

**Title** New edible coatings composed of galactomannans and collagen blends to improve the postharvest quality of fruits – Influence on fruits gas transfer rate

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### **Abstract**

The objective of this work was to produce new edible coatings, based on a mixture of galactomannans from novel sources (seeds of *Adenantha pavonina* and *Caesalpinia pulcherrima*), collagen and glycerol, and to determine their influence in gas transfer rates when they are applied on mangoes and apples. The first part of the work consisted in obtaining coating solutions with the convenient values of wettability for each fruit; such coating solutions were then characterized in terms of their permeability (to CO<sub>2</sub>, O<sub>2</sub> and water vapour), mechanical properties, colour and opacity. Gas transfer rates from mangoes coated with a solution of *A. pavonina* galactomannan (0.5%), collagen (1.5%) and glycerol (1.5%) were compared with those of mangoes without coating: 28% less O<sub>2</sub> consumption and 11% less CO<sub>2</sub> production were observed in coated mangoes. The same procedure was performed in apples (in this case using *C. pulcherrima* galactomannan (0.5%), collagen (1.5%) and no glycerol); the CO<sub>2</sub> production and the O<sub>2</sub> consumption was approximately 50% lower in apples with coating than in apples without coating. The results suggest that these coatings can reduce gas transfer rates in these fruits, and can be therefore important tools to extend their shelf life.