

**PENGARUH KONSENTRASI NATRIUM HIDROKSIDA
(NaOH) TERHADAP KARAKTERISTIK *CARBOXYMETHYL
CELLULOSE* (CMC) DARI NATA DE PINA**

ILMAN SAHPUTRA



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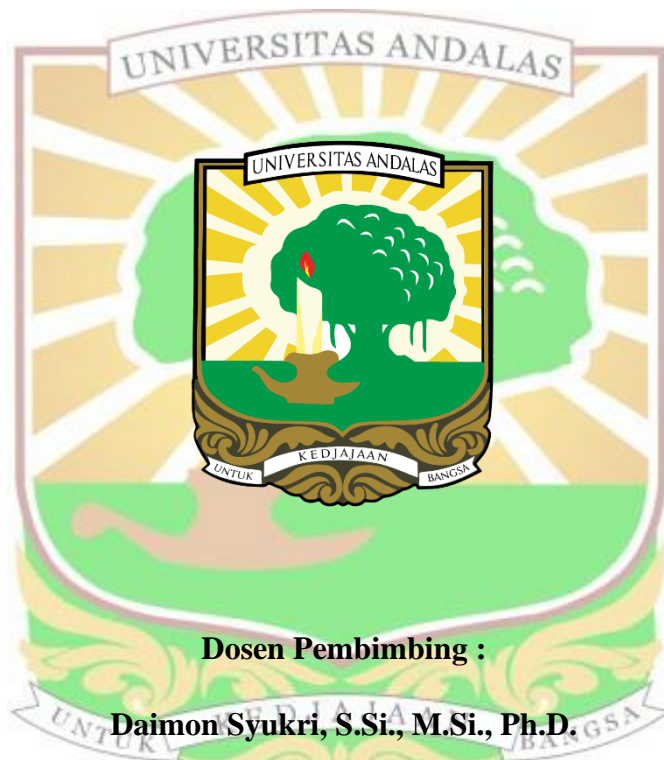
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Pengaruh Konsentrasi Natrium Hidroksida (NaOH) Terhadap Karakteristik *Carboxymethyl Cellulose* (CMC) dari *Nata De Pina*

Ilman Sahputra, Daimon Syukri, Wellyalina

ABSTRAK

Penelitian ini bertujuan Untuk mengetahui pengaruh penambahan Natrium Hidroksida (NaOH) dalam sintesis *Carboxymethyl cellulose* (CMC) nata de pina dan Untuk mengetahui perlakuan Natrium Hidroksida (NaOH) terbaik dalam sintesis *Carboxymethyl cellulose* (CMC) nata de pina. Rancangan penelitian yang digunakan adalah Rancangan Acak lengkap (RAL) dengan lima perlakuan dan masing-masing tiga kali ulangan. Perlakuan pada penelitian ini adalah variasi penggunaan NaOH, dimana A (NaOH 5%), B (NaOH 7,5%), C (NaOH 10%), D (NaOH 12,5%), E (NaOH 15%). Data dianalisis secara statistik menggunakan *Analisis Of Varians* (ANOVA) dan dilanjutkan dengan analisis *Duncan's New Multiple Range Test* (DMRT) pada taraf 5%. Hasil penelitian menunjukkan bahwa variasi penambahan NaOH berpengaruh signifikan terhadap kadar air, derajat substitusi, kemurnian CMC, kadar NaCl, serta viskositas. Tetapi tidak berpengaruh signifikan terhadap nilai pH CMC *Nata De Pina*. Karakteristik CMC *Nata De Pina* terbaik dihasilkan pada penambahan NaOH 10% (perlakuan C) yang memiliki kadar air sebesar 8.25%, derajat substitusi sebesar 1.01, kadar NaCl sebesar 9.94%, kemurnian CMC sebesar 86,07%, nilai viskositas sebesar 22.32 mPa.S, dan nilai pH sebesar 7,55. Pada analisis kelarutan dapat larut dalam pelarut air, tetapi tidak larut dalam pelarut etanol, n-heksan, etil asetat.

Kata kunci : alkalisasi, CMC, karboksimetilasi, kulit nanas, NaOH



The Effect of Sodium Hydroxide (NaOH) Concentration on the Characteristics of Carboxymethyl Cellulose (CMC) from Nata De Pina

Ilman Sahputra, Daimon Syukri, Wellyalina

ABSTRACT

This research aims to determine the effect of adding Sodium Hydroxide (NaOH) in the synthesis of Carboxymethyl cellulose (CMC) nata de pina and to determine the best Sodium Hydroxide (NaOH) treatment in the synthesis of Carboxymethyl cellulose (CMC) nata de pina. The research design used was a completely randomized design (CRD) with five treatments and three replications each. The treatments in this study were variations in the use of NaOH, where A (NaOH 5%), B (NaOH 7.5%), C (NaOH 10%), D (NaOH 12.5%), E (NaOH 15%). Data were analyzed statistically using Analysis of Variance (ANOVA) and continued with Duncan's New Multiple Range Test (DMRT) analysis at the 5% level. The research results showed that variations in NaOH addition had a significant effect on water content, degree of substitution, CMC purity, NaCl content and viscosity. But it did not have a significant effect on the pH value of CMC Nata De Pina. The best characteristics of CMC Nata De Pina were produced by adding 10% NaOH (treatment C) which had a water content of 8.25%, degree of substitution of 1.01, NaCl content of 9.94%, CMC purity of 86.07%, viscosity value of 22.32 mPa.S , and a pH value of 7.55. In solubility analysis, it can dissolve in water solvents, but does not dissolve in ethanol, n-hexane, ethyl acetate solvents.

Keywords: alkalization, carboxymethylation, CMC, NaOH, pineapple peel waste

