



AFTER

CONGRÈS

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Sensory Evaluation and Consumer Acceptability of an African Fish Based Flavouring Agent and Taste Enhancer

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Lanhouin samples and cooked rice containing Lanhouin



Sensory evaluation

Lanhouin is a traditional flavouring agent and taste enhancer (FATE) mostly used in some main dishes such as vegetable, slimy vegetable, and tomato sauces, fried rice. Lanhouin was produced by natural and largely uncontrolled fermentation of fish commonly cassava fish (*Pseudotolithus senegalensis*) and King fish/Spanish mackerel (*Scomberomorus tritor*).

Objectives

- To explore the sensory profile and the consumer acceptance of Lanhouin
- To establish the relationships between the sensory attributes and consumer acceptance in order to understand the factors that influence acceptability of Lanhouin.

Methodology

Two types of fish Cassava fish (*Pseudotolithus senegalensis*) (C) and Kingfish /Spanish mackerel (*Scomberomorus tritor*) (K) were processed into Lanhouin by well skilled processors using the three variants of technologies of fermentation described by Kindossi et al. (2012), Fermentation in aerobic conditions (FA), Fermentation in semi-aerobic conditions (FSA), Fermentation in anaerobic conditions (FAN). The Lanhouin samples were presented in two forms for sensory testing: raw Lanhouin and cooked rice containing Lanhouin.

