

Title Effect of chemical preservatives on enhancing vase life and quality of narcissus cut flowers

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Citation Abstracts of 7th International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

Keywords *Narcissus tazetta*; vase life; salicylic acid; ethanol; potassium permanganate; citric acid; sucrose

Abstract

We examined the effect of treatments of holding solutions to prolong the vase life and improve the quality of *N. tazetta* cut flowers. Treatments were salicylic acid (500 or 1000 ppm), citric acid (200 or 400 ppm), potassium permanganate (125 or 250 ppm), sucrose (2 or 4 % w/v) and ethanol (2 or 4 % w/v). Distilled water was used as control. Flowers were harvested at commercial maturity stage (florets closed fully) early in the morning during November. The stalks were cut again prior to placing them in distilled water or holding solutions and stored at 3 ± 1 °C with RH 75-80%. Vase life, discoloration of petals and amount of absorbed solution by the flower were assessed. The maximum quantity of holding solution was absorbed in citric acid treatment at 200 ppm, followed by ethanol at 2% and ethanol 4%. The maximum number of days taken for vase life was recorded in flowers that were placed in ethanol 4% (25.5) followed by sucrose 2% (24), ethanol 2% (22) and potassium permanganate (125 ppm) (18). Vase life of control flowers was 16 days. Potassium permanganate (250 ppm) and sucrose (4%) treatments accelerated florets opening. During the third week, symptoms of rotting were observed in salicylic acid and to some extent in citric acid treated stalks, which decreased vase life and caused little market value in treated flowers, particularly in salicylic acid. However, as expected the petals and stem of cut Narcissus flowers that were held in sucrose solutions had more turgidity than other treatments. The results revealed that ethanol or sucrose treatment significantly increased vase life compared to the control. Overall, it may be concluded that the best holding solution for cut *N. tazetta* flowers should be a combination of ethanol and sucrose, which needs further investigation.