

Title Changes in peel color and cuticle components in mango skin affected by temperature treatment after harvest

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Abstract

Peel color is one of the important factors of fruit evaluation in the market. In a previous paper (SEAsia2011), we suggested that the accumulation of volatile sesquiterpenes such as (E,E)- α -farnesene (AF) and conjugated triens (CTs), an oxidized form of AF, in cuticle tissues of mango fruit (*Mangifera indica* L. cv. Nam Doc Mai), is possibly related to peel browning. In this study, the peel color was measured nondestructively with a colorimeter on the surface of fruits harvested at young, immature, and mature stages, and those treated at 25°C (ripened) or 5°C after harvest for one week. A pale brown color was observed on the surface of the immature and mature fruits treated at 5°C. L, b, and Croma values were significantly lower in the immature and mature fruits treated at 5°C after harvest, compared with those at harvest and treated at 25°C, while these values were not significantly different between treatments in young-harvested fruits. The cuticle components in those fruits were extracted using hexane, and AF and CTs were measured using specific UV absorption (232 and 269 nm for AF and CTs, respectively). The ratios of 269/232 nm of hexane extract from the immature- and mature-harvested fruits treated at 5°C after harvest were significantly lower than in the harvested and ripened fruits, while no significant difference was observed between treatments in young-harvested fruits. The relationships between the CTs/AF ratio in hexane extract and peel color are discussed.