

Influence of modified atmospheres on shelf life and quality of fresh-cut apples

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Abstract

The present study investigated the effect of modified atmosphere packaging (MAP) on the quality and shelf life of fresh-cut apple wedges stored at 5 ± 2 °C for 42 days. The fresh-cut apple wedges were packed in atmosphere of varying O₂ and CO₂ concentrations. Physico-chemical analysis (colour, weight loss, firmness, total phenol, antioxidant activity, polyphenol oxidase and peroxidase activity) and microbial quality were measured throughout the storage period. MAP reduced changes in colour, firmness and microbial load of fresh-cut apple wedges. At the end of 42 days of storage, the MAP samples exhibited the lowest polyphenol oxidase and peroxidase activity. MAP showed the best results amongst the treatment in terms of retaining aesthetic appeal, quality characteristics and extending the shelf life of the apple wedges upto 42 days. Overall, gas composition of 5% O₂ + 5% CO₂ resulted in better inhibitory effect on the browning and extended the shelf life of fresh-cut apple wedges upto 42 days with minimal change in quality.