

Title Biochemistry of fruit ripening of guava (*Psidium guajava* L.): compositional and enzymatic changes

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Abstract

Changes in chemical composition and the activities of hydrolytic enzymes during four different stages of maturity, viz. mature green (MG), color turning (CT), ripe (R), and overripe (OR), have been studied in guava fruits cv. Banarsi Surkha. Chlorophyll content decreased while carotenoid content increased during ripening. Starch content decreased with concomitant increase in alcohol-soluble sugars. Cellulose, hemicellulose, and lignin also decreased up to ripe stage, while pectin continued to decrease up to OR stage. PG (polygalacturonase) and cellulase exhibited progressive increase in activity throughout ripening, whereas pectin methyl esterase (PME) activity increased up to CT stage and decreased at R stage. The activities of a-amylase and b-amylase decreased significantly with ripening. The most notable metabolic changes occurred between MG and CT stage, implying that for improved postharvest handling, guava fruits may be harvested at CT stage.