Postharvest physiology and handling of cut *Spartium junceum* inflorescences

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Abstract

Spartium junceum is a deciduous perennial shrub with extreme resistance to drought that develops spike inflorescences with yellow, delicate, lightly scented flowers. In series of experiments, we investigated *S. junceum* postharvest performance and recorded various quality parameters. Harvesting *S. junceum* inflorescences at different developmental stages did not affect vase life (VL) or inflorescence fresh weight. However, significant differences between harvest stages were recorded on flower open rate (FOR; %) and flower fall rate (FFR; %). Sucrose pulsing at 2 and 5% (w:v) for 24 h resulted in significant increases in FOR, but no changes in FFR, inflorescence fresh weigh and solution uptake (SU) were recorded. Wet storage at 3 °C effectively increased VL and maintained quality of inflorescences for over 40 days. *S. junceum* showed a moderate sensitivity to exogenous ethylene. Exposure of inflorescences to 5 and 10 μL L^{-1} for 12 h resulted in significant decrease in VL and FOR, and also increase in FFR. 1-MCP treatments at 10 μL L^{-1} significantly increased VL by 2.2 d, FOR by up to 90% and maintained higher inflorescence fresh weight ($P < 0.05$) for 5 d (e.g. from day-3 to day-8), compared to the un-treated controls. The results of the present study suggest that *S. junceum* could, potentially, be cultivated commercially for specialty cut flower production.