

Title Effect of modified atmosphere packaging and cytokinin treatment on quality and nutritional value of broccoli

Author Fariba Khalili, Younes Mostofi and Maryam Shekarchi^J

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Abstract

Broccoli like other cruciferous vegetables is a rich source of health-promoting compounds, such as vitamin C which may contribute to the high antioxidant capacity found in freshly-harvested broccoli. However, high losses of this essential compound have been reported after harvesting. Broccoli (*Brassica oleracea* L. cv Premium crop) heads were packaged using two types of polymeric films (polyethylene and polypropylene) after cytokinin treatments (0 ppm and 50 ppm), and then stored at 1°C for 18 days to study the effect of passive and active MAP (1.5%O₂+ 7.5%CO₂) on quality, storability and nutritional value. Results showed that deterioration occurred quickly in control broccoli, manifested mainly by weight loss, yellowing, chlorophyll degradation, and increase in ethylene production. Also a rapid decrease in ascorbic acid concentration was observed. Conversely, packaging under MAP, especially with polypropylene and cytokinin treatment, significantly prolonged storability up to 18 days with high quality attributes and minimized ascorbic acid losses and ethylene production during the whole period.