



1st Workshop on Eco-Tanning Processes in Kenya and the East African Region

19-20th July, 2023 – Best Western Plus Meridian Hotel – Nairobi-Kenya

Sustainable Eco-preservation techniques for green hides and skins

Dr. Richard Oruko Ongon'g (PhD)

Cert (Leather tech), Dip (Ensc), Bsc (Ensc), Msc (Ensc-Mgt of Tannery solid wastes) PhD (Ensc-Bioremediation of tannery Chromium effluent)

Assistant Director of Leather development

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OPERATION LINDA NGOZI TUTENGENEZE KIATU MILLIONI KUMI NA TANO ZA WATOTO WA SHULE

Preservation techniques

- Fresh green hides and skins
- Ground drying- (not recommended)
- Air dried hides and skins
- Chilled or Frozen hides and skins
- Less sodium chloride
- Inorganic preservative
- Organic preservative
- Irradiation
- Biocides
- Wet and dry salting

Fresh green hides and skins

Advantages

No chemical is used

Less water used

Disadvantages

Distance location/source of raw hides and skins to tannery in the country.

Unpredicted onset of putrefaction.

Air dried hides and skins

Advantages

- Use air for preservation

Disadvantages

Consume more water in soaking, thus large quantity of effluent discharge.

Becoming less popular with tanners

Large area required to construct banda

More labour required

Chilled or Frozen/irradiation of hides and skins

Advantages

Good for hides sold to west Africa for food

Less water and no chemical used

No total dissolved solids

Disadvantages

High cost of electricity and installation capacity at initial stages.

Organic Preservative

Advantages

Plant based curing agents
(powder, extract, paste)

e.g –*Azadirachta indica*,
Tamarindus indica, *Moringa*
oleifera, *Citrus sinensis peel*, *Cassia*
fistula, *Accasia bussei/albida etc*

Biodegradable waste products

Disadvantages

Less applied in the industry

Biocides

Advantages

Use microbes

Disadvantages

High cost of the microbes

Wet and dry salting

Advantages

Salt inhibit bacterial growth

Easy to wet back -thus more popular with tanners



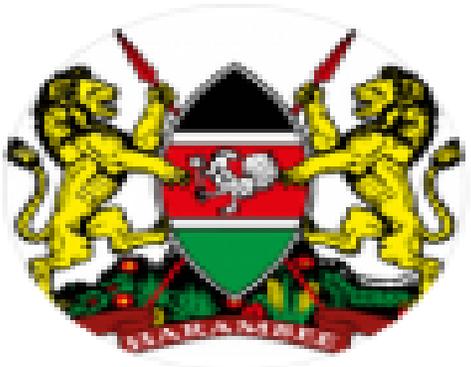
Disadvantages

High cost of salt

Disposal challenges and degradation of ecosystems and infrastructures



**THANK YOU
FOR LISTENING**



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Conventional tanning processes for leather production

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Conventional Tanning Processes

