

**Title** Quality and safety of table grapes coated with hydroxypropylmethylcellulose edible coatings containing propolis extract

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### **Abstract**

Edible coatings based on hydroxypropylmethylcellulose containing an ethanolic extract of propolis, were developed and applied to table grapes, cv. Muscatel, in order to improve quality and shelf life during storage, while taking advantage of the beneficial health properties of propolis. Weight loss, changes in soluble solids, phenol contents, antioxidant capacity, respiration rates and the microbial counts of uncoated and coated samples were determined throughout cold storage. The sensory quality of samples was also analysed. Throughout storage, soluble solid contents sharply increased from 7 storage days onwards and phenol contents decreased, especially during the first 5 days. No effect of coatings was observed on the development of these variables. A decrease of luminosity and hue values was observed during storage; the samples coated with the greatest amount of propolis being the lightest. The hue decrease was related with the  $a^*$  colour coordinate increase, which was significantly stronger for uncoated samples. Regardless of their composition, coatings slowed down weight losses and controlled the oxygen consumption of the samples. At 10 days of storage, coated samples had a better microbial safety than uncoated samples. Although no significant effect of the propolis incorporation was observed on the preservation of grape quality during storage, its incorporation in the HPMC coatings contributes to enrichment of health characteristics of the coated product.