

Title Gamma irradiation causes deterioration of inflorescences of *Dendrobium* Sonia 'Bom 17'

Author M. Buanong and S. Kanlayanarat

Citation ISHS Acta Horticulturae 878:411-416. 2010.

Keyword cut flowers; orchids; physiological changes; postharvest; senescence

Abstract

Effects of gamma irradiation on inflorescences of *Dendrobium* orchid, Sonia 'Bom 17' were investigated. Gamma irradiation (2 kGy) caused a significant increase in the rate of CO₂ production that reached a peak in *Dendrobium* flowers on day 4 at 20±2°C. Increased CO₂ evolution was accompanied by an increase in ethylene production that also reached a peak on day 4. Ethylene production by untreated flowers (control) remained constant until the flowers senesced. Both opening flowers and buds were damaged by irradiation. Flower tissue collapsed, shrank and darkened and the fresh weight and water uptake of treated flowers decreased significantly. Longevity of irradiated flowers was reduced and the flowers wilted within 5 days after treatment. Irradiation inhibited bud opening and caused abscission of flowers (37.8%). Untreated flowers had a vase life of 13 days and the highest average number of opening flowers.