

INTISARI

PENGARUH RASIO *EPOXIDIZED NATURAL RUBBER* (ENR) DAN NaOH PADA SINTESIS ADSORBEN ENR- β-CD TERHADAP KEMAMPUAN ADSORPSI BETALAIN DARI KULIT BIT (*Beta vulgaris L.*)

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Tujuan dari penelitian ini adalah sintesis adsorben untuk ekstraksi betalain. *Epoxidized Natural Rubber-β-Cyclodextrin*(ENR-β-CD) merupakan jenis adsorben baru yang digunakan untuk mengadsorpsi betalain. Adsorpsi betalain dari jus kulit buah bit (*Beta vulgaris L.*) dilakukan pada adsorben yang diperoleh dari perlakuan kondisi sintesis ENR-β-CD yang berbeda. Pengaruh perlakuan perbedaan konsentrasi NaOH dan rasio perbandingan ENR terhadap β-CD telah diteliti. Adsorpsi tertinggi sebesar 88% yaitu pada perlakuan penambahan NaOH 30% dengan perbandingan ENR-β-CD 5:1. Perlakuan terbaik adalah penambahan NaOH 20% dengan perbandingan ENR-β-CD 4:1. Data isothermal adsorpsi dianalisis dengan model adsorpsi isothermal Langmuir dan Freundlich. Kapasitas adsorpsi (q_m) dan intensitas adsorpsi (b) secara berturut-turut adalah 0,84 dan 1,19. Kapasitas adsorpsi (K_f) dan intensitas adsorpsi (n) yang diperoleh dari plotting perhitungan dengan model isothermal adsorpsi Freundlich adalah berturut-turut 10,59 dan 0,913 akan tetapi, adsorben β-CD tidak *reusable*.

kata kunci : adsorpsi, betalain, *Epoxidized Natural Rubber*, karet alam, siklodekstrin

**EFFECT OF *EPOXIDIZED NATURAL RUBBER* (ENR) RATIO AND NaOH ON
SYNTESIS ADSORBEN ENR- β -CD FOR BETALAIN ADSORPTION FROM BIT
PEEL (*Beta vulgaris L.*)**

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The objective of this research was to synthesize adsorbent for extraction of betalains. *Epoxidized Natural Rubber- β -Cyclodextrin*(ENR- β -CD) as adsorbent was synthesized and evaluated in this study as a novel adsorbent for the adsorption of betalains. Adsorption of betalains from aqueous solution using beet (*Beta vulgaris L.*) peel was studied under different experimental conditions. The influence of variables including NaOH concentration and ENR to β -CD ratio has been investigated. The best treatment was obtained at addition of NaOH 20% and ratio ENR : β -CD 4:1. The isotherms of adsorption data were analyzed by Langmuir and Freundlich adsorption isotherm models. The adsorption capacity (q_m) and adsorption intensity (b) obtained from the Langmuir isotherm plots were 0.84 mg/g and 1.19 mg/g , respectively. The adsorption capacity (K_f) and adsorption intensity (n) obtained from the Freundlich isotherm plots were 10.59 and 0.913, respectively. However, it is seen that ENR- β -CD is not reusable.

Keyword : adsorption, betalains, cyclodextrin, epoxidized natural rubber, natural rubber