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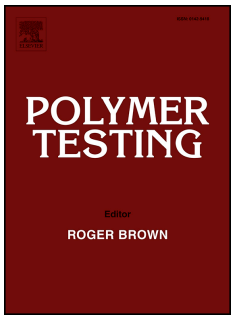

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OKRA MUCILAGE AND CORN STARCH BIO-BASED FILM TO BE APPLIED IN FOOD

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ABSTRACT

Okra mucilage/corn starch films to apply in food were developed by casting and then characterized to know its main requirements for packing material. The film was submitted to an acute toxicity analysis in rats by ingesting the filmogenic solution. An okra mucilage material obtained by precipitation was analyzed by thermal analysis, Fourier Transformed Infrared Spectroscopy and Scanning Electron Microscopy with Energy Dispersive Spectroscopy. Okra mucilage and corn starch films presented compact and uniform structure, low water vapor permeability (1.32 to 2.84 g/m s Pa), low solubility (around 15%), good thermal and mechanical properties, swelling capacity (about 95%), and no toxicological responses. The precipitated material presented similar characteristics to those of polysaccharides. Thus, okra mucilage differed in view of its improvement in film properties because of high quality intermolecular bonds. The film obtained with okra mucilage has excellent potential to be applied in food packaging.

Keywords: Okra; Corn starch; Films; Toxicity; Food.