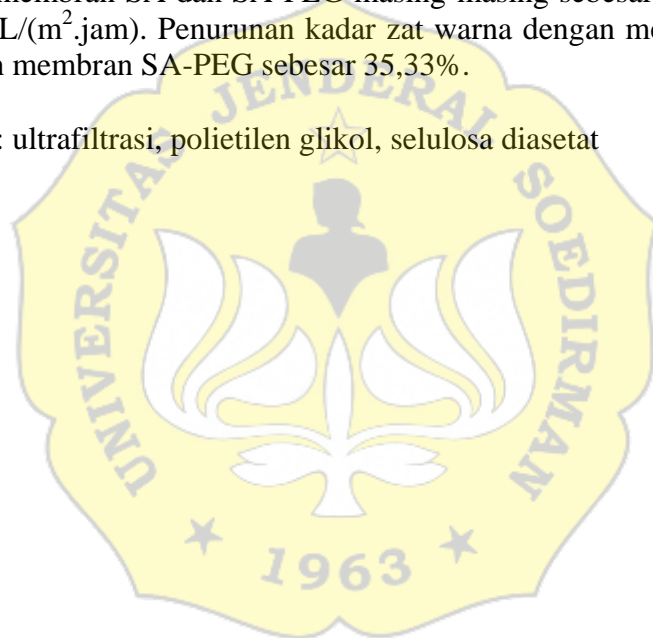


ABSTRAK

Teknologi membran merupakan salah satu teknologi pemisahan yang aplikasinya telah meluas ke berbagai sektor termasuk sektor pengolahan air dan limbah tekstil. Salah satu contoh polimer yang dapat digunakan untuk material membran adalah selulosa asetat. Pulp serat batang pisang merupakan salah satu sumber selulosa yang dapat dimanfaatkan untuk menghasilkan selulosa asetat (SA). Tujuan dari penelitian ini adalah untuk mengetahui karakterisasi membran dengan aditif polietilen glikol (PEG) yang meliputi uji fluks dan rejeksi serta mengetahui persentase penurunan zat warna. Selulosa asetat disintesis dari pulp serat batang pisang melalui proses asetilasi. Pembuatan membran selulosa asetat melalui metode inversi fasa dengan pelarut aseton. Nilai fluks limbah yang dihasilkan membran SA dan SA-PEG masing-masing sebesar 22,936 L/(m².jam) dan 25,895 L/(m².jam). Penurunan kadar zat warna dengan membran SA sebesar 33,12% dan membran SA-PEG sebesar 35,33%.

Kata kunci: ultrafiltrasi, polietilen glikol, selulosa diasetat



ABSTRACT

Membrane Technology is one of the separation technologies which their application has expanded to various sectors including water and textile waste treatment. One of the polymer that can be used for membrane material is cellulose acetate. Pulp of fiber banana stem is one of the cellulose sources which can be used to produce cellulose acetate. The aims of this study is to cognize the characteristic of cellulose acetate membrane with polyethylene glycol (PEG) additives, such as flux and rejection test, and to know the percentage of dye decrease. In this research, the cellulose acetate was synthesized from pulp of fiber banana stem through acetylation process, and cellulose acetate membrane itself was produced through phase inversion method with acetone solvent. The value of the waste flux resulted by cellulose acetate membranes without PEG and with PEG additives was around 22.936 L/(m².hour) and 25.895 L/(m².hour) respectively. Finally, the reduction of dyestuff resulted after treatment with both membranes was around 33.12% for cellulose acetate membrane without PEG and 35.33% for cellulose acetate membrane with PEG additives.

Keyword : Cellulose diacetate, ultrafiltration, polyethylene glycol

