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FTIR Characterization of Polysaccharides of Pineapple Waste

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Abstract

The increase of pineapple production due to demand from worldwide creates a huge number of wastes accumulated in landfill which later contributed to the environmental concern. In order to overcome this issue, utilization waste is thought to be beneficial way to save the environmental problems. The most sustainable way of handling these residues is to exploit the residues from pineapple production to create valuable products via technological method. Pineapple waste has been known for being a reliable source of value-added product such as polysaccharide. This indicated that the characterization of polysaccharide is important for value added product industry which can be extracted from pineapple waste. Thus, this study is to examined the characterization of polysaccharide from different sources of pineapple wastes including leaves, peel, pomace and stem. Fourier- transform infrared spectroscopy (FTIR) was used to characterize the polysaccharide compound in sample extracts as it is a well-established technique which has been widely applied in polysaccharide structural analysis. It was found that the FTIR spectrum of leaves, peel, pomace and stem displayed the characteristic peaks of polysaccharides. The IR spectra of the four samples are almost identical to each other, indicating that they have the same chemical structure. These results provide a scientific basis for the further use of polysaccharides from pineapple leaves, peel, pomace and stem.

Keywords: Characterization; FTIR; Pineapple waste; Polysaccharides