Abstract:

Vase life of flower-bearing stems of 'Sylvia' proteas (Protea eximia x P. susannae) is limited by its susceptibility to leaf blackening. Vase life was extended by storage at 0°C compared to 4.5°C, the current recommendation in South Africa. Respiration rates of intact stems (7.43 ml/kg·h) and stems stripped of leaves (7.07 ml/kg·h) were significantly higher than decapitated stems (5.48 ml/kg·h), confirming that the flowerhead accounts for the majority of respiration at 0°C. A similar trend was observed in stems stored at 4.5°C. Controlled atmosphere storage using 10.5kPa O_2 + 10.5kPa CO_2; 5kPa O_2 + 5kPa CO_2 or 5kPa O_2 (balance N_2) at 0°C had no effect on subsequent vase life compared to stems stored in air. Vacuum cooling followed by 3 d at 0°C (the time required for air transport) extended vase life by 2 d compared to conventional forced air cooling. However, vase life was negligible after longer storage periods (14-21 d), irrespective of cooling method. A 2.5% glucose holding solution increased vase life from 6 d (control) to 20 d.