

Title            Effect of hypobaric storage on physiological and quality attributes of loquat fruit at low temperature  
Authors        H.Y. Gao, H.J. Chen, W.X. Chen, Y.T. Yang, L.L. Song, Y.M. Jiang and Y.H. Zheng  
Citation        ISHS Acta Horticulturae 712: 261-268. 2006.  
Keywords      Loquat; hypobaric storage; quality; low temperature

### **Abstract**

Low temperature storage of loquat significantly reduces decay incidence, however, the fruit rapidly loses its market value due to the development of flesh leatheriness. Hypobaric storage has been shown to inhibit postharvest ripening and senescence and extend shelf life of fruits and vegetables. Experiments were conducted to investigate the effects of hypobaric storage on physiological and quality attributes of loquat fruit. Loquat fruits were stored for 49 days in air (control) or at 40-50 kPa pressure at 2-4°C. Changes in fruit decay rate, quality parameters, rates of respiration and ethylene production and activities of polyphenol oxidase (PPO) and peroxidase (POD) were monitored during storage. Hypobaric storage significantly inhibited the fruit decay and loss of titratable acidity and ascorbic acid contents. The decay rate of the fruit stored at 40-50 kPa was reduced by 87%, and fruit browning and flesh leatheriness were reduced. Respiration and ethylene production increased in air within the first 14 days of storage and then declined whereas those in 40-50 kPa had significantly reduced the rates of respiration and ethylene production. POD and PPO activities increased and then reached the highest values after 14 days in air storage. Hypobaric storage reduced the increase in PPO and POD activities and delayed the onset of peak activity in these enzymes. These results suggest that hypobaric storage has potential to control fruit decay and flesh leatheriness development of loquat fruit stored at low temperature.