Title Effect of modified atmosphere packaging on visual quality and glucosinolates of broccoli florets

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Abstract

Broccoli (*Brassica oleracea* var. *italica*) florets were packaged in polyethylene bags with no holes (M_0), two microholes (M_1), and four macroholes (M_2), and then stored at 4 or 20 °C. The effects of modified atmosphere packaging (MAP) treatments on visual quality and glucosinolate contents were determined by comparing with non-wrapped florets. The results showed that MAP treatments, especially with M_0 and M_1, extended the shelf life and reduced the postharvest deterioration of broccoli florets stored at 4 and 20 °C. All three MAP treatments reduced the decreasing concentration rates of individual, total aliphatic and indole glucosinolates in broccoli florets when compared to those in the control, with M_0 being the most significant, followed by M_1 and M_2 during 23 days of storage at 4 °C or 5 days of storage at 20 °C. Broccoli florets with M_0 treatment maintained the visual quality and glucosinolate contents for 13 days at 4 °C and 3 days at 20 °C.