Results

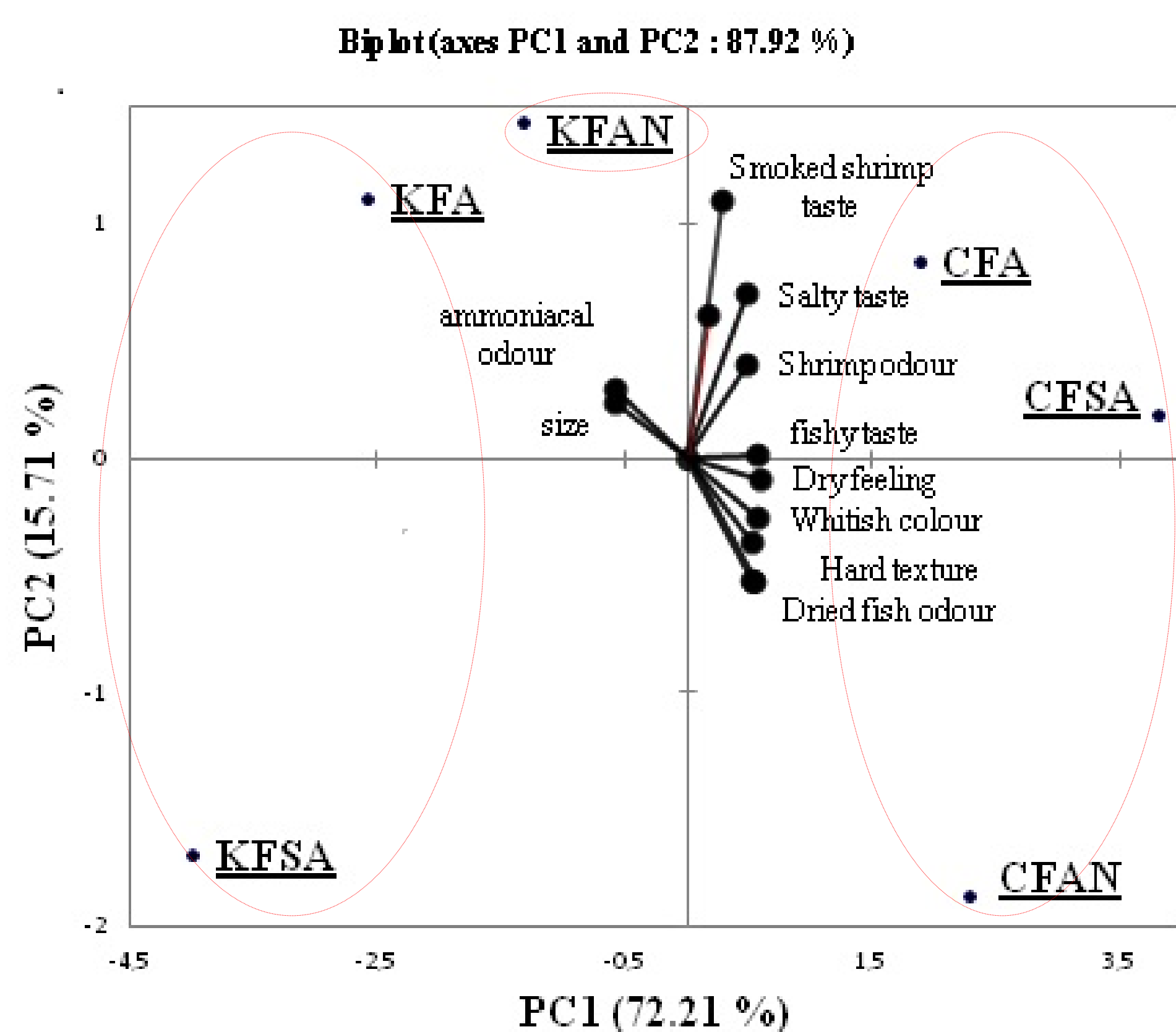


Figure 1. Principal components analysis (PCA) plot of sensory attributes of Lanhouin samples of different technologies.

