

**Title** Effect of vapor heat treatment on microbial populations and the appearance of fresh-cut broccoli florets

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#### **Abstract**

This study was purposed on the effect of vapor heat treatments (VHT) at 90°C to reduce microbial population, and then evaluated the quality acceptance of fresh-cut broccoli florets by panelists. The broccoli heads were cut into the florets, and then treated with VHT for 0 (control), 15, 30, and 45 sec. The treated samples were immediately cooled with clean water. The exceed water on the florets were removed by manual spinner, placed in PVC clamshell boxes, and stored at 4 DC for 6 days. Initial day storage, the VHT for 15 sec could reduce *E. coli* for 0.51 log CFU/g, while it was not able to reduce *Salmonella* spp., total bacteria and yeast and mold populations on fresh-cut broccoli florets. Sensory evaluation by panelists showed that fresh-cut broccoli florets treated with VHT for 15 sec was accepted from panelists in term of visual quality, color and odor more than other VHTs, but it was not significant different with that of control. Long exposure time of VHT resulted to enhance the microbial populations and the qualities of fresh-cut broccoli florets were unacceptable by the panelists. These results imply that VHT for 15 sec may have a less effect to reduce microbial populations and it cannot use to improve the qualities of fresh-cut broccoli florets.