

ABSTRACT

THE EFFECT OF LIQUOR-TO-SEAWEED'S EXTRACT RATIO AND HYDROGEN PEROXYDE (H₂O₂) CONCENTRATION TO CHEMICAL PROPERTIES OF *Eucheuma cottonii* SEAWEED'S EXTRACT BASIS PULP

By

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Pulp is the raw material for making paper. Increasing demand of paper cause high pulp demand. To prevent the exploitation of forests, other raw materials which enviromental friendly are needed for properties improvement. The usage of *Eucheuma cottonii* seaweed's extract as pulp raw material can decrease usage of chemical solutions and H₂O₂ as bleaching agent. The aim of this experiment was to get liquor-to-seaweed's extract ratio and hydrogen peroxyde concentration that can give the best chemical properties of pulp.

The research in this phase was prepared by a multiple treatment in a structured Complete Randomised Group Design. The factors investigated in this phase were the liquor-to-seaweed's extract ratio which consisted of 3 levels: 2:1 (R1), 4:1 (R2), and 6:1 (R3), and concentrations of H₂O₂ which consisted of 4 levels: 0% (H0), 2% (H1), 4% (H2), and 6% (H3). The overall research was carried out in three replications and then the data were analyzed by using Bartlett Test. Tuckey Test was used for their homogeneity and additivity. Then they were analyzed

further using LSD each at level 1% and 5% to look for differences between the bleaching process (Steel and Torrie, 1995).

The results showed that liquor-to-seaweed's extract ratio has influence in yield, water content, cellulose, hemicellulose, lignin, and ash. The best liquor-to-seaweed's extract ratio results was 2:1 with the yield of 63,46%, water content 95,57%, content of cellulose 59,15%, hemicellulose 12,14%, lignin 16,07%, and ash value 1,67% respectively. And hydrogen peroxyde (H_2O_2) concentrations has influence in hemicellulose, lignin, and ash, but they have no influence in yield, water content, and cellulose. The best H_2O_2 concentration result was obtained from the bleaching process through using H_2O_2 2%, has the characteristic of yield 60,57%, water content 95,94%, cellulose 59,08%, hemicellulose 11,22%, lignin 15,61%, and ash value 1,43% respectively. There are no interaction between liquor-to-seaweed's extract ratio and H_2O_2 concentration.

Keyword : liquor-to-seaweed's extract ratio, hydrogen peroxyde, pulp, *Eucheuma cottonii*