

Title Effect of cool and wet storage on postharvest performance of *Nerine sarniensis* cv. Red scapes
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Abstract

We determined the optimal harvest maturity stage for short term cool wet storage and postharvest performance in preservative solution (sucrose + 8-HQS) after storage of *Nerine sarniensis* cv. Red (Amaryllidaceae). The scapes were harvested at 0800 h when the spathe had broken off and buds were just countable (stage III, tight bud stage). The harvested scapes were cut to a uniform size and held in three separate buckets containing distilled water for 72 h at 5 and 10°C; besides a separate set was kept at room temperature (26±2°C). After 72 h the scapes were recut and kept at room temperature in the holding solution (sucrose + 8-HQS 50 mg/L). The scapes harvested at tight bud stage and held in distilled water at 5 and 10°C during 72 h storage maintained their premature status whereas flowers on most of the scapes held in distilled water at room temperature had bloomed. The average vase life of scapes which were previously held in distilled water at room temperature for 72 h was 5 days, whereas the vase life of scapes which had previously received 5 and 10°C temperature treatment was 9 and 8 days respectively. The scapes held in distilled water at 5 and 10°C maintained a sustained rate of blooming compared to the scapes held in distilled water at room temperature which had already bloomed during storage. The volume of holding solution absorbed remained significantly higher in scapes previously held in distilled water at 5 and 10°C respectively as compared to scapes kept at room temperature. Membrane permeability estimated as ion leakage of tepal discs was observed to be least in scapes previously held in distilled water at 5°C. Fresh and dry mass of flowers was generally found to be higher in scapes previously held in distilled water at 5 and 10°C. The content of sugars, soluble proteins, phenols registered an increase, whereas the content of α -amino acids registered a decrease in flowers of scapes previously held in distilled water at room temperature. The present results suggest that cool and wet storage of premature scapes of *Nerine sarniensis* for 72 h in distilled water did not affect the subsequent postharvest cut flower performance in the holding solution (SUC + 8-HQS) and can be used as an effective postharvest storage system.