

Abstract

Edible composite coatings were prepared from whey protein isolate (WPI), whey protein concentrate (WPC) or hydroxypropyl methylcellulose (HPMC) as the hydrophilic phase, and beeswax (BW) or carnauba wax (CarW) as the lipid phase. Apple pieces were coated with the emulsion coatings and weight loss and color (CIELAB color parameters, L*, a*, b*, and browning index (BI)) were measured during storage. Results show that apple pieces coated with whey protein-based coatings had higher L*, and lower b*, a*, and BI-values than HPMC-based coated and uncoated apple pieces, which indicate that whey proteins exert an antibrowning effect. Coatings containing BW were more effective in decreasing enzymatic browning than coatings containing CarW. The sensory panel differentiated samples coated with whey protein-based coatings from samples coated with HPMC-based coatings. However, differences due to lipid type were less evident at the end of the storage time. Coating application did not reduce weight loss in fresh-cut apples, probably due to the high relative humidity of the product.