

A Study of Manufacturing Edible Beef Skin (Kanda. K. Ponmo)

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Introduction

- History of Ponmo
- ‘Ponmo’, ‘Kpomo’, ‘Kanda’ in South west Nigeria and ‘Welle’ in west African countries like Ghana.
- Loved by all regardless of societal class level because of its unique taste and texture.
- White Ponmo & Brown Ponmo.
 - ❖ White Ponmo – Removing hair and Boiling in water.
 - ❖ Brown Ponmo – By singeing (Used tyres, Petrol, Kerosene)
- ‘Nigeria eats its shoe leather’- BBC Nov 2014.
- ‘Bring Back Ponmo’ in Nigeria.
- Why Beef hides?



Woman at work (A pre-cooked cow skin seller)



Manufacturing Methods



**TRADE
SECRETS**

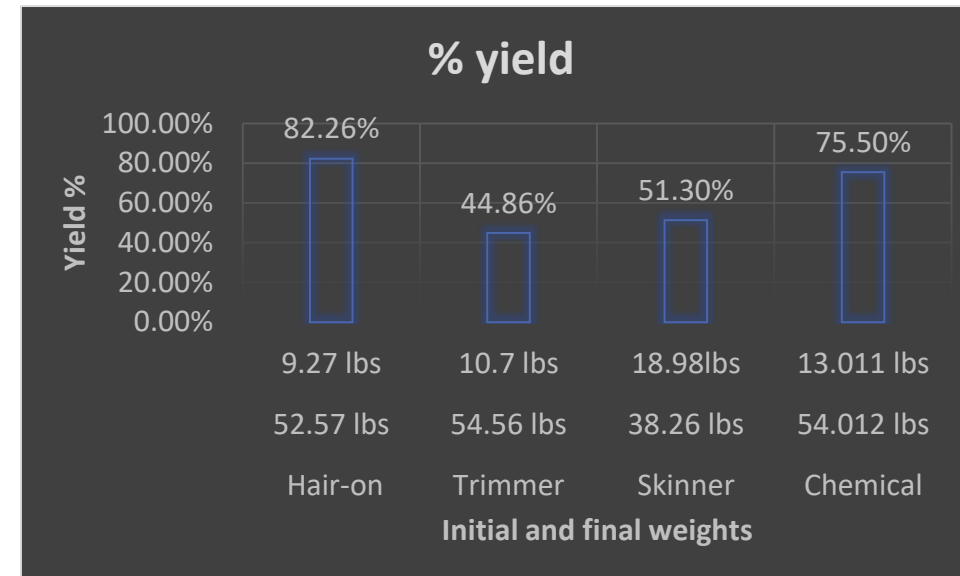
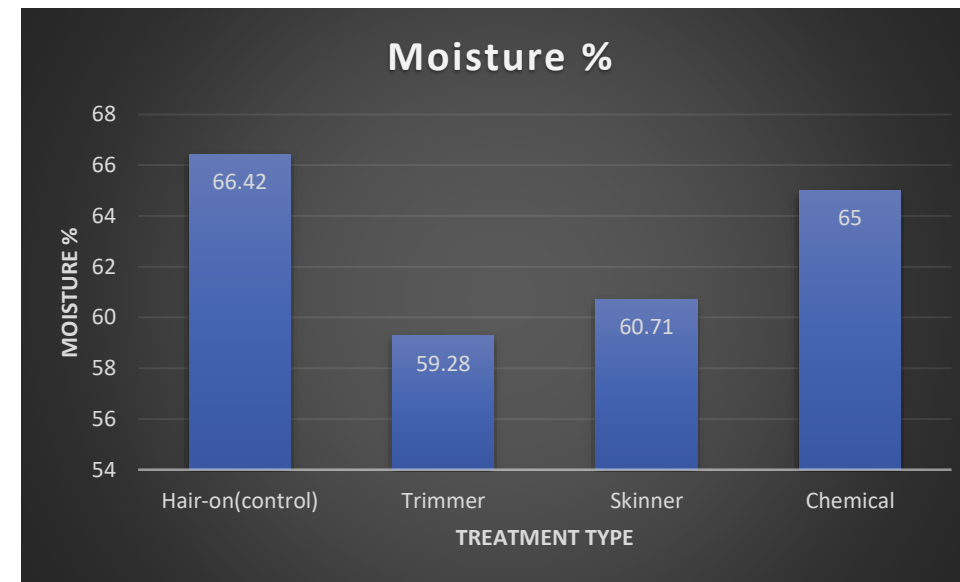
- **USDA APPROVED**
- **Objective of the study**
- **Methods**
 - Hair-on
 - Trimmer
 - Skinner
 - Chemical dehairing
- **Quality parameters**
 - Color, texture, Moisture, Hedonic scale sensory analysis.



