Effect of storage temperature on rind pitting and fruit rot in Satsuma 'Okitsu'

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Abstract

Rind disorders on satsuma mandarin have caused serious crop losses in Uruguay. The causes of these disorders are not well understood and their incidence is erratic, showing high variability from year to year and among orchards. Satsuma fruit suffers chilling injury during cold storage, and rind pitting is a common symptom. The objective of this study was to analyze fruit response to different storage temperatures evaluating pitting development and the incidence of different drench treatments on fruit rot and pitting development. Satsuma 'Okitsu' fruits were harvested from two different farms, one with high pitting history (Q102) and the other with low pitting history (Q100). Fruits of each farm were drenched with five different treatments, leaving an untreated sample as control. Fruits from each orchard and drench treatment were kept at 3°C, 6°C or at room temperature, during 30 days. After being drenched the fruits were degreened, waxed and stored. Fruits stored at room temperature did not show pitting, whereas fruits stored at 3°C showed the greatest incidence of pitting. Fruits from the farm Q102 showed higher incidence of pitting than those from the farm Q100. Drench treatments did not affect pitting level but they affected rot incidence. Fruits stored at 3 and 6°C had less incidence of fruit decay than samples stored at room temperature. Four rind samples of fruits with pitting from Q102 and 8 rind samples of fruit without pitting from Q100 and Q102 were analyzed in order to determine their nutrient composition.