

**Title** The effect of packaging on shelf-life of cut *Dendrobium* big white jumbo inflorescences  
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### **Abstract**

Modified atmosphere packaging (MAP) utilizes different gas permeabilities within the packaging film to maintain the optimum level of oxygen (O<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) within the sealed bag. The aim of this experiment was to compare the effect of perforated polypropylene (PP) bags and high TOR bags (active packaging) on the vase life of *Dendrobium* Big White Jumbo inflorescences. Inflorescences were harvested at commercial maturity. The stem-ends of individual inflorescences were re-cut and inserted into plastic tubes containing distilled water. The inflorescences were then packed in PP or active packaging bags with an ethylene absorber (EA) and kept at 13°C for 5 days to simulate air shipment and thereafter the flowers were removed from their respective packaging and displayed at 25°C. The concentration of CO<sub>2</sub>, O<sub>2</sub> and ethylene (C<sub>2</sub>H<sub>4</sub>) and the relative humidity (RH) in the packages were measured daily during simulated shipment. The results showed that the active packaging bag had higher CO<sub>2</sub>, C<sub>2</sub>H<sub>4</sub> and RH than PP packaging. In contrast, the O<sub>2</sub> concentration was lower in active packaging bag. There was no difference in the relative fresh weight of flowers in the two treatments. During the display life after removal from the bags, the inflorescences which had been packed in PP bag had lower respiration rates and flower drop but had higher bud openings than those packaged in the active packaging bag. This resulted in a shorter displayed life of *Dendrobium* Big White Jumbo inflorescences when stored in active packaging (6 days) as compared to the inflorescences stored in PP packaging (10 days).