Title Preservative solutions delay deterioration of inflorescences of *Dendrobium* sonia 'Bom 17' following gamma irradiation

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Abstract

Effectiveness of preservative solutions for delaying deterioration of *Dendrobium* Sonia 'Bom 17' inflorescences following gamma irradiation was investigated under simulated commercial harvesting, packing, treating and shipping conditions. It was found that untreated flowers (control) had 2 times higher respiration rates and 12.5 times higher rates of ethylene production than irradiated flowers (2kGy) at 20±2°C. Irradiated flowers had lower ethylene production in the presence of preservative Sol 1. The maximum number of opening flowers was 76.3% in untreated flowers held in preservative Sol 3. No flower drop was observed in flowers treated with 1 kGy and held in Sol 1, 2, and 3 or in flowers treated with 2 kGy and held in Sol 1. No flowers opened on inflorescences treated with 2.0 kGy and held in Sol 2 and 3, but flower drop reached a maximum of 32.8 and 44.2%, respectively. The vase life of untreated flowers was 17 days while the vase life of flowers irradiated with 2 kGy and held in Sol 2 and 3 was 4 days. Irradiated flowers (2 kGy) held in Sol 1 had a vase life of 6 days.