

Title Induction of ethylene insensitivity into *Oncidium* and *Odontoglossum* orchid species for improvement of display life

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Abstract

Two orchid species, *Oncidium* and *Odontoglossum*, are sensitive to ethylene. Exposure of cut inflorescences or potted flowering plants to $1 \mu\text{l L}^{-1}$ of ethylene accelerated bud drop, wilting of florets, and yellowing of leaves and pedicels. To prevent ethylene effects two strategies have been used in our studies: 1) treatment with the ethylene receptor blocker 1-methylcyclopropene (1-MCP), 2) *Agrobacterium* mediated transformation with an *etr1-1* mutant gene from *Arabidopsis thaliana*. Selected cultivars of *Oncidium* and *Odontoglossum* orchids were pre-treated with 200 nl L^{-1} 1-MCP at 20°C for 6 h and subsequently exposed to 0 or $1 \mu\text{l L}^{-1}$ ethylene. 1-MCP clearly improved postharvest characteristics of both investigated species as well in presence as in the absence of ethylene.