

by Seward T. Besemer

Packaging fresh flower buds in polyethylene tubing for retail sales

CARNATION BUDS were harvested from the greenhouse on February 13, 1974. The buds were at a stage with petals extending straight up from the perimeter of the calyx. 8 carnation cultivars were mixed at random and divided into groups of 9 stems each. The cultivars used were Improved White Sim, Scania, New Improved Pink Sim, Caribe, Dusty, Tangerine, Blaze and Pink Ice. Each group of 9 buds was arranged in a staggered manner so that the longest stem was 45 cm and the shortest stem was 25 cm. The stem ends were then trimmed and the stem ends dipped in 10 cm of a solution of 1,000 ppm silver nitrate and distilled water for 10 minutes. The stems were then allowed to dry for 30 minutes, and each group was inserted into a plastic tube. The tube ends were folded and stapled shut and a label affixed at the top end.

The filled flower tubes were then packed vertically in a shipping carton. It was demonstrated that 120 tubes could be accommodated in a carton 50 cm x 50 cm x 50 cm. The carton was then placed in cold storage at 0 degrees centigrade for 8 weeks. Each week, 12 tubes were removed from cold storage. The flower buds were removed from 6 tubes; 5 cm of the stem ends was cut off, and then each group was placed in a separate vase containing a 10 percent sucrose solution. This solution was made with Colorado river water containing about 800 ppm dissolved salts. The flower buds in the other 6 tubes were removed from the tubes and placed directly in separate vases also containing the 10 percent sucrose solution.

Each lot removed weekly from storage was held in a room at 24 degrees for 14 days. Flowers were discarded when loss of turgidity occurred. Some groups contained good flowers at the end of 14 days. The good flowers remaining were then calculated as a percentage of the total flowers at the start.

RESULTS—Table 1 shows the average vase life days of each group following cold storage from 1 to 8 weeks. Each figure for vase life days in the

Table 1. Vase life days of carnation buds, stem recut and not recut, after 1 to 8 weeks of storage at 0 degree centigrade.

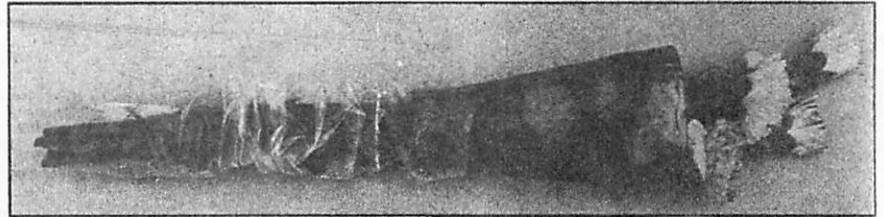


Figure 1. Inserting 9 carnation buds through fiber glass funnel to fill the polyethylene tube package.

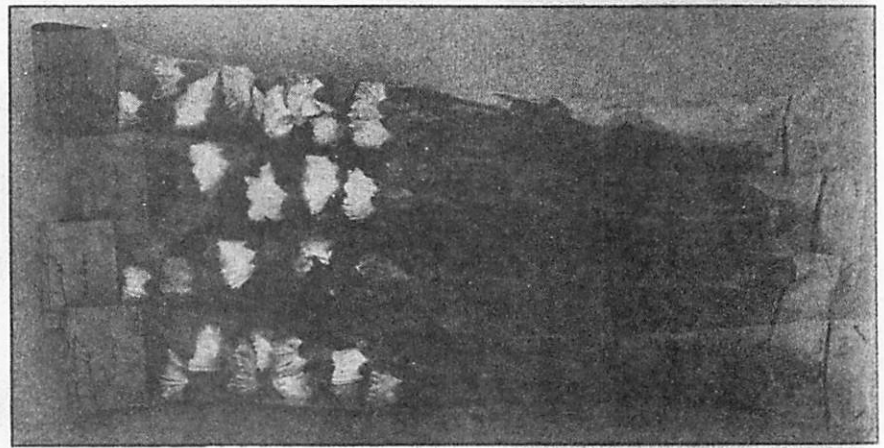


Figure 2. Packed carnation buds, 9 stems per package.

Weeks of Storage at 0°C.	Days vase-life ¹⁾ Recut stems	Percent Good flowers at 14 days ²⁾	Days vase-life ¹⁾ Stems not recut	Percent Good flowers at 14 days ²⁾
1	11.2	17	13.4	43
2	9.0	0	13.6	68
3	8.9	0	12.8	48
4	8.4	0	11.1	4
5	9.8	15	9.7	2
6	8.1	0	9.4	0
7	3)	3)	9.7	0
8	3)	3)	7.5	0

1) Vase-life days is average of six units of nine stems each. Vase-life includes bud opening of two to three days.

2) Vase-life determination concluded at 14 days. The number of good flowers remaining on the 14th day were calculated as a percent of the total flowers at the start.

3) Data missing because some flower tubes were stolen from the cold storage facility.

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table is an average of 6 tubes of 9 flower stems each, or 54 stems.

