

METHODS FOR MUMS*

H. M. Cathey
U. S. Dept. Agriculture
Agricultural Research Service
Beltsville, Maryland

<u>Problem</u>	<u>Treatment</u>
1. Storage	1. Store unrooted cuttings up to 10 weeks in a constant 32°F, high humidity refrigerator. Remove carbon dioxide from storage atmosphere.
2. Rooting	2. Treat base of cutting with a talc suspension containing 0.1% indole butyric acid, 9.9% Ferbam.
3. Light-weight growing media	3. One-half bushel each of ground peat moss and Perlite. Thoroughly mix and moisten 4 oz. superphosphate (20%), 4 oz. dolomitic limestone, and 2 oz. 5-10-5.
4. Drainage	4. Drench at planting with a 0.1% non-ionic wetting agent to alter potential movement of water in the soil.
5. Keep clay pot algae free	5. Dip new clay pots for 2 minutes in 0.1, 0.5, 1.0% Para diisobutylphenoxy-ethoxyethyl dimethyl benzyl ammonium chloride (Hyamine 1622) (Algae-Go) for respectively 1-1/2, 4, and 12 months control.
6. Delay flowering -- incandescent light	6. Rated voltage of lamps, proper spacing and height of lamps. Separate light circuit into 5 equal areas. Program each area to receive 6 minutes light every 30 minutes, use for 4 hours year round, starting at 10 AM, ending at 4 AM.
7. Temperature for intermittent light	7. Less incandescent light (in total time) is required to delay flowering at 70° than 60°F. Increase percent light on, from 20 to 50%, to delay flowering of plants grown at 60°F or lower (15 minutes on, 15 minutes off).
8. Delay flowering -- cool white fluorescent	8. One minute of 1,000 footcandles of light any time from the 4th to the 8th hour of the dark period.
9. Delay flowering -- BCJ-Photographic safety lamp	9. From sunset to 2 AM in the morning, burn 100 watt lamps mounted 3 feet above plants, 3 feet apart.
10. Prevent rosetting of cutting	10. Grow known rosetting cultivars by keeping stock plants and cuttings at a minimum night temperature of 70°F. Replace stock plants after 3 flushes of growth.

*This information was presented at the 11th Annual Flower Growers Short Course, December 6-8, 1964.

<u>Problem</u>	<u>Treatment</u>
11. Retard stem elongation	11. Two weeks after start of short days, spray to run-off with 0.25% Dimethylaminosuccinamic acid (B-Nine). Spray again 2 weeks later during summer months. Keep foliage dry for 24 hours. Or, at planting time, drench soil with 6 to 8 oz. per 6-inch pan of a dilute solution of 2,4-Dichlorobenzyltributyl phosphonium chloride (phosfon). Use 1 teaspoonful of dry powder (10% dust or liquid) per gallon to 5 gallons of water depending upon cultivar.
12. Shorten peduncles	12. Two or three days before disbudding, spray the top third of the plant to run-off with 0.25% Dimethylaminosuccinamic acid (B-Nine). Keep foliage dry for 24 hours.
13. Lengthen peduncles	13. Five weeks after start of short days, spray to run-off with 0.001% gibberellic acid. Spray again the sixth and seventh week of short days. Remove center flower.
14. Retard water loss from non-flowering plants	14. Spray to run-off at weekly intervals with 0.001 to 0.005% phenyl mercuric acetate. Avoid excess dripping on ground or treating flowering plants. Use plastic sprayer and operator should be completely covered.
15. Increase number of disc florets	15. Second week after start of short days, spray to run-off with 0.1 to 0.25% Beta-hydroxyethyl-hydrazine (Omaflora). Spray again the 10th and 14th short day. Treat tall plants only.
16. Overcome heat delay on thermo-negative cultivars. Low temperature inhibition on thermo-positive cultivars	16. Five weeks after start of short days, spray to run-off with 0.0025 to 0.005% gibberellic acid. Spray again the 6th, 7th, 8th, and 9th week of short days. Remove center and lateral flower buds.