

GALACTOMANNANS/COLLAGEN EDIBLE COATINGS IN GAS TRANSFER RATES IN FRUITS

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One of the most important problems in fruit conservation is their short shelf life. Fruits are living organisms which continue to respire after harvesting. Shelf-life can be extended by reducing respiration rates. This is done by controlling factors such temperature, relative humidity, gas composition (ethylene, O₂ and CO₂) and light. An important strategy to control some of these factors is the use of modified atmospheres, obtained using galactomannan coatings, that show low caloric contents. Collagen coatings have already been used on meats and sausages to reduce gas permeability and/or water vapor permeability (WVP). The objective of this work was to produce new edible coatings, based on the mixture of galactomannan, collagen and glycerol, and study their influence in gas transfer rates in mangoes and apples. The coatings presenting the best values of wettability (previously studied) were tested in relation to their gas permeability properties (CO₂, O₂ and H₂O). Mangoes coated with a solution of *Adenantha pavonina* galactomannan, collagen and glycerol, and the gas transfer rates compared with mangoes without coating. The gas transfer rate was calculated. A 28% less O₂ consumption and 11% less CO₂ production were observed in coated mangoes when compared with mangoes without coating. The same procedure was done in apples (in this case using *Caesalpinia pulcherrima* galactomannan). The CO₂ production and the O₂ consumption is approximately 50% lower in apples with coating than in apples without coating. Results suggest that these coatings can reduce gas transfer rates in these fruits, and can be important tools to extend shelf-life of fruits.

Supported by CAPES/CNPq, VALNATURA, FCT, RENORBIO, UMINHO, UNIFOR, UFC,

Keywords: edible coating, galactomannan, collagen.