

KETAHANAN WARNA, KUALITAS FISIK, DAN KANDUNGAN MINYAK
TERHADAP PERBEDAAN *MORDANTING AGENT*
KULIT DOMBA *ECOPRINT*

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INTISARI

Penelitian ini bertujuan untuk menganalisis pengaruh ragam perlakuan *mordanting* dalam metode *ecoprinting* kulit domba samak krom serta menentukan jenis *mordanting agent* dengan pengaruh terbaik berdasarkan kualitas fisik uji ketahanan warna terhadap penggosokan, uji kekuatan sobek, kekuatan tarik, kemuluran, dan uji kadar minyak. Kulit domba samak krom digunakan sebagai bahan utama, dengan tiga perlakuan *ecoprint* yang berbeda: P0 (tanpa *mordanting*), P1 (mordan tawas 3%), dan P2 (mordan kapur 3%). Setiap perlakuan diulang sebanyak tiga kali untuk validitas data. Proses *ecoprinting* terdiri dari tiga tahap, yaitu *pre mordanting*, *mordanting*, dan *post mordanting*. Hasil penelitian dianalisis dengan uji *One Way Anova*, dan jika hasilnya berbeda nyata, maka dilanjutkan dengan uji *Duncan's New Multiple Range Test* (DMRT). Hasil penelitian menunjukkan bahwa perlakuan tanpa *mordanting* memberikan hasil terbaik dalam ketahanan warna terhadap penggosokan baik basah maupun kering. Untuk kualitas fisik, *mordanting* tawas menghasilkan kekuatan tarik ($887,547 \pm 24,353$ N/cm²) dan kemuluran ($66,84 \pm 4,18\%$) tertinggi, tetapi menurunkan kekuatan sobek ($182,234 \pm 12,833$ N/cm) dibandingkan tanpa *mordanting* ($336,463 \pm 31,690$ N/cm). Sementara itu, *mordanting* kapur menunjukkan performa terendah pada seluruh parameter kualitas fisik. Kesimpulan penelitian ini adalah *mordanting* tawas memberikan hasil terbaik dalam kekuatan tarik dan kemuluran, tetapi hasil kekuatan sobeknya menurun dan kandungan minyaknya meningkat melebihi standar. Perlakuan tanpa *mordanting* memberikan hasil yang seimbang, dengan performa terbaik dalam kekuatan sobek dan ketahanan warna terhadap penggosokan, serta memenuhi standar dalam kekuatan tarik, kemuluran, dan kandungan minyak. *Mordanting* kapur cenderung memberikan hasil terburuk pada sebagian besar parameter yang diuji.

Kata kunci : *ecoprinting*, *mordanting*, kulit domba samak krom, ketahanan warna, kualitas kulit

COLOR FASTNESS, PHYSICAL QUALITY, AND OIL CONTENT TO DIFFERENT MORDANTING AGENTS ECOPRINTED SHEEP LEATHER

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ABSTRACT

This study aims to analyze the effect of various mordanting treatments in the ecoprinting method of chrome-tanned sheep leather and determine the type of mordanting agent with the best effect based on the physical quality of color resistance test to rubbing, tear strength test, tensile strength, extensibility, and oil content test. Chrome-tanned sheep leather was used as the main material, with three different ecoprint treatments: P0 (no mordanting), P1 (3% alum mordant), and P2 (3% lime mordant). Each treatment was repeated three times for data validity. The ecoprinting process consists of three stages, namely pre mordanting, mordanting, and post mordanting. The results were analyzed with One Way Anova test, and if the results were significantly different, then continued with Duncan's New Multiple Range Test (DMRT). The results showed that the treatment without mordanting gave the best results in color resistance to scrubbing both wet and dry. For physical quality, alum mordanting produced the highest tensile strength ($887,547 \pm 24,353 \text{ N/cm}^2$) and pliability ($66,84 \pm 4.18\%$), but decreased tear strength ($182,234 \pm 12,833 \text{ N/cm}$) compared to no mordanting ($336,463 \pm 31,690 \text{ N/cm}$). Meanwhile, lime mordanting showed the lowest performance in all physical quality parameters. It was concluded that alum mordanting gave the best results in tensile strength and pliability, but decreased tear strength and increased oil content beyond the standard. The no-mordant treatment gave balanced results, with the best performance in tear strength and color resistance to rubbing, and met the standards in tensile strength, drapability and oil content. Lime mordanting tended to give the worst results in most of the parameters tested.

Keywords: ecoprinting, mordanting, chrome-tanned sheep leather, color fastness, leather quality