

Isolation and physicochemical characterization of sour orange pectin

Nayanaransi L.A.U.¹, Edussuriya M.^{1*} and Dissanayake A.S.²

¹*Department of Chemistry, University of Ruhuna, Matara, Sri Lanka*

²*Department of Pharmacy, Faculty of Allied Health Sciences, University of Ruhuna, Galle, Sri Lanka*

Sour orange (*Citrus aurantium* sp.) has not been explored sufficiently as a potential source of pectin, and its peel as a waste from fruit juice industry has been recently under investigation as a potential low-cost source of pectin. In the present work, pectin was efficiently extracted in moderately high yield from sour orange peels in acidic medium, which was not explored for the same raw material before. Chemical confirmatory tests were carried out to identify the characteristics of the isolated pectin. The isolated pectin has mainly glycosides with gel-forming properties and free from starch and non-reducing sugar. Qualitative tests were carried out to study the solubility of pectin in hot/cold water and hot/cold alkali, and it was found that the solubility of sour orange pectin is similar to that of commercial citrus pectin. Equivalent weight, methoxyl content, anhydrouronic acid content and degree of esterification were determined by titrimetric methods. Low degree of esterification (<28.6%) made it evident that the sour orange pectin is a low-methoxyl pectin. According to X-Ray Diffraction (XRD) analysis, sour orange pectin was found to be amorphous by nature. FTIR spectra of isolated pectin revealed the existence of functional groups such as amide, alcohol, carbohydrate ring, unsaturated ester, carboxylic acid, aliphatic amine and alkyl halide, and isolated sour orange pectin was identified as amidated pectin

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*Corresponding Author: madurani@chem.ruh.ac.lk