Title Effect of heat treatment and packaging method on the quality of peeled potato

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Abstract

One of the major problems associated with fresh cut vegetables is enzymatic browning. For peeled potato, methods of retarding surface and edge browning used in the Korean industry include low temperature, vacuum packaging to induce high CO_2 and low O_2 levels, and antioxidant treatments. The presence of high CO_2 and low O_2 concentrations however, may cause off-odor development. Hence, a method of reducing browning and off-odor development was investigated in this study. Potatoes kept at 5°C after harvest were heat treated for 24 h at 30°C or 3h at 45°C; control samples were stored at 5°C under ambient air. Samples were then peeled, washed, immersed in either water at 5°C for 3 h or in antioxidant solution for 90 sec, and vacuum-packaged with 80 μm Ny/PE film. The treatment involving samples held at 30°C for 24 h was effective in reducing CO_2 concentrations and off-odor development in MA packs throughout storage. Combining the 30°C heat treatment with cold water immersion delayed browning, reduced off-odor and maintained the highest overall quality throughout storage.