 1961. A recommendation of Mr. Henry Doherty of the Winandy Greenhouse Construction Company is quoted below:

"If you wish to clean the glass on the outside of your greenhouse without removing it, then I would suggest again the hydrofluoric acid method, that is, use hydrofluoric acid, 70% commercial, diluted one part of acid to nine parts of water. Scaffold up the roof of your greenhouse and with the diluted hydrofluoric acid solution in wooden buckets, brush it onto the glass on the roof of the greenhouse. Leave it on as much time as needed to cut the dirt and scum off of the glass, then have one man to follow with a hose and wash acid off of the glass thoroughly.

"Of course, if your houses are leaky and the acid solution leaks through on the plants, it will burn them if left on for any length of time. The best way to prevent this would be to try to do it when the house is empty underneath, or if you must do it with a crop in the house, have a man inside with a hose spraying the plants with water to wash off any acid that drips through from up above.

"You must be very careful in using this acid, either in the 70% or the diluted form, and the people working with it should use an acid resistant apron, rubber boots, and acid resistant rubber gloves of the long type that reach up over the lower arms. If they get any of this acid on them, they should wash it off thoroughly with water right away. This is the only material that will really cut the dirt, etc., off of the glass. All containers for this must be wood and the acid must not be left on the glass any longer than needed to do the job, or it will etch the glass."