

ABSTRAK

Pembuatan membran *nata de bamboo* dilakukan dengan cara memurnikan *nata de bamboo* hasil fermentasi bakteri *Acetobacter xylinum*. Tujuan dari penelitian ini adalah untuk mengetahui karakteristik membran *nata de bamboo* yang kemudian di aplikasikan sebagai alat filtrasi untuk menurunkan nilai BOD, COD, TSS dan TDS limbah cair tapioka. Karakterisasi membran meliputi berat jenis, nilai fluks, koefisien rejeksi dan kekuatan tarik. Hasil penelitian menunjukkan bahwa berat jenis membran sebesar $1,8615 \text{ g/cm}^3$, nilai fluks air sebesar $48,916 \text{ L/m}^2 \cdot \text{jam}$, fluks limbah sebesar $6,114 \text{ L/m}^2 \cdot \text{jam}$. Nilai rejeksi sebesar 79,56 % dan kekuatan tarik sebesar 82,5 MPa. Hasil proses koagulasi-flokulasi dan filtrasi menggunakan membran *nata de bamboo* dapat menurunkan nilai BOD sebesar 91,42 %, COD sebesar 88,57 %, TSS sebesar 87,26 % dan TDS sebesar 57,82 %.

Kata kunci : filtrasi, limbah tapioka, membran, *nata de bamboo*.



ABSTRACT

*The preparation about nata de bamboo membrane had been done by purifying the nata de bamboo fermented by the bacteria *Acetobacter xylinum*. The purpose of this study was to glimpse the bamboo membrane which was then applied as a filtration tool to reduce the BOD, COD, TSS and TDS values of tapioca liquid waste. Membrane characterization included density, flux value, rejection coefficient and tensile strength. The results showed that the density of the membrane was 1.8615 g/cm^3 , the water flux value was $48.916 \text{ L/m}^2 \cdot \text{hour}$, the waste flux was $6.114 \text{ L/m}^2 \cdot \text{hour}$. The rejection value was 79.56% and the tensile strength was 82.5 MPa. The results show that the coagulation-flocculation and filtration processes using nata de bamboo membrane can reduce the BOD value by 91.42 %, COD of 88.57 %, TSS of 87.26 % and TDS of 57.82 %.*

Keyword : *filtration, membrane, nata de bamboo, tapioca waste.*

