

ABSTRAK

PEMBUATAN PLASTIK *BIODEGRADABLE* DARI PATI BIJI ALPUKAT (*AMERICANA PERSEA*) DENGAN PENAMBAHAN *LOW DENSITY POLYETHYLENE (LDPE)*

Shafwah Fitriana, 2026, 44 Halaman, 7 Tabel, 12 Gambar, 4 Lampiran

Penelitian ini bertujuan untuk mengetahui pengaruh variasi rasio pati biji alpukat (*Persea americana*) dan *Low Density Polyethylene* (LDPE) serta konsentrasi gliserol terhadap karakteristik plastik biodegradable. Plastik biodegradable dibuat dengan variasi rasio pati biji alpukat : LDPE sebesar 2:0, 0,25:2, 0,50:2, 0,75:2, dan 1:2, serta penambahan gliserol sebanyak 0,5 mL dan 1 mL. Produk yang dihasilkan kemudian diuji sifat mekaniknya melalui uji kuat tarik, elongasi, biodegradasi, dan daya serap air. Hasil penelitian menunjukkan bahwa nilai kuat tarik berkisar antara 0,9537–2,4525 MPa, elongasi 4–25%, biodegradasi 51,9–68,6%, dan daya serap air 54,6–68,6%. Penambahan gliserol meningkatkan fleksibilitas dan kemampuan biodegradasi plastik, sedangkan variasi rasio pati biji alpukat dan LDPE berpengaruh terhadap sifat mekanik dan fisik plastik yang dihasilkan. Sebagian besar sampel telah memenuhi standar biodegradasi, namun belum memenuhi standar kuat tarik. Hasil penelitian menunjukkan bahwa pati biji alpukat berpotensi dimanfaatkan sebagai bahan baku alternatif dalam pembuatan plastik biodegradable yang lebih ramah lingkungan.

Kata kunci: plastik biodegradable, pati biji alpukat, LDPE, gliserol.

ABSTRACT

PREPARATION OF BIODEGRADABLE PLASTIC FROM AVOCADO SEED (PERSEA AMERICANA) STARCH WITH THE ADDITION OF LOW-DENSITY POLYETHYLENE (LDPE)

(Shafwah Fitriana, 2026, 44 Pages, 7 Tables, 12 Pictures, 4 Attachments)

This study aimed to determine the effect of varying the ratio of avocado seed (Persea americana) starch to Low-Density Polyethylene (LDPE) and glycerol concentration on the characteristics of biodegradable plastic. The biodegradable plastic was prepared using avocado seed starch:LDPE ratios of 2:0, 0.25:2, 0.50:2, 0.75:2, and 1:2, with glycerol additions of 0.5 mL and 1 mL. The resulting products were characterized through tensile strength, elongation, biodegradability, and water absorption tests. The results showed that the tensile strength ranged from 0.9537 to 2.4525 MPa, elongation from 4% to 25%, biodegradability from 51.9% to 68.6%, and water absorption from 54.6% to 68.6%. The addition of glycerol increased the flexibility and biodegradability of the plastic, while variations in the avocado seed starch-to-LDPE ratio affected the mechanical and physical properties of the resulting biodegradable plastic. Although most samples met the biodegradability standard, their tensile strength did not meet the required standard. Therefore, avocado seed starch has the potential to be used as an alternative raw material for producing more environmentally friendly biodegradable plastics.

Keywords: *biodegradable plastic, avocado seed starch, LDPE, glycerol.*