Carnation Cutting Storage

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Unrooted carnation cuttings were stored for six months at 31°F. Rooted cuttings were stored for four months at 31°F.

Why Store Cuttings?

The value of holding cuttings is threefold: 1) It will enable the grower to plan his crop more accurately. 2) It will reduce the number of stock plants that a grower will need to fulfill his requirements for cuttings. This would be done by accumulating the cuttings. 3) The grower will be better able to select his best cuttings, at the right time of the year and save propagation space.

Unrooted Cuttings

Four varieties of carnations were used in this work: Red Sim, White Sim, Pink Sim and Hercules. The cuttings were bundled 25 to a package; overwrapped with cellophane with no moisture added and placed at 31°F. Two bundles of each variety were removed every month. One treatment was placed directly into the propagation bench and the other treatment was conditioned in warm water for four hours at 40°F air temperature before being placed in the propagation bench.

Both treatments rooted equally well up to the fourth month. The number of cuttings that rooted in both treatments began to decline at the fourth month. The cuttings wilted after being placed in the propagation bench and did not regain tugor even though heavily shaded. The mist system (N. Y. S. F. G. Bul. #103) was used to propagate the cuttings removed from storage after six months. The rooting in this group was almost 100%. Disease was found in a few of the bundles removed after seven months. This was probably caused by a secondary organism beginning to work on the dead tissue. This was the first disease observed during the storage of 1200 cuttings.

Rooted Cuttings

The same four varieties of carnations were used for the work with rooted cuttings. Unrooted cuttings were successfully held in dry storage but rooted cuttings were not. The roots dried out during storage when the cuttings were stored dry. The cuttings grew when placed in the bench but not until they produced new roots. The cuttings stored with the rooting media left on the roots started to elongate their roots immediately upon being placed in the bench. There was a delay in the top growth of the dry stored cuttings of a week to ten days.

The rooted cuttings were, therefore, stored with the media left on the roots. Twenty-five rooted cuttings were placed in a metal can; covered with cellophane and placed at 31°F. A treatment of each variety was removed every month. The cuttings were placed directly into flats in the greenhouse. There was no irregularity observed in their subsequent growth. The storage was successful up to the fifth month. In the fifth month treatment, disease was observed and this was probably due to secondary organisms working on dead tissue.

RESULTS WITH ROOTING FOUR VARIETIES
OF UNROOTED CARNATIONS STORED AT 31°F

		Number of Months in Storage													
		1		2		3		4		5		6		7	
Variety	Treatment**	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR
Red Sim	1	25	0	25	0	25	0	15	10	10	15	25*	0	25*	0
	2	25	0	25	0	25	0	20	5	19	6	14	11	7	18
White Sim	1	24	1	24	1	25	0	15	10	14	11	25*	0	13*	12
	2	25	0	24	1	24	1	17	8	15	10	9	16	3	22
Pink Sim	1	24	1	23	2	23	2	17	8	13	12	25*	0	23*	2
	2	24	1	22	3	24	1	17	8	21	4	12	13		
Hercules	1	25	0	25	0	24	1	25	0	11	14	25*	0	20*	5
	2	25	0	25	0	25	0	25	0	20	5	12	13	12	13

** The treatment number one was planted directly from storage to the propagation bench. The treatment number two was hardened for four hours in warm water at 40°F before being placed in the propagation bench.

* These cuttings were placed in the mist propagation.

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