

# LONG TERM STORAGE OF CARNATION BUDS

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At the 1983 Second International Carnation Symposium, Dr. Danuta Goszczynska, a Polish Scientist recently undertaking postdoctoral studies at Davis, presented her work on the long term storage of carnation buds. Polish growers operate under temperature and light conditions that make the production of carnations during winter a very expensive proposition. Danuta's work was intended to develop a practical method for storing summer and fall carnations into the winter months. As those of us in San Diego were able to see, her method is very successful. She demonstrated flowers that had been opened after being stored as buds for more than three months, and the quality was excellent.

Even in California, long-term storage of carnations might be very useful. For example, to store buds produced during a period of low prices (say, in September) until the market picked up (perhaps around Thanksgiving). Such storage is perfectly possible using Danuta's techniques, and for those who might be interested in experimenting with the procedure, the method is outlined below.

1. Harvest only top quality buds, at the "tight green" stage, when they are about to first show color.

2. Immerse the bunches in Rovral (0.1%) for 15 secs, making sure that all buds, stems and leaves are thoroughly wetted with the fungicide.
3. Allow the bunches to dry for some hours, then recut, removing one inch of the stem base, and place in the cool room (32-38°) in a pulsing solution containing silver thiosulfate and sucrose. Use 3 fluid oz. of STS concentrate prepared according to the U.C. formula and 8 pounds of sugar in 10 gallons of good quality water to prepare the pulsing solution. The solution should be no more than one inch deep in the buckets, and the bunches should remain in the solution overnight.
4. Remove the bunches from the pulsing solution and stand upright on absorbent paper in the cool room for a full day, which should ensure that all surfaces of the stems are completely dry. Now, still in the cool room, wrap each bunch in newspaper, then overwrap the bunches, in groups of five, with a sheet of polyethylene (1-2 mil). Place the bundles in boxes for storage.
5. Store at 32° F. The temperature must not vary by more than 1° F. This is critical to the success of the storage

operation. Buds treated in this way may be stored for as long as 4 to 6 months.

6. After storage, remove the wrapping from the bunched buds, recut the stems, removing at least one inch, then place them in opening solution, one inch deep. Ten gallons of this solution should contain:  
five and a half pounds of sugar  
one gram (1/30th of an ounce) of silver nitrate  
seven grams (1/4 ounce) of 8-hydroxyquinoline citrate  
Replenish the opening solution daily.
7. The buds should be opened in a warm room (75°), lit by bright lighting (200 foot candles) for at least 16 hours per day, and with high humidity (90% R.H.). Under these conditions, buds harvested and treated as described will open to large, long-lasting, high-quality blooms within a week.

It may be that there are variations of this procedure that will be effective under California conditions. We are going to run a few trials to examine this. In the meantime, if you plan to try this storage procedure, remember:

**FOLLOW THE INSTRUCTIONS EXACTLY  
START WITH A SMALL TRIAL**