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Changes in Carotenoids and Their Fatty Acid Esters in Banana Peel during Ripening

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Changes in carotenoids and their fatty acid esters in banana peel during ripening were investigated using a combination of an alumina column and high-performance liquid chromatography (HPLC). The level of total carotenoids decreased during the early stage of ripening but recovered again to the level of green fruit. Carotenoids belonging to both the α - and β -carotene categories decreased in the early stage of ripening, then the α -carotene category, especially lutein, increased significantly, but not the β -carotene category. Because the amount of α -cryptoxanthin was quite small, the process of hydroxylation of α -carotene to lutein, where α -cryptoxanthin was the intermediate product, seemed to occur quickly. Free lutein was easily esterified to lutein monoester and then was gradually further esterified to lutein diester; the amount of free, monoester and diester of lutein was about 20, 60 and 20% of total lutein, respectively after 4 days' storage. A small amount of isolutein, which is an epoxy of lutein, was observed and all isolutein was in the monoester form after 4 days' storage, but no diester form was detected.

Keywords: [Musa AAA group](#), [banana](#), [carotenoids](#), [carotenoid fatty acid esters](#), [ripening](#)[\[PDF \(544K\)\]](#) [\[References\]](#)

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