

*The Connecticut Greenhouse Crop Production Task Force has suggested adding 10-20% soil to peat-lite root media for more than a decade. This was based solely on observations that consumer satisfaction was improved. The following article reprinted from the New York State Flower Industries Bul. 153:4, 6/83, presents data confirming our concept.*

## **An Evaluation of Soil vs Peat-Lite Media on Post-Production Life of Selected Potted Chrysanthemums**

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There is criticism in the trade that plants grown in peat-lite media do not last as long in the home as those grown in soil-based media. This study was designed to test this hypothesis.

Three media were chosen: a commercially available peat-lite mix; the same commercial mix amended with a 20% by volume addition of steam sterilized soil and 1:1:1 by volume mixture of soil, sphagnum peat moss, and perlite. The 1:1:1 mixture received a preplant application of 20% superphosphate, ground limestone and 20-10-20 analysis fertilizer at 2 3/4 pounds, 2 3/4 pounds and 1 3/8 pounds respectively to one cubic yard of medium. The 20-10-20 was dissolved in water before application.

Rooted cuttings of 'Mandalay', 'Mountain Peak', and 'Capri' were supplied by Yoder brothers Inc. The first two are 10 week cultivars. 'Capri' is a 9-week cultivar. Planting was done May 18, 1982 with 5 cuttings placed in a 6-inch plastic pot. Short days were started May 24. The plants were in bloom July 27. All plants were fertilized at every irrigation with a 20-10-20 analysis fertilizer applied at 225 ppm N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O.

At full bloom three pots of each variety in each treatment were placed in the floriculture head house under 10 hours of cool white fluorescent light daily. Light intensity at plant level was approximately 25 fc. Room temperature ranged from 72 to 86°F (22-30°C). Each plant was placed in a shallow saucer so that any water applied was retained for later absorption by the root ball. The plants were watered approximately every third day. They were discarded when flowers and foliage were no longer considered to be aesthetically pleasing. The results of the study are given in Table 1.

There were greater differences in post-production life due to cultivar response to media than media alone.

'Mandalay' grown in peat-lite media lasted an average of 21.6 days compared to 23.5 days for plants grown in the

1:1:1, soil-peat-perlite. This was an approximate 8.8% reduction in lasting life. With 20% by volume soil added to peat-lite media there was 1.8% improvement in lasting life.

Table 1. Post production life in days of 3 selected cultivars of chysanthemums grown in 3 different media. Figures are averages of 3 plants.

Cultivar	MEDIA		
	Peat-lite	Peat-lite + 20% Soil	Soil Peat Perlite (1-1-1 vol)
'Mandalay'	21.6	22.0	23.5
'Mt. Peak'	23.0	27.3	27.6
'Capri'	14.0	22.0	23.0

The cv. 'Mountain Peak' showed a greater response than 'Mandalay' to the addition of soil in the media. The average lasting life of the soil amended peat-lite media and the 1:1:1 media was 19.3% greater than for the plants grown in peat-lite media alone.

The cv. 'Capri' exhibited the greatest difference of all three cultivars. Mums grown in the peat-lite media had a 37.8% shorter lasting life than the average for those in the soil amended peat-lite media and the 1:1:1 media.

Under the conditions of this experiment and with a very limited selection of plant species it appears that in two out of three instances the use of peat-lite as a growing medium resulted in a significant decrease in post production lasting life compared to plants grown in a soil amended media. These results should not be extrapolated to other chrysanthemum cultivars or plant species without further extensive testing of the hypothesis.

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This is the fifth edition of this cultural guide. Prepared by the Connecticut Greenhouse Crop Production Task Force, it contains new information on many subjects.