Shipping methods used for Fresh Cut Flowers

evaluated in transcontinental trials

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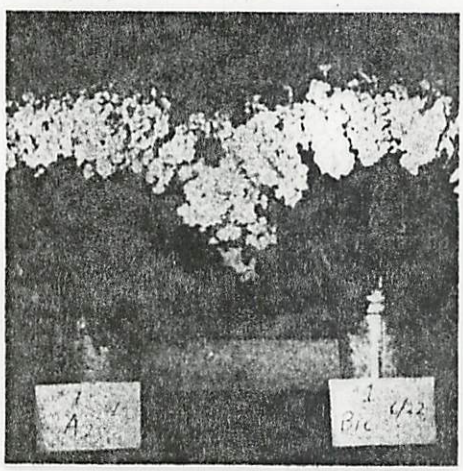
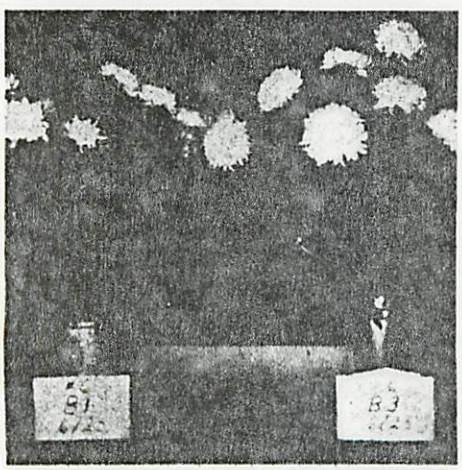
Six trial shipments of cut flowers grown in San Diego County were sent by air freight to Ithaca, New York, to evaluate the condition of the flowers on and following arrival at the eastern market.

The shipping trials were designed to compare containers, methods of packing, preconditioning of flowers by the grower or shipper, flowers cut at different stages of maturity, and various treatments to affect keeping life of the flowers after arrival at Ithaca.

Another purpose of the trials was to evaluate combinations of old and new methods for the most satisfactory transfer of cut flowers from the grower to the ultimate consumer. All flowers shipped in the trials arrived in good condition so it may be assumed that cut flowers, free from problems when shipped, will arrive in good condition despite shipping methods employed.



Column stock six days after harvest in California. Stems of flowers on the right were recut and crushed after shipment.



Chrysanthemums after six days in New York. Stems of flowers on the right were recut and put into water with preservative added.

Column Stocks

Column stocks are one of the most difficult types of cut flowers to condition after shipment because of their inability to take water.

Crushing the cut ends of the stems of column stocks for 2″–3″ after shipment allowed flowers and foliage to regain turgidity. Stems not crushed remained flaccid after arrival at Ithaca, whether refrigerated or left at room temperature. Cooling column stocks for 24 hours after shipment did not decrease the rate of decline of keeping life but delayed decline by 24 hours. There was no difference in flower condition on arrival or comparative keeping life of stocks shipped in corrugated or styrene-type hampers.

Carnations

All commercial carnation varieties used in the trials—Red Sims, White Sims, Pink Sims, Anniversary, S. Arthur Sims, Galaxy, and Tangerine—were about equal in keeping ability when the flowers were healthy and free of insect damage or disease.

Cooling the carnations prior to shipment increased keeping life at Ithaca about one day. Recutting the stems after arrival increased keeping life about two days without other treatment and for about 10 days when held in plain water at 42°F. Keeping life of recut carnations held at room temperature, after removal from the cooler, was reduced about 50%.

The trial shipments indicated that the best quality and keeping life of carnations, at an eastern destination, are obtained when the grower or the shipper cools the cut flowers overnight at 38°F to 42°F in water with flower preservative and then ships the flowers in uniced boxes. After arrival, the carnation stem should be recut, the flowers placed in water with preservative. When the flowers are fully conditioned, they should be held in refrigeration until selling time.

Whenever the carrier's shipping schedule makes it possible, it seems to be feasible to cut and grade carnations, pack

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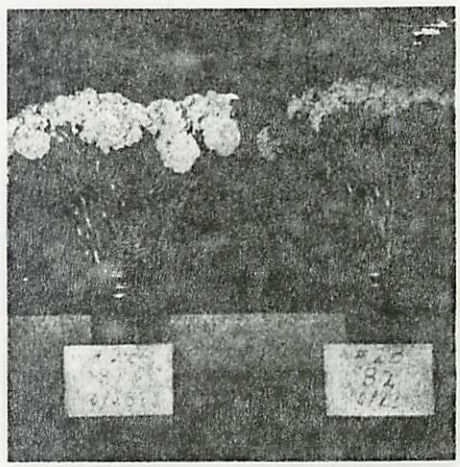
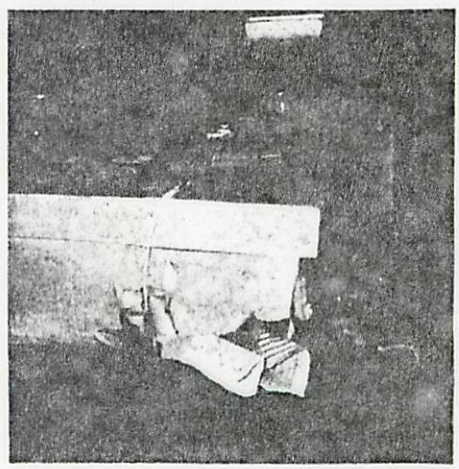


Carnations six days after harvest in California. Stems of flowers on the left were recut and kept four days in plain water.



Flowers shipped in this container were damaged when box became water-soaked by melting ice and collapsed.

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them in boxes without ice and ship immediately. Water from melting ice in a shipping box can cause collapse of the box in handling, loosening of the braces, and damage to merchandise.

Although, in all trials, all flowers were salable on arrival at Ithaca, the carnations showed minor signs of thrips injury, chemical injury, and botrytis. Of the three, thrips injury seemed to be the most serious. Petals showing thrips injury on arrival soon exhibited premature browning and dehydration. If carnations are free of disease, insect injury, and physiologically able to function as cut flowers, shipping success depends little on methods used. However, shipping methods can increase cut flower life.

Standard Chrysanthemums

Standard chrysanthemums in the bud stage shipped well in a box with no ice. Buds opened to salable flower size in 4–5 days when stems were recut and commercial flower preservative added to the water. When stems were recut and plain water used, buds did not open and leaves and flowers did not remain turgid. Recutting of stems and the use of a flower preservative are necessary. Maximum benefits derived from shipping standard chrysanthemums in the bud stage could be savings in transportation, less damage to flowers, and the possibility of stockpiling mums by the wholesaler.

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