



Piloting use of novel enzymes from local bacterial isolates for eco-friendly processing of hides and skins

Preamble

The leather industry in eastern Africa is yet to realize its full potential due to challenges associated with environmental health and product quality. Current general practice in processing hides and skins involves use of toxic chemicals. Lime and sodium sulphide, for example, contribute about 80% of the total pollution load in tannery waste, discharging both noxious gases and solid wastes such as hydrogen sulphide and lime itself. In turn, costs of leather production become exorbitant because not only are these chemicals expensive, but they also take a long time to dehair the skins, consume huge quantities of water and energy from lengthy processes, and may damage the skins. Although the use of enzymes in leather processing has been a topic of study worldwide, it is yet to be fully explored and embraced in eastern Africa. The novel enzymes being piloted in the project can recover good quality hair or wool, and preserves better leather strength characteristics.

Current general practice in processing hides and skins



Discharging both noxious gases and solid wastes



Processing hides and skins involves use of toxic chemicals.



Consume huge quantities of water and energy from lengthy processes, and may damage the skins.



Costs of leather production become exorbitant



Take a long time to dehair the skins



Lime and sodium sulphide contribute

80%

of the total pollution load in tannery waste

The technology

The enzyme is isolated from a local bacterial strain. The isolated enzyme is produced using submerged fermentation, then extracted, concentrated, and formulated for final testing at industrial scale

Local and regional benefits

The expected benefits include:



Replacement of use of toxic chemicals in leather processing with an environmentally friendly and effective enzyme as alternatives.



Additional income streams and value-added products, such as animal feed and garments, using skins, hides and fish scales as raw materials.

Project leader

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Project partners

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