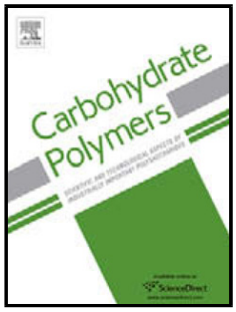

Title: PROCESS OPTIMIZATION AND ANALYSIS OF MICROWAVE ASSISTED EXTRACTION OF PECTIN FROM DRAGON FRUIT PEEL

Author: K. Thirugnanasambandham V. Sivakumar J. Prakash Maran

PII: S0144-8617(14)00620-1
DOI: http://dx.doi.org/doi:10.1016/j.carbpol.2014.06.044
Reference: CARP 9009

To appear in:

Received date: 16-4-2014
Revised date: 23-5-2014
Accepted date: 11-6-2014

Please cite this article as: Thirugnanasambandham, K., Sivakumar, V., and Maran, J. P.,PROCESS OPTIMIZATION AND ANALYSIS OF MICROWAVE ASSISTED EXTRACTION OF PECTIN FROM DRAGON FRUIT PEEL, *Carbohydrate Polymers* (2014), http://dx.doi.org/10.1016/j.carbpol.2014.06.044

PROCESS OPTIMIZATION AND ANALYSIS OF MICROWAVE ASSISTED EXTRACTION OF PECTIN FROM DRAGON FRUIT PEEL

K. Thirugnanasambandham[a], V. Sivakumar[a*] and J. Prakash Maran[a]

[a] Department of Food Technology, Kongu Engineering College, Perundurai, Erode-638052, TN, India.

*Corresponding author

E-mail: drvsivakumar@yahoo.com

Tel.: +91-4294-226606

Fax: +91-4294-220087

Abstract

Microwave assisted extraction (MAE) technique was employed for the extraction of pectin from dragon fruit peel. The extracting parameters were optimized by using four-variable-three-level Box–Behnken design (BBD) coupled with response surface methodology (RSM). RSM analysis indicated good correspondence between experimental and predicted values. 3D response surface plots were used to study the interactive effects of process variables on extraction of pectin. The optimum extraction conditions for the maximum yield of pectin were power of 400 W, temperature of 45^{o}C, extracting time of 20 min and solid-liquid ratio of 24 g/mL. Under these conditions, 7.5% of pectin was extracted.

Keywords: Pectin, Dragon fruit, Microwave Extraction, Box-Behnken Design, Optimization.