

**PENGARUH PERBEDAAN KONSENTRASI ENZIM ALKALIN  
PROTEASE DARI *Bacillus cereus* TD5B PADA PROSES BUANG  
RAMBUT KULIT DOMBA LOKAL YANG DISAMAK KROM**

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**INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh perbedaan konsentrasi enzim alkalin protease dari *Bacillus cereus* TD5B yang digunakan pada proses buang rambut kulit domba lokal terhadap histologi dan kualitas kulit samak. Data yang dihasilkan meliputi aktivitas proteolitik dengan zona bening, aktivitas protease, histologis kulit yang telah dibuang rambut menggunakan enzim protease dengan konsentrasi enzim sebesar (P1) 1%, (P2) 1,5%, dan (P3) 2%, kontrol (P0) kapur dan Na<sub>2</sub>S, kualitas fisik kulit samak yang meliputi kekuatan tarik, kemuluran dan suhu kerut. Data aktivitas proteolitik dengan zona bening dan uji histologis dianalisis secara deskriptif. Data aktivitas protease dan kualitas fisik kulit samak dianalisis menggunakan Rancangan Acak Lengkap (RAL) Pola Searah dan uji perbedaan rerata menggunakan *Duncan's New Multiple Ranges Test* (DMRT). Hasil penelitian menunjukkan bahwa konsentrasi enzim 2% memiliki aktivitas enzim paling tinggi (144,75 U/ml/menit). Nilai kekuatan tarik paling tinggi pada konsentrasi 1% (350,26 kg/cm<sup>2</sup>) dan nilai kemuluran paling tinggi pada konsentrasi enzim 2% (34,92%). Suhu kerut dari semua perlakuan memiliki hasil yang sama (90°C). Kesimpulan dari penelitian ini adalah penggunaan enzim protease dengan konsentrasi 2% mampu menghilangkan rambut secara optimal dan menghasilkan kulit samak yang paling baik.

Kata kunci: buang rambut, enzim protease, penyamakan, *Bacillus cereus* TD5B, Kualitas fisik kulit.

## THE EFFECT OF DIFFERENT CONCENTRATIONS OF ALKALINE PROTEASE ENZYME FROM *Bacillus cereus* TD5B AS DEHIRING AGENT ON SHEEP LEATHER

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### ABSTRACT

This study aims to determine the effect of different concentrations of the alkaline protease enzyme from *Bacillus cereus* TD5B which is used in the process of dehairing sheep skin hair on the histology and quality of leather. The data generated include proteolytic activity, protease activity, histological skin that has been removed hair using protease enzymes with enzyme concentrations of (P1) 1%, (P2) 1.5%, and (P3) 2%, control (P0) (lime and Na<sub>2</sub>S), physical qualities of leather which include tensile strength, elongation and shrinkage temperature. Data on proteolytic activity with clear zones and histological tests were analyzed descriptively. Data on protease activity and physical quality of tanned skin were analyzed using the Completely Randomized Design (CRD) Unidirectional Pattern and the average difference test using Duncan's New Multiple Ranges Test (DMRT). The results showed that enzyme concentration of 2% had the highest enzyme activity (144.75 U/ml /min). The highest tensile strength value was at a concentration of 1% (350.26 kg/cm<sup>2</sup>) and the highest elongation value was at an enzyme concentration of 2% (34.92%). The shrinkage temperature of all treatments had the same result (90°C). The conclusion of this research is the use of a protease enzyme with a concentration of 2% can remove hair optimally and produce the best skin.

Keyword : dehairing, protease enzyme, tanning, *Bacillus cereus* TD5B, characteristic leather