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Moisture

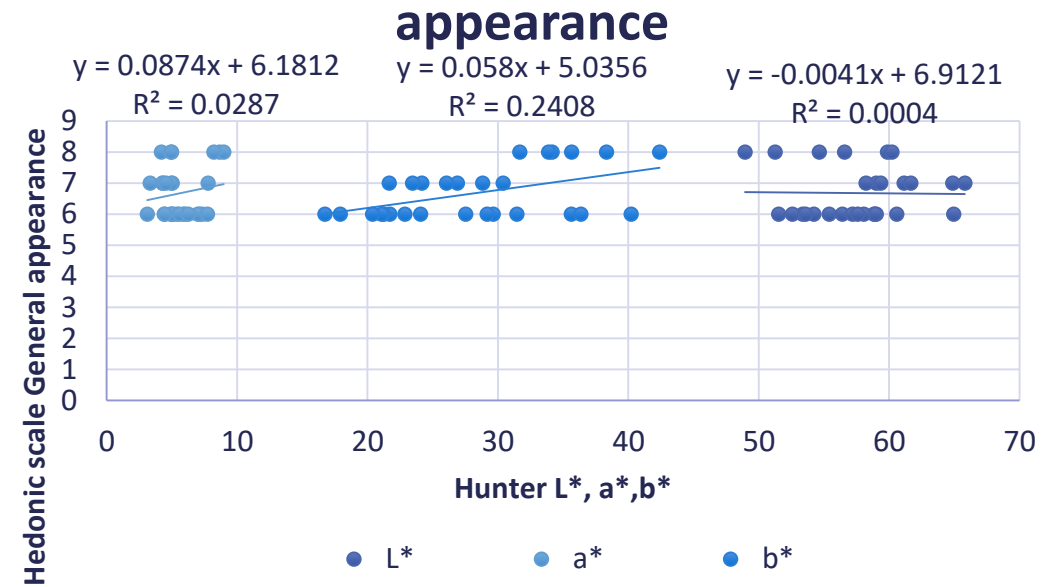
- Moisture % was analyzed using A gradient oven and by following AOAC OFFICIAL METHODS 2008.6 (MOISTURE AND FATS IN MEATS).
- High moisture content in Hair-On samples.
- Higher the moisture Higher the Yield%.
- Significant positive relation between Hair-on and chemical dehairing treatments. $P < 0.05$, $r = 0.07$.
- No relation between hair-on and Skinner, Trimmer treatments.



