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START CHRISTMAS 1972 CYCLAMEN NOW[1]

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Flowering cyclamen plants are very attractive. Why, then, are so few sold? One reason is that most northern growers take 15 months to produce their plants, necessitating a relatively high sale price. In addition, many persons believe that cyclamen are short lived in the home.

Keeping Quality

Last February, 30 pairs of cyclamen plants were placed in 30 different Twin Cities homes to determine their useful life, consumer preferences, and other factors. The plants were in 5-inch plastic pots and usually were 12 or more inches in diameter. Cooperators were asked to place the plants in a sunny or bright location at a cool night temperature and to water plants before they wilted.

'Idol Osana' cultivars remained in good condition for 36 days and plants of 'No. 7 Bonfire' (Astoria Bright Salmon Red) for 43 days. Plants grown in moss peat and in soil required similar care, but plants in soil wilted quicker than those in moss peat, whereas plants in peat showed nutrient deficiency symptoms quicker. A preference was indicated for small, compact plants. Thus, if proper cultivars are grown and a few instructions accompany the plant, keeping quality should not be a problem.

Production Schedule

Research studies at the University of Minnesota during the last 2 years indicate that good sized, attractive flowering plants can be produced in little more than half the 15 months considered essential by many growers.

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Although the studies are not complete, the following schedule is offered for your consideration. Try it on a portion of your crop and inform us of your results.

1. Select early flowering cultivars. 'No. 7 Bonfire' has worked well.

   We are told that 'Hallo' and 'Improved Bonfire' are even better.

April 1

2. Sow seeds April 3, 1972. Seed sown in peat pellets (Jiffy 7's) germinated quicker and at a higher percentage and made faster growth after germination than did seed sown in nutrient enriched moss peat in flats. Seed should be covered lightly with moss peat after sowing. This system does not require more labor than sowing in seedling flats and then transplanting later to a wider spacing, because the plants are already potted and spaced. The pellets may be placed in flats or trays that can be stacked with space between trays for air circulation and placed in the dark at 66°-68° F. Temperatures of 72° F. and above inhibit germination, so do not place the pellets in the greenhouse at this stage.

May 1

3. Move the pellets to the greenhouse, as some seed will be germinated and the young plants require light. Continue at a night temperature of 66°-68° F. and close to that in the daytime, if possible. Provide partial shade through August. Full summer light intensity will cause foliar injury.

June 15

4. Provide high intensity illumination throughout the night. Currently, we recommend four 110 W VHO cool white fluorescent tubes suspended 10 inches above the plants. Four tubes above a bench 40 inches wide will illuminate approximately 26 square feet of bench space at a cost of 16 cents per 10 hour night for electricity (Twin Cities commercial rate). At this stage, with no space between the peat pellets, you are lighting 910 plants for 16 cents per night. Continue at a night temperature of 68° F. in as far as weather permits.

July 3

5. Plunge the pellets in nutrient enriched peat at a 3 by 3 inch spacing. At this stage, you will light 416 plants for 16 cents per night. In our studies, we started the lights June 23 and continued through September. Lighted plants bloomed 1-3 weeks earlier and produced two to three times as many flowers at an earlier peak of bloom (the span of the bloom period was shortened). The earlier period of lighting suggested is to permit more efficient use of the lights. Discontinue lighting when the plants are potted. Continue at a night temperature of 68° F.

August 1-15

6. Plant in 5-inch plastic pots in nutrient enriched moss peat. Ten percent soil was mixed with the peat in the Christmas, 1971 study to decrease loss of nutrients by leaching. Either potting material or a well-prepared soil

is satisfactory. Plants may be placed pot to pot at this time to conserve space (5½ pots per square foot). Delaying the potting date appreciably usually delays flowering. Continue at a night temperature of 68° F.

September 15

7. Provide final spacing of one plant per square foot. Although the plants may not require a full square foot immediately, they grow very rapidly and respacing every few weeks requires appreciable labor.

October 15

8. Reduce night temperature to 65° F.

October 16

9. Spray with gibberellic acid A_3 (GA) at 25 p.p.m. (with a safe wetting agent). Insert nozzle below the leaf canopy so the small flower buds are wetted (see instructions for Nov. 1).

October 31

10. Reduce night temperature to 62° F. Maintaining a night temperature of 68° F. after this date resulted in abortion of many flower buds and softer plants with reduced keeping quality. Temperatures below 60° F. significantly increased incidence of Botrytis cinerea (Botrytis blight or crown rot). No chemical treatment was required for disease control in our studies (presumably because of the temperatures maintained).

November 1

11. Spray a second application of 25 p.p.m. GA. The GA accelerates the start of flowering by at least 2 weeks with two to three times as many flowers produced at a peak that is also advanced a minimum of several weeks. In our studies, GA was applied at rates from 10 to 100 p.p.m. at a night temperature of 68° F. Further studies are necessary to determine if the 25 p.p.m. rate is also the most desirable at lower temperatures and on other cultivars besides 'No. 7 Bonfire'.

December 15

12. Just a few unsold plants remain 8½ months after the seed had been sown.

Other Cultural Suggestions

Fertilization. Best results will be obtained only if the plants are fertilized properly to insure continuous growth. Cyclamen plants will not yellow quickly as do many plants when the nutrient supply is inadequate. Some fertilizer should be applied to the peat pellets once the plants are actively growing, and to the peat in which they are plunged starting 2-3 weeks after planting. Avoid nutrient excesses, which will slow growth. Apply no fertilizer for 2 weeks after potting. Then apply a complete fertilizer with 100 p.p.m. nitrogen and 100 p.p.m. potassium (not potassium oxide) with every watering. One part of potassium oxide (K_2O) is equal to 0.83 part of

potassium. Increase the amount to 150 p.p.m. 75 days after potting. Have your growth medium analyzed at intervals to insure appropriate nutrient levels.

Corm level. Keep the corm flush with the top of the growth medium to encourage the development of broad plants. No rot should develop if you maintain the recommended temperatures and keep the growing areas clean.

Watering. Cyclamen should not be allowed to wilt. Adequate liquid should be applied with each watering to thoroughly wet the root ball. When moss peat is used as a growth medium, it should be watered before it becomes light in color from dryness.

Production Cost

The suggested system is not final and more research studies are required. The results thus far indicate that cyclamen production methods can be and must be updated. No carbon dioxide (CO_2) was used in these studies. Cyclamen respond favorably to CO_2 supplemented atmospheres. This and other possibilities indicate that 6 month cyclamen may be a part of your future.

Based on average greenhouse production costs of $3.65 per square foot per year, the cost of producing cyclamen by the schedule provided herein should be approximately $1.

Reduced production costs through optimized systematic crop schedules should enhance the possibility of greatly improved retail sales in the near future.