

Title Effect of vacuum and modified atmosphere packaging on vase life of narcissus cut flowers
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Abstract

Narcissus is one of the most popular cut flowers in the world and also particularly in Birjand, capital of southern Khorassan province, Iran. The effect of vacuum packaging or modified atmosphere packaging (MAP) was studied on vase life and quality of *N. tazetta*. Flowers were harvested at commercial maturity stage (florets closed fully) early in the morning, placed in low density polyethylene bags and vacuum packaging or modified atmosphere packaging by injection of N₂ or CO₂ gases was created (0.04% CO₂/18% O₂ and 98% CO₂/2% O₂) and subsequently bags were tightly sealed and stored at 3 ± 1 °C for 10 days. The control stems were placed in polyethylene bags slightly open and stored under the common air components conditions (0.04% CO₂/21% O₂) at cold storage. Thereafter, they were unpacked, re-cutting prior to placing them in distilled water and stored at cold storage to assess quality, vase life, weight loss and amount of absorbed solution by the flower. Percentage of weight loss was lower in flowers that were packed in moderate vacuum atmosphere or in MAP with high CO₂ concentration compared to the control after 10 days storage at 4 °C. The maximum number of days taken for vase life was recorded in flowers that were packed in MAP with high CO₂ (98%) and low O₂ (2%) concentrations (16.5), followed by vacuum condition (15). The minimum vase life was obtained in control (3.5). The results suggest that MAP with high CO₂ or vacuum packaging have a noticeable potential to extend vase life of *N. tazetta* cut flowers in cold storage for domestic and export markets.