

**Title** Effect of salicylic acid on inducing chilling tolerance, decay control and maintain quality of sweet lemon

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#### **Abstract**

In this study the effect of different concentrations of salicylic acid compared with control and distilled water was assessed on induction of resistance to chilling injury and quality of sweet lemon fruits. For this purpose, sweet lemon fruits were treated by immersion method for 5 minutes in salicylic acid (200,400 and 600 mg/lit) and then packed in polyethylene bags and stored in cold storage ( $4 \pm 1$  °C) for two months. At the end of storage period, fruits transferred to 25 °C for 5 days and the effects of treatments on chilling injury, total soluble solid, ion leakage percentage, vitamin C, weight loss and decay percentage was investigated. Based on results, salicylic acid decreased chilling injury, preserved quality appearance and prevent water loss of sweet lemon fruits without any deleterious effect on internal quality. The highest chilling injury was found in control treatment and the lowest in fruits treated with 400 mg/lit salicylic acid in low temperature and also after keeping at high temperature. In terms of weight loss and reduction of vitamin C and total acid, had significant difference between treated and control fruits. Furthermore, no significant differences of total soluble solids (TSS) and pH were found between treated and control fruits. In general, treatment of 400mg/lit salicylic acid showed fruits with the best appearance and the most controlling effect on chilling injury.