Title Shelf-life of whey protein concentrate-gellan coated kiwifruit (*Actinidia deliciosa*)

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Abstract

Major losses in quality and quantity of fresh fruits occur between harvest and consumption. Edible coating can effectively provide protection for fresh fruits. In this paper we use an edible coating based on whey protein concentrate (WPC) and four different levels of rice bran oil (0, 0.2, 0.4 and 0.6) to maintain the quality of kiwifruit (*A. deliciosa*). We have analyzed total soluble solids content, titratable acidity, weight, colour, firmness, pH of four coated groups and a control group in four subsequent weeks. Edible coatings contain the highest level of rice bran oil (T4) was extending lower fruit weight loss (0.32 %). The fruits coated with T1, T2 and T3 solutions presented lower weight loss to the uncoated samples. Weight loss was highest (0.125%) for fruit without any coatings after 28 days of storage time. Generally, all kiwis exhibited an increase, when their initial Total soluble solids content (13.40±0.66 as oBrix) and titratable acidity (3.90±0.018) were compared to final ones at the end of storage period, to varying extents, depending on the applied specific treatment. Application of coatings on kiwis delayed TA in the kiwi pulp. Edible coatings contain the highest level of rice bran oil (T4) was extending lower fruit weight loss (0.32 %). The fruits coated with T1, T2 and T3 solutions presented lower weight loss to the uncoated samples. Weight loss was highest (0.125%) for fruit without any coatings after 28 days of storage time. All whey protein concentrate with and without rice bran oil coatings were effective in the retention of kiwi flesh color as was shown by changes in the L *, a*, b* and ab* values.