Title Effect of postharvest heat treatments on microstructure changes of N36 and Gandul pineapples

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Abstract

Effect of postharvest heat treatments on the weight loss and microstructure changes on the skin and flesh of N36 and Gandul pineapples were carried out prior to storage at l0°C. Different morphology of pineapple effect of HT and CHT on weight loss and microstructure of skin and flesh differ with different morphology of pineapple varieties. Heat treatment alone (HT) significantly (p <0.05) increase the weight loss of both N36 and Gandul pineapples. Percentage of weight loss of N36 was significantly (p <0.05) reduced when heat treatment was combined with surface coating (CHT). However, weight loss of CHT Gandul pineapples were still significantly (p <0.05) higher compared to the control pineapples. Dehydration of fruit surface (skin) and flesh near the skin during heating causes the natural epicuticular wax and surface coating applied to melt and filled the pores and cracks. These were observed in the microstructure study by environmental scanning electron microscope (ESEM). The covering of wounds and cracks by melted wax, following the heat treatment can contribute to the positive effect in protections on the skin against wound pathogens. However it may also cause negative effect to cell collapse leading to serious tissue degradation.