

ABSTRAK

PEMBUATAN PEWARNA TEKSTIL ALAMI DARI DAUN JAMBU BIJI (*PSIDIUM GUAJAVA L.*) DENGAN VARIASI KONSENTRASI ETANOL DAN WAKTU MASERASI

Oktavia Ramadani, 2026, 47 Halaman, 12 Tabel, 10 Gambar, 4 Lampiran

Industri tekstil hingga saat ini masih banyak menggunakan pewarna sintetis karena stabil dan mudah diperoleh, namun penggunaannya dapat menimbulkan dampak negatif terhadap lingkungan dan kesehatan. Oleh karena itu, pewarna alami mulai dikembangkan sebagai alternatif yang lebih ramah lingkungan. Daun jambu biji (*Psidium guajava L.*) diketahui mengandung pigmen alami berupa tanin dan flavonoid yang berpotensi dimanfaatkan sebagai pewarna tekstil. Penelitian ini bertujuan untuk menganalisis pengaruh variasi waktu maserasi (24, 48, dan 72 jam) serta konsentrasi pelarut etanol (60%, 70%, dan 80%) terhadap hasil ekstraksi pewarna alami. Parameter yang dianalisis meliputi rendemen ekstrak, pH, kualitatif dan kuantitatif tanin menggunakan spektrofotometri Uv-Vis, serta diuji ketahanan luntur terhadap kain katun. Hasil penelitian menunjukkan bahwa variasi konsentrasi etanol dan waktu maserasi berpengaruh sangat nyata terhadap rendemen, kadar tanin, dan pH ekstrak daun jambu biji. Rendemen tertinggi diperoleh pada etanol 60%, sedangkan kadar tanin optimum diperoleh pada etanol 70% dengan waktu 72 jam. Nilai pH ekstrak cenderung menurun dengan bertambahnya waktu maserasi. Ketahanan luntur terbaik diperoleh pada etanol 70% dengan waktu maserasi 72 jam, yaitu sebesar 4–5 (baik) berdasarkan SNI ISO 105-A03:2010.

Kata kunci: Pewarna alami, *Psidium guajava L.*, Etanol, Maserasi

ABSTRACT

PRODUCTION OF NATURAL TEXTILE DYES FROM GUAVA LEAVES (*PSIDIUM GUAJAVA L.*) WITH VARIATIONS IN ETHANOL CONCENTRATION AND MACERATION TIME

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*The textile industry still uses synthetic dyes because they are stable and readily available, but their use can have negative impacts on the environment and health. Therefore, natural dyes are being developed as a more environmentally friendly alternative. Guava leaves (*Psidium guajava L.*) are known to contain natural pigments in the form of tannins and flavonoids that have the potential to be used as textile dyes. This study aims to analyze the effect of variations in maceration time (24, 48, and 72 hours) and ethanol solvent concentration (60%, 70%, and 80%) on the extraction results of natural dyes. The parameters analyzed include extract yield, pH, qualitative and quantitative tannins using UV-Vis spectrophotometry, and tested for fastness to cotton fabric. The results showed that variations in ethanol concentration and maceration time had a very significant effect on the yield, tannin content, and pH of guava leaf extract. The highest yield was obtained at 60% ethanol, while the optimum tannin content was obtained at 70% ethanol with a time of 72 hours. The pH value of the extract tended to decrease with increasing maceration time. The best fastness was obtained at 70% ethanol with a maceration time of 72 hours, which was 4–5 (good) based on SNI ISO 105-A03:2010.*

Keywords: Natural dyes, *Psidium guajava L.*, Ethanol, Maceration.