

Abstract:

The effects of a preharvest Ca-chelate treatment on subsequent storage quality of kiwifruit were determined. A preharvest Ca spray increased Ca concentrations in the peel, pulp and core of two kiwifruit (*Actinidia deliciosa*), cultivars, 'Hayward' and 'Koryoku'. Pulp contained 1.8-1.4 times higher Ca concentration than control fruit. Some physiological changes associated with softening and ripening were evaluated during ripening at 25 °C. Ca treatment retained flesh firmness, the role of maintaining firmness was more noticeable especially at the end of ripening, and inhibited the increases in water soluble pectin and ammonium oxalate soluble pectin and the decrease in hydrochloric acid soluble pectin, the flesh firmness had a negative correlation with ratios of water soluble pectin and ammonium soluble pectin to total pectin, and had a positive correlation with ratio of hydrochloric acid soluble pectin to total pectin. Furthermore, Ca treatment reduced carbon dioxide and ethylene evolution, and retarded the rate of starch degradation and decreases in organic acid and ascorbic acid. These results indicate that Ca-chelate treatment could delay fruit ripening and softening, and prolong the shelf life of kiwifruit. The increase in endogenous ABA level was also inhibited by Ca treatment, it suggests that ABA may play an important role on the control of fruit softening in kiwifruit after harvest.