

**Title** Enhancement of *Leucospermum* flower shelf life through postharvest treatments and packaging

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### **Abstract**

Limited shelf life of cut flowers is often a major constraint to marketing, particularly for export, where transport and distribution may amount to a considerable portion of total postharvest shelf life. Therefore, procedures for extending shelf life are of value. It is assumed that by harvesting flowers, disruption of water and carbohydrate supply will result in stress, thus decreasing shelf life. The objective of the study was to prolong the shelf life of *Leucospermum* cv Sunrise. The effects of postharvest prepacking pulsing solutions, followed by packing in polypropylene bags, creating codified atmosphere packs, was tested. None of the pulsing solutions had a positive effect on shelf life, although maintenance of a high water use efficiency, so as to conserve the available water for as long as possible, had a positive effect on shelf life. The same was true of the polypropylene bag packaging, with the modified atmospheres providing additional advantages. Flower respiration rate was decreased, and measurement of F/F ratios showed that stress occurred later in the treatments having longer shelf life. Such treatments also resulted in leaves maintaining higher levels of carbohydrates for longer. The study showed that packaging in polypropylene bags containing a modified atmosphere resulted in lower water loss from the flowers, decreased respiration and conservancy of carbohydrates, with a two week extension of shelf life. It may therefore be possible to develop acceptable sea freight protocols to replace air freight, and enhance profitability.