Effect of modified atmosphere packaging (MAP) on physicochemical of fresh-cut bottle gourd

ABSTRACT

The effect of modified atmosphere packaging (MAP) with different initial gas compositions on fresh-cut bottle gourd was determined. Vegetables were packaged under each of the following conditions: (1) 3% O2/9% CO2 initially, (2) 5% O2/5% CO2 initially and (3) 9% O2/3% CO2 initially. Passive modified atmosphere packaging with air inside initially (20.9% O2/0.03% CO2) was used as the control treatment. Changes in headspace, weight loss, firmness, colour, pH, soluble solid content, titratable acidity and sensory characteristics were evaluated. O2 concentration continuously decreased below its initial concentration for all packaging conditions. Meanwhile, CO2 concentration inside all packages continuously decreased up to 17% from the initial conditions. The results indicated a minimum reduction in flesh firmness and delayed the change of colour values in packaged 2 and 3. There were no significant differences observed for titratable acidity, pH and soluble solid content among packaging conditions. In conclusion, the higher oxygen content was effective to maintain the postharvest quality of fresh-cut bottle gourd.

Keyword: Modified atmosphere packaging; Physicochemical; Fresh-cut bottle gourd