

# Effects of precooling on storage and ros metabolism of longan fruit

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Acta Horticulturae 1029: 337-343. (2014)

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## Abstract

Effects of cold room precooling and ice water precooling on storage and reactive oxygen species (ROS) metabolism of longan (*Dimocarpus longan* Lour.) fruit were studied. Changes of pericarp browning index, pericarp moisture content, activities of relative enzymes of ROS metabolism and contents of pulp total soluble solids (TSS), titratable acid (TA) and vitamin C (Vc) during storage were measured. The results indicated that cold room precooling and ice water precooling can maintain pericarp moisture content and decrease pericarp browning index, but have little effect on contents of TSS, TA and Vc. After cold room precooling and ice water precooling, activities of peroxidase (POD) in the pericarp and pulp of longan were inhibited. Activities of superoxide dismutase (SOD) increased in the pericarp but were inhibited in the pulp of precooled fruit. Precooling treatments also inhibited the content of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) in longan pulp. Anti-superoxide anion activities in longan pulp were increased in cold room precooling but decreased in ice water precooling. Postharvest ice water precooling of longan fruit can maintain high scavenging activities of the superoxide anion and less ROS content, delay fruit aging, maintain quality and improve storage life.