New insights on phenolic compound metabolism in pomegranate fruit during storage

Cuihua Liu, Zhuo Zhang, Zhiming Dang, Juan Xu and Xiaolin Ren

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Abstract

Pomegranates are becoming more popular with consumers because of their pleasant taste and high nutritional value. However, little is known about the changes in phenolic compound contents in pomegranate fruit during storage. In this study, we monitored changes in the contents of the main phenolic compounds in the peel and arils of Xinjiangdazi and Yushiliu pomegranate (*Punica granatum* L.) fruit during 50 d of storage at 5 °C. The patterns of changes in concentrations differed widely among different phenolic compounds. The main phenolic compounds in pomegranate arils and peel were anthocyanins, phenolic acids, and flavonoids. The anthocyanin content in arils and flavonoid content in peel were related to peroxidase activity. The results illustrate the changes in the concentrations of phenolic compounds in the arils and peel in pomegranate fruit during storage, and show that the abundance of some compounds is related to antioxidant enzyme activity. This information will be useful for the exploitation of pomegranate resources and for developing appropriate postharvest treatments to maintain fruit quality.