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Effects of Long Term Storage on Carnation Cuttings

by

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Unrooted carnation cuttings can be stored for six months and still give satisfactory performance. Some changes occur with time in storage, while other variations in cuttings taken at different times of the year could well be caused by differences in environment prior to the time cuttings were taken.

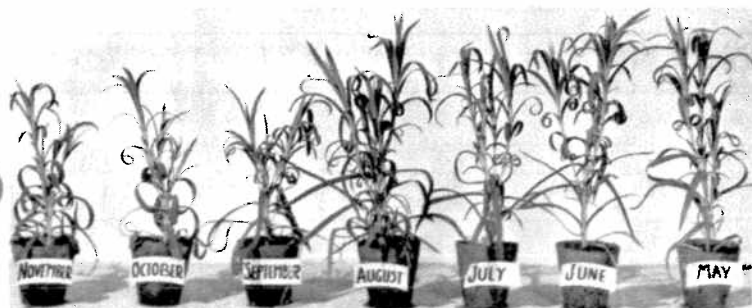
Unrooted cuttings of the variety Gayety were accumulated in a 33°F storage from May to November of 1960. The six monthly lots of cuttings (100 each) were taken from storage on November 10, and propagated along with a lot of freshly harvested cuttings. After rooting, all cuttings were potted in 3-inch peat pots and grown in a 45 to 55°F temperature regimen for 90 days. The plants were then pulled, their roots washed free of soil and individual fresh weights obtained.

It was recognized that each lot of cuttings was produced by a slightly different environment, however all cuttings came from the same mother block. Observations on the performance of these plants in order of the appearance of symptoms were:

1. Slight differences in color were apparent a few days after the cuttings were stuck in the propagating bench. Cuttings which had been stored two months or less were a good blue-green color, while those stored longer had increasingly lighter color. Cuttings in storage six months were yellowish green.

2. The lower pair of leaves was partially disintegrated following rooting on some of the cuttings from May and June, and a few July cuttings showed the same symptom. In no case did this breakdown involve the stem of the plant; the leaves affected eventually dried up.

3. The time to appearance of lateral breaks on the cuttings was least for those in storage six months and successively more as the time in storage decreased. This is indicated by the figure, for plants in storage the longest were taller.



This effect is probably due to the environment on the mother block prior to cutting harvest.

The table gives average starting weight, average final weight and the net gain in fresh weight per cutting expressed as a percentage of the beginning weight.

It is remarkable how close together are these gains in weight. The greatest percentage gain was from August cuttings and the least gain was from cuttings taken in November. This is probably a daylength response effect on the mother block, in which case one might expect cuttings taken in winter to grow even slower. Differences, however, were small. All of these plants would have made satisfactory planting stock.

Table 1. The effect of time in storage on gain in weight of Gayety carnation cuttings.

Month	Average fresh weight of cuttings taken in grams	Average final weight in grams	Gain as a percentage of starting weight
May	7.4	22.9	209
June	8.1	25.2	211
July	6.7	21.7	224
August	6.7	24.7	269
September	6.3	20.5	225
October	5.9	18.4	212
November	7.2	20.4	183