

# Replacement of Postharvest Moisture Loss by Recharging and Its Effect on Subsequent Moisture Loss during Short-term Storage of Carrots

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**ADDITIONAL INDEX WORDS.** abrading, *Daucus carota* L., shelf life

**ABSTRACT.** Replacing postharvest moisture loss in carrots (*Daucus carota* L., 'Caro-choice') by single and repeated recharging (rehydration in water) treatments, interaction between the duration of recharging and temperature during recharging, and the effects of these treatments on moisture loss during subsequent short-term storage were studied. Carrot mass gain increased with increase in duration of single recharging treatments. Carrots that had lost 2.96% of their mass during storage at 13 °C and 35% relative humidity regained as much as 83% of the mass during recharging for 12 hours. Longer rechargings had little additional effect. Recharging at 13 °C and 26 °C was more effective at replacing water than at 0 °C. The rate of moisture loss (percent per day) during subsequent storage was not affected by recharging duration and temperature during recharging. With repeated recharging every 3.5 days, increase in recharging duration up to 9 hours increased carrot mass gain. Most of the mass gain occurred following 0 to 7 days of storage. These treatments, however, did not affect the rate of moisture loss during subsequent storage. These results suggest that the beneficial effect of recharging on carrot quality is due to replacement of the lost moisture and not to a decrease in moisture loss during storage following recharging. Abrading increased mass loss in non-recharged carrots and increased mass gain during recharging. Recharging should be explored as an option to improve the shelf life of carrots.