

Value-addition to Kenkey, an indigenous African fermented food, targeting the international market

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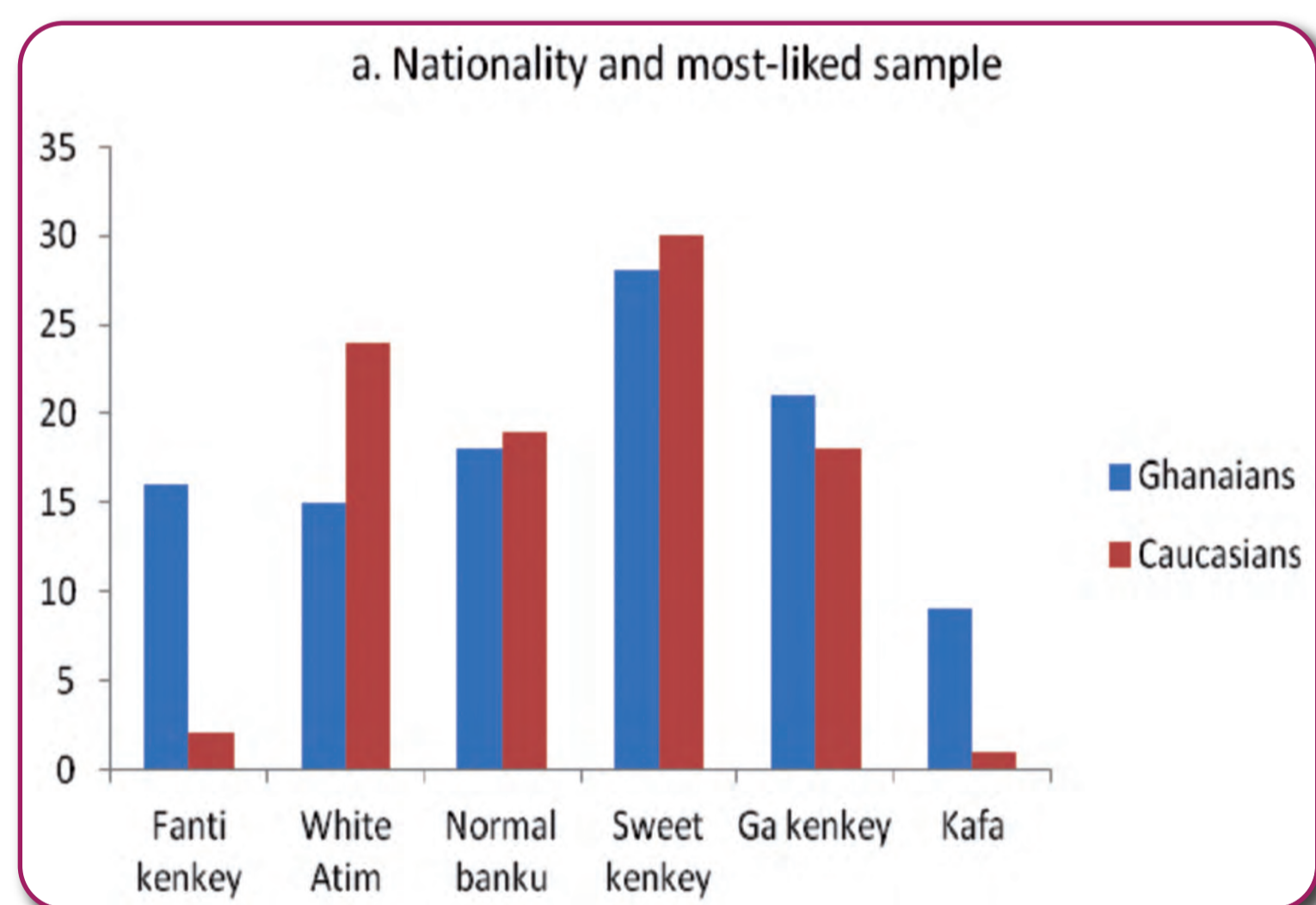
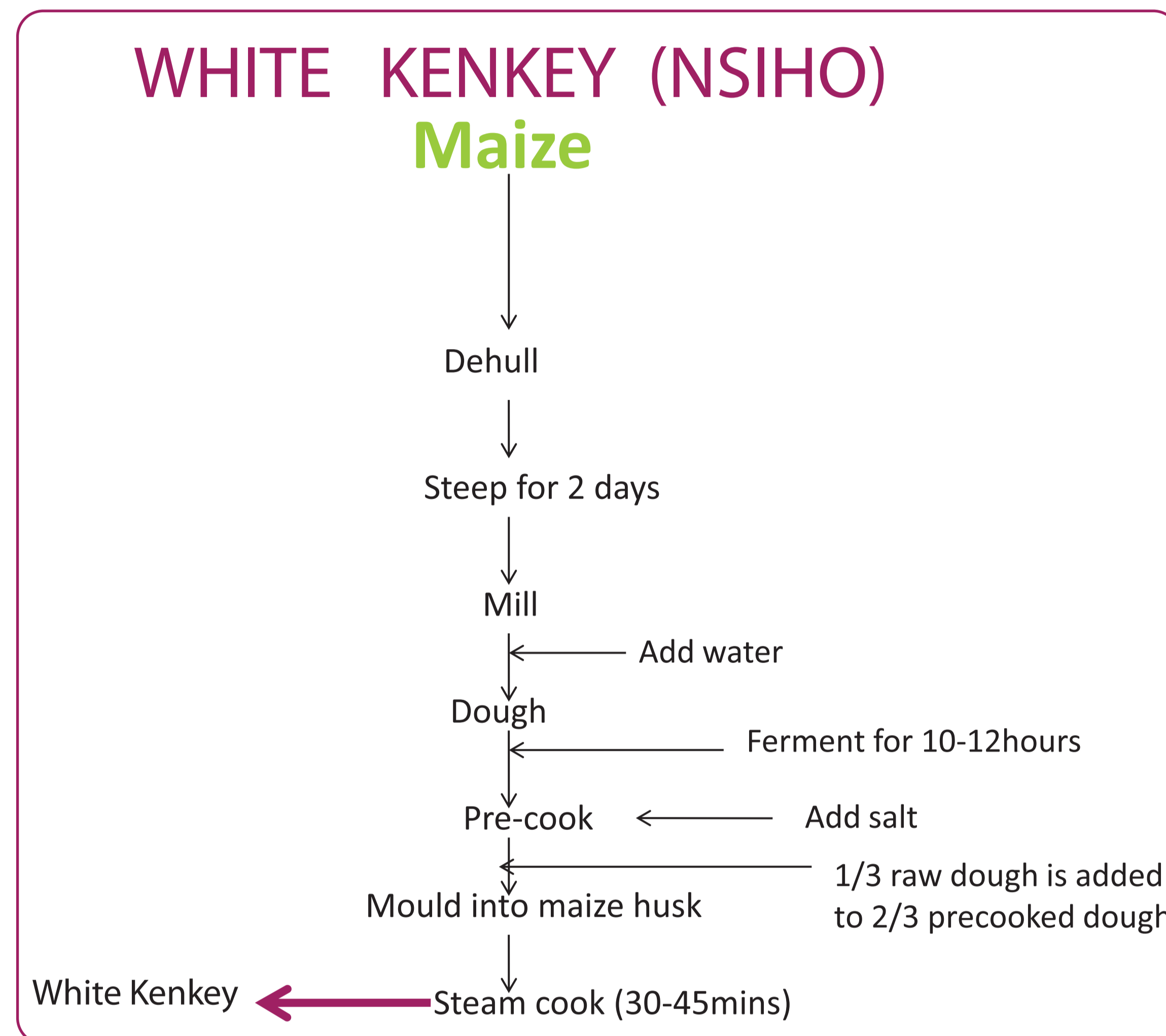
KENKEY is a sour dumpling made from fermented maizedough which is wrapped in leaves and cooked. The different types of kenkey include Ga-kenkey, Fanti-Kenkey, Nsiho (white kenkey), Sweet kenkey, Fomfom. Other products from fermented maize dough include Banku and Kafa. Production and consumption of kenkey is limited to Ghana in West Africa. The present work is being carried out to re-engineer kenkey for the international market.

