

Accepted Manuscript



ADSORPTIVE RECOVERY OF PHENOLICS FROM APPLE JUICE via BATCH AND FIXED BED COLUMN

E. Aytunga Arik Kibar

PII: S0260-8774(18)30286-3
DOI: 10.1016/j.jfoodeng.2018.07.005
Reference: JFOE 9319
To appear in: *Journal of Food Engineering*
Received Date: 12 March 2018
Accepted Date: 03 July 2018

Please cite this article as: E. Aytunga Arik Kibar, ADSORPTIVE RECOVERY OF PHENOLICS FROM APPLE JUICE via BATCH AND FIXED BED COLUMN, *Journal of Food Engineering* (2018), doi: 10.1016/j.jfoodeng.2018.07.005

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

1 **ADSORPTIVE RECOVERY OF PHENOLICS FROM APPLE JUICE via BATCH**
2 **AND FIXED BED COLUMN**

3 E. Aytunga Arık Kibar

4 Running Title: Adsorptive Recovery of Apple Phenolics via Polymeric Resin

5 Address: TÜBİTAK MAM Gıda Enstitüsü Barış Mah. Dr. Zeki Acar Cad. No:1

6 P.K. 21 41470 Gebze Kocaeli Turkey

7 Telephone: +90 262 677 3226

8 E-mail: aytunga.kibar@tubitak.gov.tr

9 **Abstract**

10 Apple juice contains many phenolic compounds, including flavonols, flavanols,
11 anthocyanins, hydroxycinnamic acids, and dihydrochalcones, with many reported health
12 benefits. Patulin is the main toxic microbiological contaminant associated with apple
13 products. In the present study, adsorption of phenolic compounds from apple juice
14 concentrate onto polymeric resin was investigated with the goal of recovering antioxidant
15 components. Simultaneous adsorption risk of the contaminant patulin with the phenolics
16 was also evaluated. The adsorption kinetics was studied in batch experiments. Three
17 kinetic models, Thomas, Adams–Bohart, and Yoon–Nelson, were applied to experimental
18 data to predict dynamic behaviour of fixed bed column using nonlinear regression, and
19 thus to determine the characteristic parameters that are useful for process design.

20 **Keywords:** apple juice, phenolic compounds, resin adsorption, patulin, kinetic modelling

Download English Version:

<https://daneshyari.com/en/article/6664391>

Download Persian Version:

<https://daneshyari.com/article/6664391>

[Daneshyari.com](https://daneshyari.com)