The average vase life days of stems not recut ranged from 13.6 days after 2 weeks of 0-degree storage to 7.5 days after 8 weeks of storage. The stems that had 5 cm of the stem ends removed following cold storage generally had a shorter keeping life. This amounted to 2.2 days less vase life after 1 week of storage and 1.3 days less vase life after 6 weeks of storage, as compared to the groups where stems were not recut after cold storage.

Several interesting observations were made during the vase life determinations. All 7 carnation cultivars opened well from buds in 2 to 3 days after removal from storage. This was true throughout the experiment. Also, the flowers were larger on stems not recut after storage compared to stems where 5 cm was removed before they were placed in the sucrose solutions. The cultivars Improved White Sim and New Improved Pink Sim performed best for opening from buds and showed no petal burn as a result of cold storage. Scania, a red cultivar, showed no petal burn, but some slight overall darkening of the red pigment was apparent. Dusty and Pink Ice also performed well with no storage problems. The cultivars Caribe, Tangerine and Blaze all showed petal burn as a result of prolonged storage, particularly after the 4th week of storage.

CONCLUSIONS—The use of small 76 mm layflat-width polyethylene tubing for packaging of cut flower buds provides a compact unit. The unit can be held in cold storage for at least 8 weeks for carnations. A 50 to 60 percent savings in transportation space is possible if one compares the number of stems per carton with tubes with standard methods of packing mature long-stemmed flowers. If stem ends are pretreated with a silver nitrate solution at the producer level, the consumer need only add table sugar to the vase life solution to open carnation buds and realize a vase life of 7 to 14 days.

Market testing of the plastic tube will be required to determine consumer reaction. Further research is needed to test other types of flower buds that could be marketed in the plastic tubing. Other possibilities are gerberas, marguerite and Killian daisies, standard chrysanthemums, roses, gladiolus, statice, gypsophila and cornflowers.

EDITOR'S NOTE: Seward T. Besemer is a farm adviser with the University of California cooperative agricultural extension, San Diego CA.

5 crummy-looking plants make Washington florists see the value of quality

by M. Blake Smith

LIFTING A PAPER SACK from beside his chair, Bob Weidner wore a face that looked clouded. From the sack he took 5 sad-looking foliage plants and placed them on the table. "I went shopping," he said, "and this is what I found. There were plenty of healthy-looking plants and an excellent variety, but these plants were among them—in several different outlets."

Bob Weidner is an authority on foliage plants; his display was gathered for the benefit of the Washington Floricultural Association. He spoke to association members after their greenhouse tour and dinner meeting March 7 at Norslander Restaurant, Seattle.

Bob is an authority on foliage plants. He grew them commercially for many years in his greenhouse range at Buena Park CA and is still at it; now he has retired and has time for research. "Thousands of people have houseplants—people who never before in their lives had owned a plant, much less paid any attention to them. They're being swept along in the wave of a trend, a fashion." The papers and magazines that show home interiors show hanging baskets and plants in various containers and sizes—on tables, shelves, the floor—as an important part of the furnishings. To many people, these plants are furnishings. Some realize after an admired plant droops and dies that it must have specific growth requirements. Some will shrug and say, "Guess I don't have a green thumb." If people buy from the advertisements of discount stores or on impulse as they walk through stores, little help is available on plant care.

ONE BAD APPLE—"No wonder," Weidner said, "that there is grave concern by long-term growers and florists over the almost unbelievable expansion of the pot plant market." Responsible growers invest time and money in learning about the growing and care of the foliage plants they supply. Most mass market buyers are chiefly interested in quality plants—as much as the legitimate wholesale and retail florist buyers are. Existing demand encourages the totally untrained entrepreneur, whose chief concern is a fast-turned buck. "So this," he said (pointing to the representative droop-

ing plants), "is what gets in plant displays. I've seen them without roots, just twigs stuck in soil.

"I'm not talking about the greenhouses we visited today, or the ones doing such an outstanding job here. I'm talking about the newcomers—the untrained, unprincipled—the brokers who buy and sell junk. No pity for them. They're committing suicide. It's you and your customers they're hurting. It's the houseplant business they'll injure.

"We've seen it before. The plastic flower and plant craze swept the country. Growers dumped their crops. There are places for plastic flowers and plants but not where real flowers and plants can be used. The vacated gas stations that are converted to plant shops, the boutiques, the niches and the corners that open up all over the place will have their day. A few go on because the owner has a real concern about plants, but most will fade from the scene because the customer gets discouraged and thinks he can't grow plants. There will be a new craze; the home plant party will use its methods, time and transportation to sell another craze, whatever it may be."

ANSWERS—Weidner sees some answers in the flower auctions of Europe—better licensing and control, good inspection, growers supporting their organizations and appreciation of horticultural departments in schools. He sees trouble ahead for the tolmieas and piggybacks. Growers will have to self-tax for promotion.

There must be support for newspapers and magazines that publish informative articles about plants. "The wider the circulation for magazines such as Plants Alive, the more solid the foundation of informed houseplant hobbyists."

Weidner denied being a pessimist. "I'm an optimist," he said. "There is opportunity ahead. The gasoline shortage and energy crisis will tend to keep people home. As they have done before in depressions, people will turn to growing plants, vegetables in the garden and foliage and flowering plants in the house."

In line arrangements, build the line 1st; then add greens.

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