



Properties of starch extracted from potato peels

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Abstract

Starch is the subject of many investigations due to their beneficial properties and the availability of some functional properties. In this instance, the main objective of this work is to achieve two primary goals. The first one is to use plant-derived waste by extracting starch from potato skins. To compare it with the starch extracted from potato, study the chemical composition of the two starches and determine the content of amylose and amylopectin because each of these compounds is relative to the final function and thus plays a decisive role. The structure and properties of the two powder resulting were fully characterized by Fourier transform infrared spectroscopy (ATR-FTIR), X-ray diffraction analysis (XRD), and Thermogravimetric Analysis.

The second purpose is therefore the development of the food packaging from these two starches using glycerol as a plasticizer at the ratio of 30% (w/w, starch basis) using a solution casting technique. The developed films were analyzed in terms of environmental and barrier properties. Their antibacterial properties were compared as well. The findings of this research provide insights that are very interesting in extracting starch from potatoes and also into the development of bio-degradable food packaging.

Keywords: Food packaging, biopolymer, potato peel, chemical composition, antibacterial properties