

**PENGARUH PENAMBAHAN SERBUK GELATIN TERHADAP
SIFAT MEKANIK DAN BIODEGRADABILITAS PLASTIK CAMPURAN
POLIETILEN TEREFTALAT BEKAS DAN PATI SAGU**

ABSTRAK

Telah dilakukan penelitian tentang pengaruh penambahan serbuk gelatin terhadap sifat mekanik dan biodegradabilitas plastik campuran polietilen tereftalat bekas dan pati sagu. Pada penelitian ini dibuat 4 sampel dengan penambahan serbuk gelatin yang divariasikan sebanyak 0 g, 5 g, 10 g dan 15 g. Sampel tersebut dilakukan penguburan selama 10 hari, 20 hari, 30 hari dan 40 hari. Hasil penguburan kemudian dilakukan pengujian sifat mekanik seperti kuat lentur, kuat tarik dan biodegradabilitas. Hasil menunjukkan serbuk gelatin kurang mempengaruhi kekuatan lentur sampel, nilai kuat lentur tertinggi didapatkan dari sampel tanpa penambahan serbuk gelatin. Nilai kuat tarik tertinggi didapatkan dari sampel dengan penambahan serbuk gelatin sebanyak 5 g sebesar 505,411 N/mm². Sampel yang paling cepat terdegradasi adalah sampel plastik campuran polietilen tereftalat bekas dan pati sagu dengan penambahan serbuk gelatin sebanyak 15 g.

Kata kunci : polietilen tereftalat, pati sagu, serbuk gelatin, biodegradabel,
kuat lentur dan kuat tarik

**EFFECT OF ADDITION OF GELATIN POWDER ON
THE MECHANICAL PROPERTIES AND BIODEGRADABILITY OF
PLASTIC EX-POLYETHYLENE TEREPHTHALATE WITH
SAGO STARCH**

ABSTRACT

The study on the effect of the addition of gelatin powder on the mechanical properties and biodegradability of plastic ex-polyethylene terephthalate with sago starch has been done. In this study, 4 samples were made by adding gelatin powder with variation of 0 g, 5 g, 10 g and 15 g. Sample were buried for 10 days, 20 days, 30 days and 40 days. After burying the samples, the mechanical properties such flexure strength, tensile strength and biodegradability were examined. These results indicate that the gelatin powder samples don't highly influence the flexure strength. The highest flexural strength values were obtained from the samples without the addition of gelatin powder. The highest tensile strength values were obtained from the samples with the addition of gelatin powder 5 g, 505.411 N/mm². The most rapidly degraded sample was resulted from mixture of plastic ex-polyethylene terephthalate and sago starch with the addition of as much as 15 g of gelatin powder.

Key word : polyethylene terephthalate, sago starch, gelatin powder,
biodegradable, flexural strength and tensile strength