

Training Title:
Cottage Tanning Skill Development



Module Endorsed by ALLPI Curriculum Review Committee



**Africa Leather and Leather Products
Institute (ALLPI)**

Training Coordinator

Mr. Harrison Mungai

Email : harrisonm@allpi.int

www.allpi.int

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Module title	Cottage Tanning Skill Development
Module code	
Total hours	10 days
Target group	
Description of module	<p>The module is aimed to provide skills development for participants such as artisans at the cottage and SME level to facilitate the transfer of technology in aspects of cottage tanning based techniques. The scope of coverage encompass Hides and Skins, Preservation, storage & transportation techniques, basics of chemistry and physics, tanning protocols and environmental and quality issues. This will assist in comprehending requisites needed towards conformity and compliance to national and global standards of their products. The target is to take cognizance of existing techniques already in application and in tandem propagate new knowledge to the module participants through an up-gradation exercise through this module. Efficient and effective use of leather processing material and instrumentation will be fundamental in the instructional material for the module. The course will provide the necessary skills needed to build on the competency of the participants.</p>
Learning outcomes	<p>At the end of this learning module, the participant must be able to demonstrate a basic knowledge, skill, understanding and attitude of:</p> <ul style="list-style-type: none"> • Comprehending and identification of the technology in aspects of cottage tanning based techniques; • Basic evaluation of hides and skins and their quality; • Recognizing, explaining and performing appropriate tanning of hides and skins; • Demonstrating commitment to the 3R's (Reuse, reduction and recycle); • Basic record keeping; • Capability towards knowledge evolution towards productive and competitive production of products; and • Adopt to requisite tanning technology relevant to cottage and SMEs level. • Explaining requisites needed towards conformity and compliance to national and global standards;
Content	<p>i. Introduction to Hides and Skins Anatomical, Physiological and Microbiological features</p> <p>Various types of hides and skins, structure and composition of hides and skins, Animal disease affecting hides, skins and leather quality, Effect of pH and temperature on bacterial growth and survival. Phase in growth of bacteria. Moulds and yeast; factors affecting the survival and growth of molds. Effects of micro-organisms on leather Production.</p> <p>ii. Preservation, storage & transportation</p> <p>An insight to the curing process and how the material are handled and stored are discussed. This will enlighten the course participants and provide requisite skills of managing the raw material appropriately.</p>

	<p>iii. Basic Chemistry</p> <p>Acids and base Buffer solutions; indicators and neutralization; hardness of Water and its effect on leather manufacturing processes, dyestuffs; basic and Acid dyes, percentages and recipe calculations, basic color mixing.</p> <p>iv. Basic Physics</p> <p>Measurement of volume and capacity of drums, paddles, tanks and pits, Conversion of weight/volume Conversion of weight/volume, its accuracy as a measure of concentration of solutions.</p> <p>v. Tanning Protocols and Tools</p> <p>Introduction to tannery machines, tools and equipment, sorting, selection and grading of raw hides and skins, Pre- tanning operations: soaking, liming, de-liming, bating, pickling, tanning and basicification. Post tanning operations: Sammying, splitting, shaving, weighing, re-tanning, dyeing fat liquoring, sam/set, various methods of leather drying, conditioning, staking, buffing, de-dusting and impregnation.</p> <p>Different methods of leather finishing and their applications, embossing/plating, measuring, selection and grading of leathers and warehousing, production of different type of leathers and their end uses; and keeping of appropriate records.</p> <p>vi. Types of Tannages</p> <p>Chrome, Vegetable, Aluminum, zirconium Aldehyde, Combination, Resin and Oil, preparation of Vegetable tannins.</p> <p>vii. Environmental management</p> <p>Aspects such as atmospheric, aquatic and terrestrial impacts related to the tanning industry are explored to assist the enterprises manage and mitigate against contamination and pollution.</p> <p>viii. Quality Assurance</p> <p>The module is envisaged to impart skills on Operation system management and production of quality leather/leather products in order to attain higher customer satisfaction.</p> <p>ix. Standards and Compliance</p> <p>This module will impart skills to the participants on the importance of standards and how they are complied with. In particular, the dynamics of the main chemical ingredients used in the production of leather/leather products will be explored to reflect on the client satisfaction, product presentation and market entry.</p>
Teaching strategy	<ul style="list-style-type: none"> • Class room teaching • Field trips to industry

	<ul style="list-style-type: none"> • Assignments • Group work • Practical sessions • Visit industries
Assessment criteria	<ul style="list-style-type: none"> • Individual Assignment • Group assignment and presentation • Practical work
Assessment strategy	<ul style="list-style-type: none"> • Continuous assessment basis: • Class attendance • Written exams • Reports of assignments • Practical demonstration
Role of Trainer and Trainees	<ul style="list-style-type: none"> • Trainer should organize classes and field sessions, conduct lectures, give guidance to do assignments, motivate trainees to actively participate in class and field sessions. • Trainees should attend classes and field sessions, actively participate in class and field sessions and submit duly completed reports of assignments.
Teaching support and inputs	<ul style="list-style-type: none"> • Lecture materials (handouts, Slides, Reference books) • LCDs and laptops, photocopier and photocopy papers, flip charts
Reading materials	<ul style="list-style-type: none"> • http://www.nene.ac.uk; Common Fund for Commodities, Amsterdam • The Netherlands http://www.common-fund.org; Food and Agriculture Organization of the United Nations, Rome-Italy, http://www.fao.org; Leather Biz, News portal to complement World Leather magazine, http://www.leatherbiz.com; International Council of Hides, Skins and Leather Traders Associations, UK, http://www.ichslta.org • International Council of Tanners, Leather Trade House, UK; sec@tannerscouncil.org; International Organization for Standardization Switzerland, http://www.iso.ch; International Union of Leather Technologists • and Chemists Societies, UK., http://www.iultcs.org; United Nations Conference on Trade and Development, http://www.unctad.org; United Nations Environment Programme, http://www.unep.org; United Nations Industrial Development Organization, Vienna, Austria, http://www.unido.org; prototype materials, tools, and guidelines