

Cut Flower Storage Tests

trials made with rose and gardenia to determine best temperature for best commercial storage

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Studies on the reaction of stored cut rose and gardenia flowers to various temperatures were undertaken as one basis for the solution of commercial storage problems.

For the studies, roses—Better Times—were harvested from commercial greenhouses as picked for the trade. The stems and leaves of the roses were removed to eliminate the influence of these parts.

Respiration Rate

The flowers were placed in large glass jars under high humidity at various temperatures and the respiration rate—release of carbon dioxide—measured and the condition of the flowers noted during storage.

The respiration rate—the rate at which the flowers used their available energy supply—was measured by apparatus. The respiration rate had important implications as did the effect of various temperatures on the respiration rate.

The roses stored at 77° F had a very high initial respiration rate which declined to a plateau of steady value and then declined again. The appearance of the flowers was excellent until the second decline.

At 59° F the respiration rate quickly reached a steady state and then declined again. The flowers remained in good condition until the second decline.

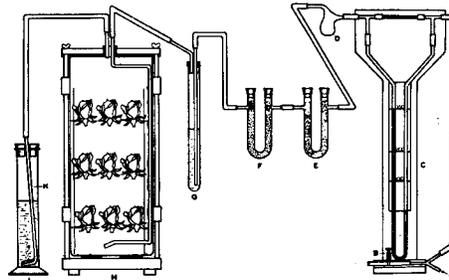


Diagram of apparatus for measurement of respiration of flowers by means of release of carbon dioxide.

At 41° F there was a small decrease in respiration and then a steady rate until the end of the experiment. The flowers remained in good condition throughout the experimental period.

Gardenias

The gardenias—Mystery—like the roses, were from commercial greenhouses as picked for the trade. They, too, were placed in glass jars and the respiration rates measured.

The gardenias stored at 77° F had a very high initial rate of respiration, which decreased slowly. The flowers stored at this temperature were in an unsalable condition on the fourth day of storage.

The respiration at 59° F quickly reached a steadily declining rate. The

flowers were in poor condition at about the eighth day.

At 41° F the respiration of the gardenias reached a steadily decreasing rate after a very short time and the flowers remained in good condition throughout the length of the experiment.

Storage Life

The course of respiration and approximate life in storage for roses and gardenias at 41° F and at 59° F are quite similar. At 77° F there were notable differences.

A comparison of respiration rates was made on the third day of the experiment and results were very similar for the roses and for the gardenias. The flowers at 77° F respired twice as fast as they did at 59° F and almost four times faster at 59° F than at 41° F. The total carbon dioxide produced by the flowers during their usable life was about the same regardless of temperature.

Respiration and storage life were controlled easily by temperature indicating that flowers should be stored at the lowest possible temperature which may be used without damage from freezing.

H. W. Siegelman was Research Assistant in Floriculture, University of California, Los Angeles, when the above reported study was conducted.

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Effect of various temperatures on respiration rate of roses and the respiration rate of gardenias.

