ABSTRAK

SINTESIS DAN KARAKTERISASI BIODEGRADABLE FOAM DARI LIMBAH PADAT BONGOL NANAS MENGGUNAKAN POLIVINIL ALKOHOL DENGAN VARIASI WAKTU

Oleh

TIRZA JUITA PUTRI LANYO

Pada penelitian ini, telah dilakukan sintesis dan karakterisasi biodegradable foam dari limbah padat bongol nanas menggunakan polivinil alkohol dengan variasi waktu . Penelitian ini telah dilakukan untuk membandingkan hasil variasi waktu pada sampel yang sudah di tempressing dengan alat thermopressing. Penelitian ini dilakukan dalam beberapa tahapan yakni isolasi dan karakterisasi selulosa, FTIR, Penguji kekerasan (Hardness Tester),Water Absorption Index (WAI). Dari penilitian ini diperoleh selulosa berwarna putih kekuningan sebanyak 18,64. Hasil spektra FTIR selulosa isolasi dan selulosa komersial tidak menunjukkan perbedaan. Hasil katerisasi dan analisis dengan selulosa, pada Penguji Kekerasan (Hardness Tester). biofoam yang paling keras terdapat pada sampel variasi waktu 15 menit yang hasilnya 13,5 kg , biofoam yang paling gampang retak terletak pada variasi waktu 40 menit yang hasilnya 18 gr, serta biofoam yang tidak mengalami keretakan namun, agak melengkung apabila dibandingkan dengan bentuk semula. Pada uji water absorpsion index memakai system standar prosedur ABNT NBR NM ISO 535(1999)). Sampel kemudian ditimbang kembali dan dihitung pertambahan berat sampel., didapat pada sampel variasi waktu15 menit yang sudah dicelup air 0,1607 gr dan sesudah di celup air 0,1766 gr. sampel variasi waktu 25 menit sebelum dicelup air hasilnya 0,2250 gr, dan sesudah dicelup 0,3558. Dan variasi yang terakhir 40 menit, sebelum dicelup 0,2242 gr dan sesudah di celup menjadi 0,3510 gr.

Kata Kunci : Isolasi selulose, *biodegradable foam*, FTIR, *Hardness Tester*, WAI

ABSTRACT

SYNTHESIS AND CHARACTERIZATION OF BIODEGRADABLE FOAM FROM PINEAPPLE HEAD SOLID WASTE USING POLIVINYL ALCOHOL WITH TIME VARIATION

By

TIRZA JUITA PUTRI LANYO

In this research, the synthesis and characterization of biodegradable foam from pineapple hump solid waste using polyvinyl alcohol was carried out with variations in time. This research has been conducted to compare the results of time variations on samples that have been tempered with a thermopressing tool. This research was conducted in several stages, namely the isolation and characterization of cellulose, FTIR, Hardness Tester, Water Absorption Index (WAI). From this research, 18.64% yellowish white cellulose was obtained. The results of the FTIR spectra of isolated cellulose and commercial cellulose showed no difference. Caterization results and analysis with cellulose, on the Hardness Tester. the hardest biofoam was found in the 15-minute time variation sample which resulted in 13.5 kg, the biofoam that cracked the easiest to crack was in the 40-minute time variation which resulted in 18 gr, and the biofoam which did not experience cracks however, was slightly curved when compared to its original form. The water absorption index test uses the standard procedure ABNT NBR NM ISO 535 (1999)). The sample was then weighed again and the sample weight gain was calculated. It was obtained from the 15-minute time variation sample that had been immersed in 0.1607 gr of water and after being immersed in 0.1766 gr of water. the sample time variation 25 minutes before being immersed in water the result is 0.2250 gr, and after being immersed it is 0.3558. And the last variation is 40 minutes, before being dyed 0.2242 gr and after being dyed it becomes 0.3510 gr.

Keywords: Cellulose isolation, biodegradable foam, FTIR, Hardness Tester, WAI