

# Hardy Mum Pot Plants for Mother's Day

Anton M. Kofranek\*  
Department of Floriculture  
Cornell University

Hardy mums in flower make excellent pot plants for Mother's Day when the flowering is controlled by the use of lights and black cloth. This treatment produced short compact plants with many flowers for Mother's Day, 1949. Rooted cuttings, planted and given short days were pinched 19 days after planting. The short days were continued 20 days after pinching and then plants were allowed to bloom under natural long days. This treatment gave unusually large flowers on long pedicels resulting in compact plants six to eight inches tall. Figure 1 illustrates the result of such a treatment.

Hardy mums for Mother's Day are the dual-purpose pot plant because they can be cut back after they bloom and planted in the garden where they will bloom again in the fall. This is a real sales appeal at present when the public is looking for more for their money. Plants cut back in early June, and planted in the field, bloomed from late September through to frost. They gave a beautiful display of color.



Fig. 1

The result of 39 short days followed by natural long days to bloom.

## Treatments Tried

Rooted cuttings were potted one in a three-inch pot on March 11, 1949, and all plants were pinched on March 30. The six treatments tried follow:

- A. Short days immediately and continued until April 9; long days from April 9 to bloom.
- B. Short days immediately and continued until April 19; long days from April 19 to bloom.
- C. Short days immediately and continuously through the flowering period.
- D. Long days until the pinch (March 30) and short days thereafter until flowering.
- E. Long days until April 6 and short days thereafter.
- F. Long days until April 13 and short days thereafter.

Supplementary light, from 60-watt lamps, placed five feet apart, was used to April 25 on plants requiring a long day in the experiment. After April 25, the days were naturally long and supplementary light was not necessary to produce a long day. Black cloth was used to shorten the days after April 15 when short days were required in the experiment. The days were naturally short enough for bud formation and development until this date and no treatment was necessary to produce a short day. A minimum night temperature of 60°F. was maintained.

The varieties used were Allegro, Mrs. DuPont, Red Velvet, Early Yellow, Early Bronze, Aviator, and King Midas. Eight plants of each variety were used in each of the six treatments.

After there was no danger of frost (June 3, 1949), the plants were cut back to a height of 2 inches and planted in the field at a planting distance of 18 by 20 inches.

## Results in 1949

The plants which were given short days from the time of potting until bloom (treatment C) were the first of any to flower. These plants flowered just before Mother's Day (May 8, 1949) but the plants were rather short (5 to 6 inches high). The number of flowers ranged from 6 to 9 per plant.

The best quality was obtained when the plants were allowed to bloom under natural long days after they had been given 39 short

\* The author expresses his appreciation to Dr. Kenneth Post for his advice and encouragement during the course of this work, and to Mr. F. F. Horton and his staff for taking care of the plants. Cuttings were donated by Neal Brothers, Inc., Toledo, Ohio.

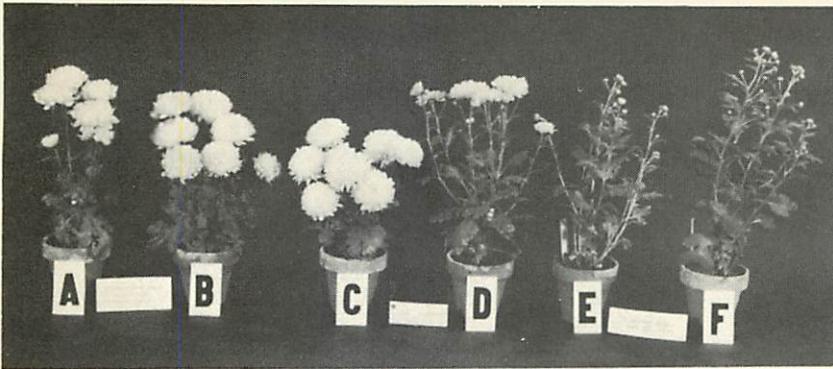


Fig. 2. Plants representing treatments tried.

days (treatment B). The long days elongated the pedicels and produced larger flowers, but gave 1 to 2 less flowers per plant than the continuous short day treatment (treatment C). Flowering was delayed only 8 to 10 days by the long day treatment and the delay was offset by the better quality which resulted.

Plants given only 29 short days, before the long day treatment (treatment A), became leggy, produced few flowers and were undesirable. Sufficient time was not allowed for the buds to form and partially develop before the long days.

Plants given 19 long days after potting and then allowed to bloom under continuous short days (treatment D) were tall and produced crowded terminal flower clusters. The continuous short day treatment after the buds had initiated did not allow for the pedicels to elongate. This is shown in figure 2 (D). These plants bloomed May 30.

Plants given short days starting 7 or 14 days after pinching (March 30) (treatments E and F, respectively) were leggy and produced crowded terminal bud clusters. These plants had not yet bloomed when they were cut back to be planted in the field (June 3).

Plants given short days from the day of potting until they were budded (Treatments A, B, C) required 30 days to show flower buds. Plants given long days for some time after potting, followed by short days to bloom, required an average of 24 days to show visible buds. It required about 6 days for the plant to become "established" after transplanting before it started to set buds under short day conditions. In other words, no additional time is gained by trying to bud the plants with short days until about 6 days after potting the cuttings.

#### Field Results

The plants bloomed in the field starting September 21 and they continued to bloom until frozen. They were from 14 to 26 inches high and 18 to 24 inches in diameter depending on the variety and previous treatment. Treatments A and B produced the most desirable size and shape field plants. Treatments E and F

produced the most dwarf and misshapened plants. Varieties Red Velvet and Allegro made the most striking display of flowers and form of plants in the field.

In these experiments the varieties Allegro, Red Velvet, Early Bronze, and Mrs. DuPont made the best pot plants and the best garden plants. Other varieties tried showed no promise in forcing for Mother's Day.

#### SUMMARY

1. Hardy mums were forced as pot plants for Mother's Day and bloomed again as a garden plant in the fall.
2. The best treatment in 1949 was 39 short days from the day of potting followed by long days to bloom.
3. The best varieties for this treatment were Allegro, Mrs. DuPont, Red Velvet, and Early Yellow.

#### Recommendations for 1950

The following recommendations can be made for blooming hardy mums for May 14, 1950, from information gained in this experiment. Use only those varieties of hardy mums that normally bloom before October 5. Use only strong cuttings which are free from stunt and have been given long days. Plant 3 cuttings in a six inch pan.

1. Pot rooted cuttings on March 1 (under lights).
2. Remove lights on March 6 (return to normal daylength).
3. Soft pinch on March 21 (normal daylength).
4. Lights over plants on April 14.
5. Remove lights and start black cloth treatment on April 26 and keep under cloth until Mother's Day.

Plants similar to figure 1 should be obtained if this schedule is followed.

If most of the plants are in bloom before Mother's Day, it is well to remove the black cloth and give long day conditions to delay maturity. This treatment will not harm the quality of the bloom.

In order to have the plants bloom again in the fall, cut them back to a height of 2 inches and plant in the garden after danger of frost is over. They should be planted in a sunny location at a distance of 18 to 20 inches apart.

\*\*\*\*\*