

Effect of wax treatment on the quality and postharvest physiology of pineapple fruits

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Abstract

Changes in the quality and postharvest physiology and the effect of wax application on harvested pineapple fruits were examined. Pineapple fruits were treated with fruit wax 2952 (Sta-Fresh, FMC) of different concentrations. Coating was effective in decreasing titratable acidity, loss of weight and respiration rate, delaying the color change of pineapple peel and pulp, and extending the storage life. A higher wax concentration showed more effectiveness on the color change delay, but the greater barrier to gas exchange made the pineapples develop more ethanol and there was more rapid cell breakdown. The significant effect of waxing on reducing titratable acidity led to a higher TSS/TA ratio. The activities of some enzymes related to the respiration were also studied. Pyruvate kinase (PK) and alcohol dehydrogenase (ADH) activities were reduced by waxing in the first few days compared to the control, but increased obviously at the end of storage. The activity of glucose-6-phosphate dehydrogenase (G6PD) in waxed fruits was close to the control. Pentose phosphate pathway (PPP) seemed to account for a larger part of the respiration in the waxed fruits comparing the G6PD activity and overall respiration rate.