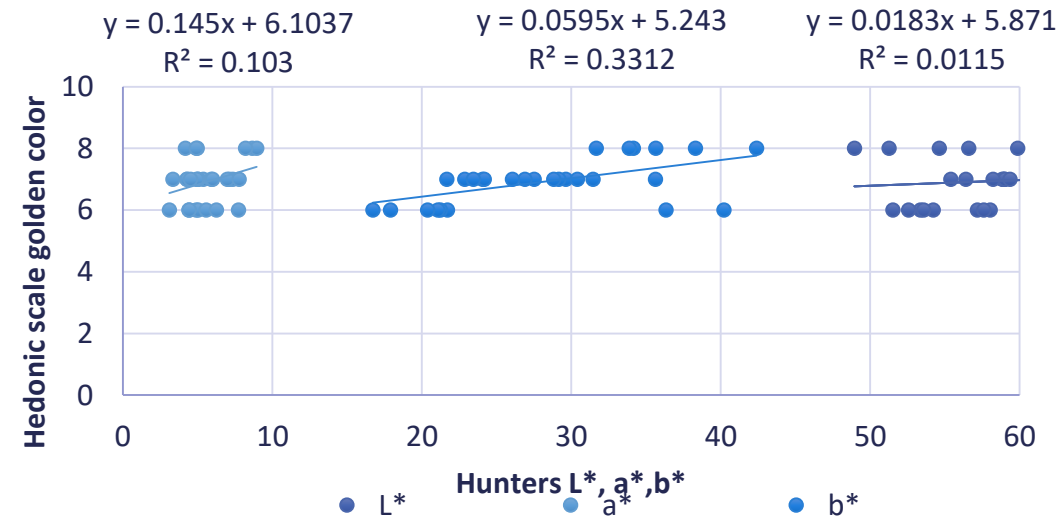
Color

- Hedonic scale 1 to 9.
- General appearance and Golden color.
- L^* (lightness or darkness), a^* (red & green, b^* (blue and yellow) Hunter Colorimeter.
- The Hunter L^* , and general appearance values are different ($P < 0.05$). But no correlation existed between them.
- L^* , a^* are significantly different to Golden color values. No positive co-relation between them.
- Chemical dehairing samples got a high score of 8 out of 9 in both cases.

Hunter L^* , a^* , b^* vs General appearance

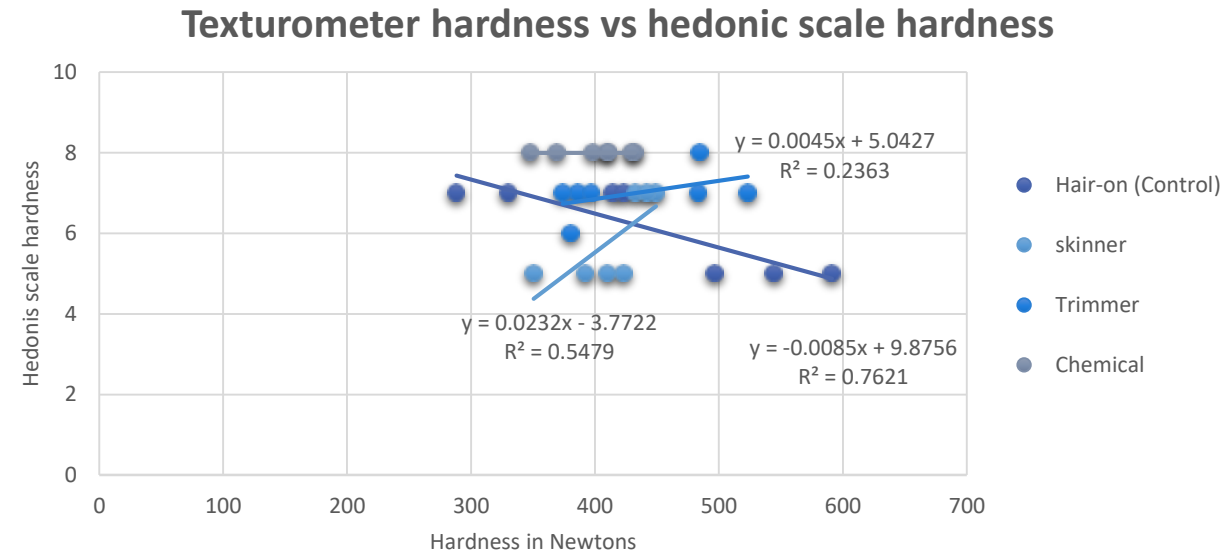


Hunter's L^* , a^* , b^* vs Golden color



Texture

- A Low- cost Texturometer is used to measure hardness.
- 0 to 9 hedonic scale.
- How hard is the sample?
- Treatment 4 got a score of 8 for all samples.
- There is no relation existed between the Texturometer vs Hedonic scale hardness.



Time vs Temperature

- Hair-on treatment took high time to cook the sample at 219⁰F.(Average of 4.5 minutes)
- Trimmer and Skinner treatment took less time to cook the sample at 181⁰F and 180⁰F. (Average of 1.5 minutes)
- Chemical dehairing treatment took an average of 2.5 minutes to cook the sample at 205⁰F.

