

Evaluation of Edible Films Formulated with Galactomannan from *Delonix regia* Seeds with addition of Vegetable Oil

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INTRODUCTION: The utilization of renewable sources for packaging materials, such as plant polysaccharides, is one the main trends of the industry. Edible films have been considered a potential technology that can be used to increase the storability of foods. Lipids as vegetable oils, due to their hydrophobic behavior, are often added to polysaccharide films to decreasing their hydrophilicity, to improve structural and barrier properties. **OBJECTIVES:** This study aimed to evaluated the physicalchemical properties of edible films based on galactomannan (GAL) from *D. regia* seeds incorporated with addition of Canola Oil (CO) as vegetable oil. **MATERIAL AND METHODS:** The fatty acid composition of CO was determined by gas chromatography (GC-FID). The films were prepared by *casting* method with GAL solutions 1% (w/v), glycerol 0.5% (v/v) as plasticizer and CO at different concentrations (0.25, 0.5 and 0.75%) (w/v) and characterized to the moisture content, thickness, water vapor permeability (WVP) and optical properties (color and opacity). The thickness of the films was measured using a digital micrometer; Water Vapor Permeability (WVP) was determined gravimetrically at 25°C and the films were placed into permeability cells containing 6 mL of water conditioned in a desiccator (25 °C, relative humidity 52 ± 2%) and weighed at 1 hour intervals. The color and opacity of the films were measured using a colorimeter. **RESULTS AND DISCUSSION:** The composition of CO showed oleic acid (62.07%) and linoleic (18.91%) content. The films showed low values of moisture content between 12.0% and 14.0%; thicknesses between 0.029 and 0.054 mm; The WVP increased with the addition of CO with values between 1.056 and 1.954 g.mm/kPa.h.m²; All the films showed higher lightness and low opacity due to the increase of CO concentration. **CONCLUSION:** The CO promoted changes in physical and barrier properties of the GAL films and showed potential as packaging materials.

Keywords: barrier properties, packaging, polysaccharide.

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