Storage

Soaking

Liming/unhairing

Fleshing

Lime splitting

Deliming

Bating

Pickling

Depickling

Tanning

Neutralising

Withering

Sorting/splitting

Shaving

Dyeing

Fatliquoring

Retanning

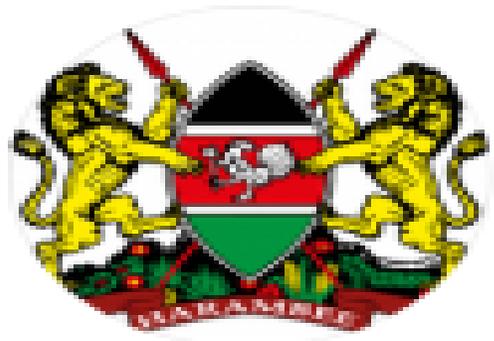
Drying

Finishing

Softening

Final check on finished leather

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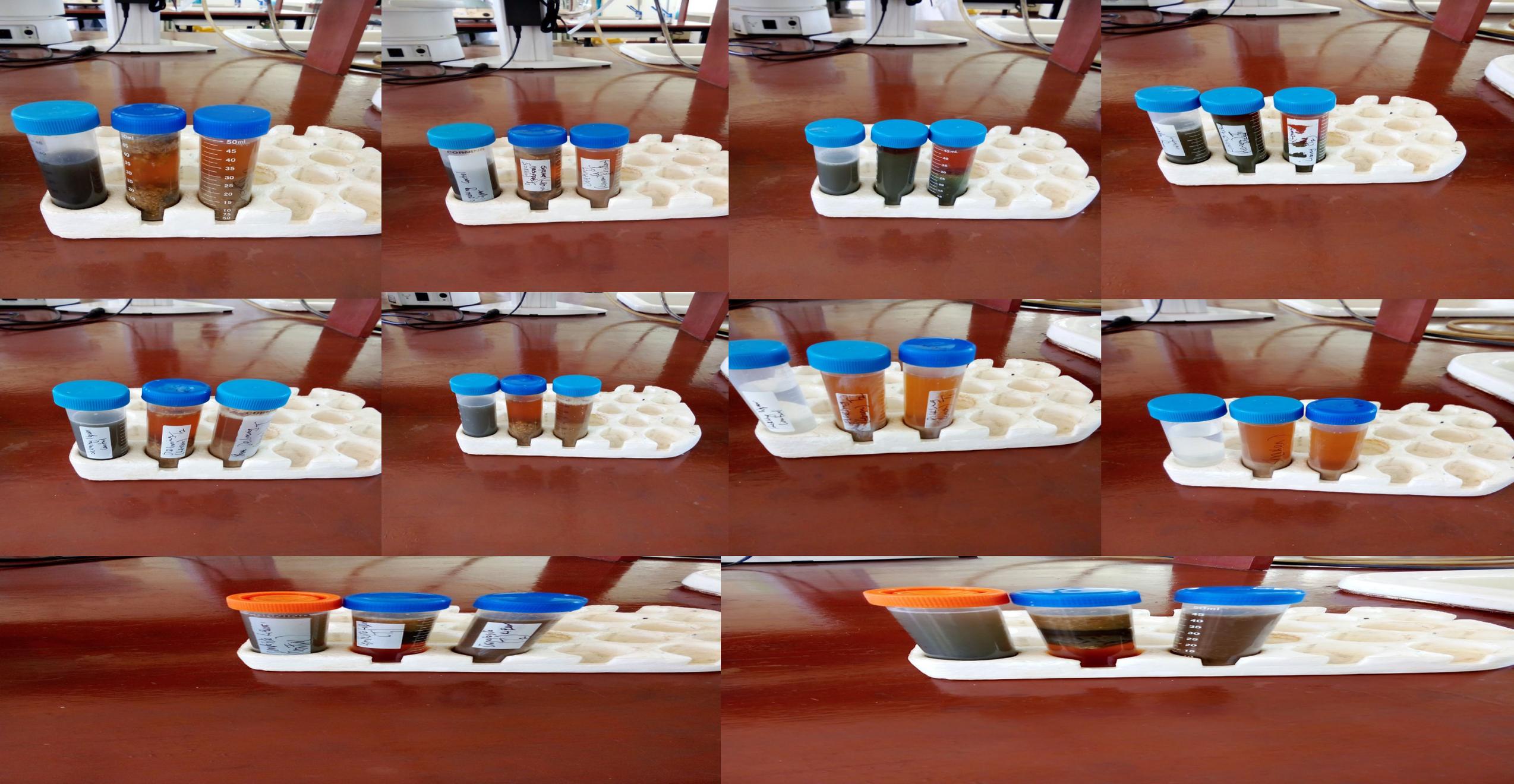
Effectiveness of Citrus fruit wastes in adsorption of tannery effluents

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