

The quick monitoring methods for chilling tolerance and increased chilling tolerance by pretreatment of salicylic acid and hydrogen peroxide in *Phalaenopsis* spp.¹

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Abstract

In order to set up the quick monitoring methods for chilling tolerance of *Phalaenopsis* spp., those orchid plants were treated with 7°C cold temperature for 10 days and regrowth in room temperature for 7 days. The five species of *Phal.* spp. included KC1111 (*Phal.* Taisuco Snow × *Dtps.* White Wonder), KC1938(*Phal.* Taisuco Kaaladian), KC2902(*Phal.* Mount. Lip × *Dtps.*(Mt. Beauty × Happy Valentine 'Hamakite Beauty'), KHM469 (*Phal.* Brother Girly) and KHM192 (*Dtps.* Sinica Ruby 'SCL16 #1'). PSII photochemical efficiency (Fv/Fm), electrolyte leakage and chlorophyll meter reading (SPAD) values were used to evaluate the orchids of chilling tolerance. The result showed that Fv/Fm were the most reliable index to predict the chilling tolerance of *Phalaenopsis* orchids. In order to increase chilling tolerance of *Phalaenopsis* spp., sodium salicylate (0.001 M) and H₂O₂ (0.025 M) were applied once time before cold treatment. Result showed that H₂O₂ could increase chilling tolerance of KC1111 effectively. It need further experiment to test the concentration and treatment frequency of chemical.

Key words : *Phalaenopsis*, *Doritaenopsis*, Fv/Fm, Electrolyte leakage, SPAD.

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