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Physicochemical and Gelling Characterizations of Pectin Extracted from Sweet Potato Pulp

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A novel pectin was extracted from sweet potato (*Ipomoea batatas*) pulp (SPP) using 50 mM disodium phosphate solution. Uronic acids in the pectin extract were almost completely removed from the supernatant after the addition of 0.3 volumes 95% ethanol. The sweet potato pectin consisted of 64.8% galacturonic acid and small amounts of neutral sugars. The ash concentration was 21.6% and sodium comprised 6.1 g per 100 g of the pectin. The degree of esterification of the pectin was 1.4%. The infrared spectrum of the pectin was similar to that of sodium polypectate. These results indicate that most of the carboxyl groups of the pectin are replaced by sodium. The pectin had average molecular-weights of approximately 7.85×10^5 and 2.42×10^5 Da. The viscosity was of the pectin (2%) the 130 mm^2/s at 5°C. The effect of extrinsic parameters, such as pH and concentrations of pectin, calcium and sucrose, on the breaking pressure of the pectin gel was evaluated. The results of the breaking pressure analysis of the pectin gel indicate that the pectin has properties typical of low methoxyl pectin.

Key words: sweet potato, LM-pectin, gel, FT-IR spectroscopy

[PDF (369K)] [References]