

**EXTRACTION AND CHARACTERIZATION OF PECTIN FROM KEY
LIMES PEELS USING ACETIC ACID BASED DEEP EUTECTIC
SOLVENT (DES)**

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ABSTRACT

EXTRACTION AND CHARACTERIZATION OF PECTIN FROM KEY LIMES PEELS USING ACETIC ACID BASED DEEP EUTECTIC SOLVENT (DES)

Pectin has been used widely as thickener, stabilizer and gelling agent. However, pectin industry uses corrosive solvent such as acid hydrochloric to extract pectin. The strong acid may obtain high yield of pectin but it is very toxic. Hence, DES is introduced to drawback the toxicity. The objective of this research is to extract pectin from key limes peels using conventional solvent of acetic acid and deep eutectic solvent DES based acetic acid. The extracted pectin from both solvents were characterize in terms of ash content, degree of esterification (DE), water solubility, moisture content, anhydrouronic acid content and methoxyl content using standard methods. Pectin extracted with 10% DES obtained high yield compared to 10% acetic acid which 26.84% and 9.34, respectively. DE, moisture content, ash content and methoxyl content obtained almost similar value. Next, the methoxyl content for pectin extracted using both solvents were found 14.54% and 15.62% which grouped under high methoxyl pectin and able to form gel as well as strong cohesive and adhesive properties. Pectin extracted with 10% DES have lower water solubility and lower AUA compared to 10% acetic acid. AUA from 10% DES was categorized as high AUA due to it exceed 65% and suitable for food industry. The water solubility for 10% DES was 66.42% which low compared to 10% acetic acid which 70.43%. The insolubility of extracted pectin is most likely due to the presence of electrolytes in de-methylated pectin acid.