

Title Effect of beeswax content on hydroxypropyl methylcellulose-based edible film properties and postharvest quality of coated plums (*Cv. Angeleno*)

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Abstract

The effect of beeswax (BW) content of hydroxypropyl methylcellulose (HPMC)–BW edible coatings on stand-alone film properties and on postharvest quality of coated ‘Angeleno’ plums was studied. The coatings contained BW at 4 lipid content levels (0, 20, 40 and 60 g/100 g, dry basis). Coated and uncoated plums were stored 4 weeks at 1 °C and transferred to 20 °C for 1–3 weeks. Addition of BW to the HPMC film matrix reduced film mechanical resistance and oxygen barrier, and improved film moisture barrier. Film mechanical properties showed a good fit with an exponential and/or linear model that could provide a useful tool to predict mechanical properties with others HPMC–BW composition mixtures. Coatings with BW reduced plum weight loss compared to HPMC-based coatings with no BW. Plum weight loss decreased as BW content increased from 20 to 40 g/100 g, but above 40 g/100 g BW content, weight loss was not further reduced. Whereas, water vapor permeability of stand-alone films decreased significantly as BW content increased to 60 g/100 g. Coatings reduced plum softening and bleeding, with those with lower BW content being more effective, which could be related to the ability of coatings to create a modified atmosphere in the fruit. Flavor was not affected by coating application. Results indicate that HPMC–BW coatings with 20 g/100 g BW would provide the best compromise to extend shelf life of ‘Angeleno’ plums.