

**Title** Microstructure of persimmon treated by hot water to alleviate chilling injury  
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### **Abstract**

Hot water treatments (HWTs) have proved to alleviate chilling injury of 'Rojo Brillante' persimmon. But depending on the maturity stage of the fruit, HWTs did or did not cause heat damage as skin cracking. The aim of this work was to study the microstructure, by Cryo-SEM and LM, in order to understand this fact. Fruit at early and advanced stage of maturity were submitted to HWT at 50°C from 8 to 25 min. After the treatments, only the advanced maturity-fruit displayed heat damage at a macroscopic level, more severe as higher was the time of HWT. Observed by Cryo-SEM, the epicarp consists of a fine external cuticle, followed by an amorphous material zone (6-7 µm thickness) situated between this cuticle and the epidermis. Finally, several colenquimatic cells layers are situated in contact with the endocarp cells. The water immersion of advanced maturity-fruit especially affects the cuticle, the amorphous material zone and the epidermis. Semithin sections of persimmon in a more advanced maturity showed the endocarp cells especially affected, even after 8 min immersed in hot water.