Citric acid extraction of pectin from tropical fruit peels of passion fruit, dragon fruit and soursop

ABSTRACT

Pectin has been intensively used as natural gelling agent and stabilizer to alter rheological properties in food ingredients by most food processing industries in achieving desired textural quality. Three tropical fruit peels, the yellow passion fruit, red dragon fruit, and soursop were selected for optimised extraction of pectin using citric acid extraction by varying pH from 2.0 to 4.5 and extraction time from 30 to 120 min. Peels of yellow passion fruit and dragon fruit gave pectin yield of 14.24% and 12.56% with degree of esterification (DE) of 55.54% and 47.88% at optimised extraction conditions of pH 2.37 and extraction times of 58.47 and 64.67 min, respectively. The soursop peel had relatively low pectin of < 6%. The pH of extraction solvent had significant effect on pectin yield where pH 2.0 was suggested for high pectin yield. The passion fruit and dragon fruit peels which have greater capability for producing pectin are recommended for the pectin industry.

Keyword: Pectin; Degree of esterification; Tropical fruit peels; Citric acid; Extraction