Methods

- (i) Literature review (ii) Survey (iii) Review of regulatory opportunities (iv) Value chain analysis (v) Physico-chemical analysis: Proximate composition, pH, elemental analysis, mycotoxins, colour, texture, (vi) Microbiological analysis: Lactic acid bacteria, yeasts and moulds, *Enterobacteriaceae*, *E. coli*, *Staph. aureus*, *Salmonella typhymorium*, *Bacillus cereus*, *Clostridium perfringens*, *Listeria monocytogenes* (vii) Sensory evaluation; qualitative descriptive analysis (viii) Consumer testing: 110 Ghanaians and 90 Caucasians (ix) Re-engineering: Development of starter culture, optimization of fermentation parameters, re-shaping of product, improved packaging.

Results and discussion

Sensory attributes of kenkey preferred by Caucasians: Bland, mild or sweet taste; less sour product; soft texture; whitish colour. White kenkey made from dehulled maize selected for re-engineering



LAB isolates from white kenkey	Indicator strains			
	<i>E. coli</i>	<i>S. aureus</i>	<i>S. typhi</i>	<i>V. cholera</i>
<i>L. fermentum</i> 1	++	+++	++	+++
<i>L. fermentum</i> 2	+	++	++	++
<i>L. brevis</i> 1	-	+	-	++
<i>L. brevis</i> 2	-	-	-	++
<i>L. plantarum</i>	+	++	+	+
<i>P. acidilactici</i>	-	+	+	-



- Right: PCA bi-plot showing relationship between different fermented maize products and their sensory attributes
- Below: Surface plots showing pH or titratable acidity against steeping time and dough fermentation time