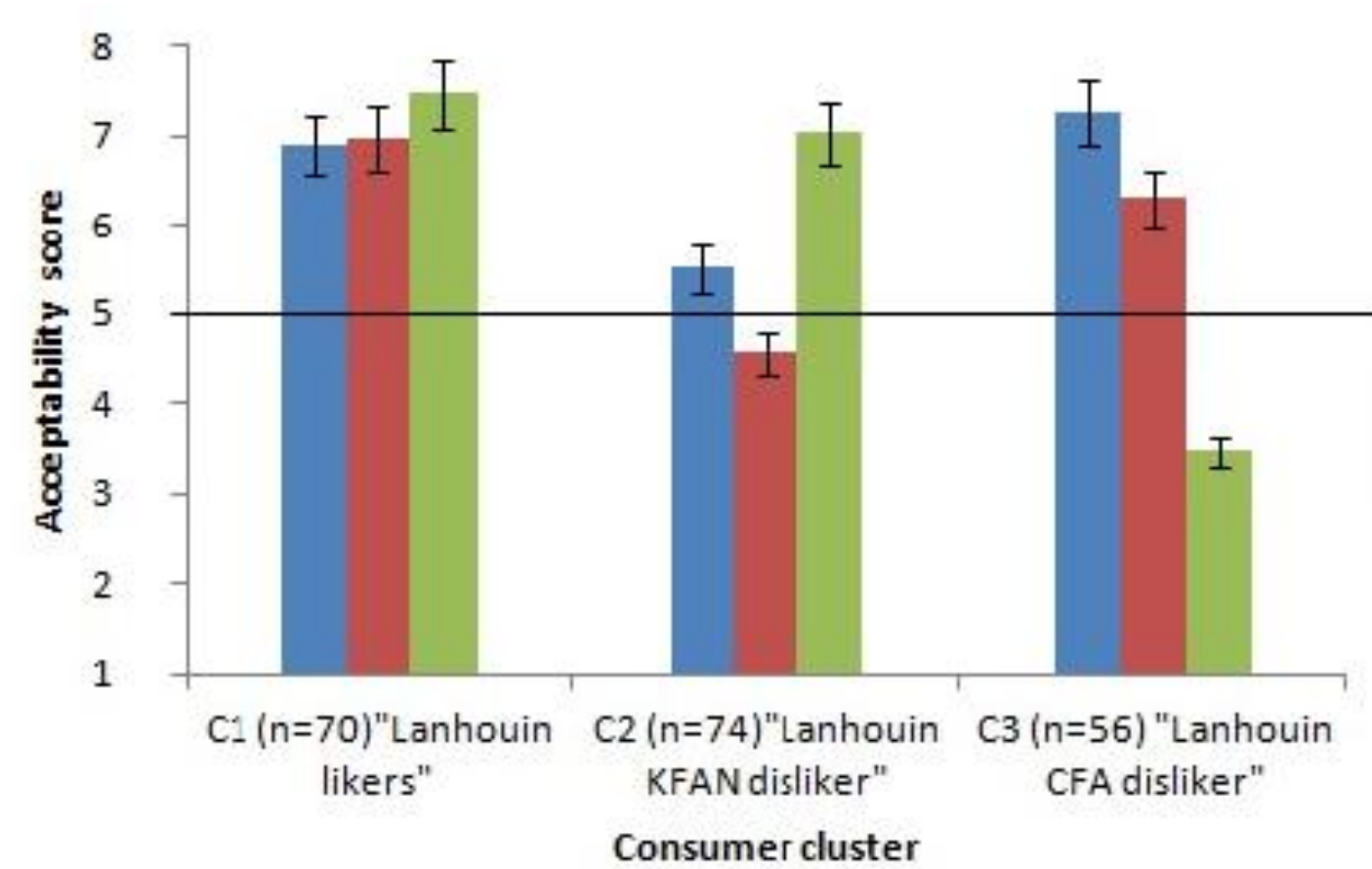


Figure 3. Mean consumer acceptance of Lanhouin cluster

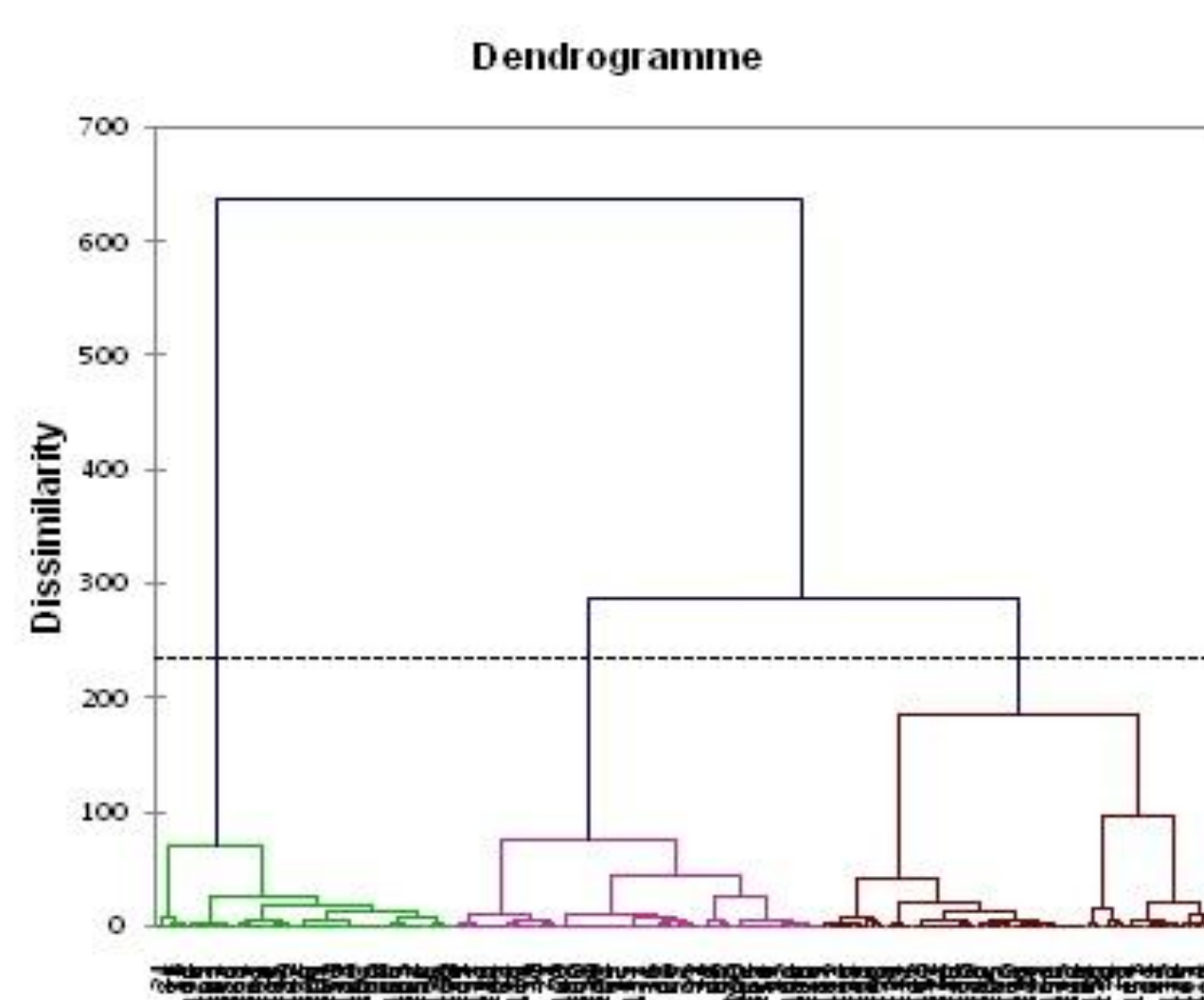


Figure 2. Hierarchical clusters analysis dendrogram for segmenting consumers into groups of similar perceptions of Lanhouin acceptability. Dashed line denotes level of dissimilarity along which the three segments were selected.

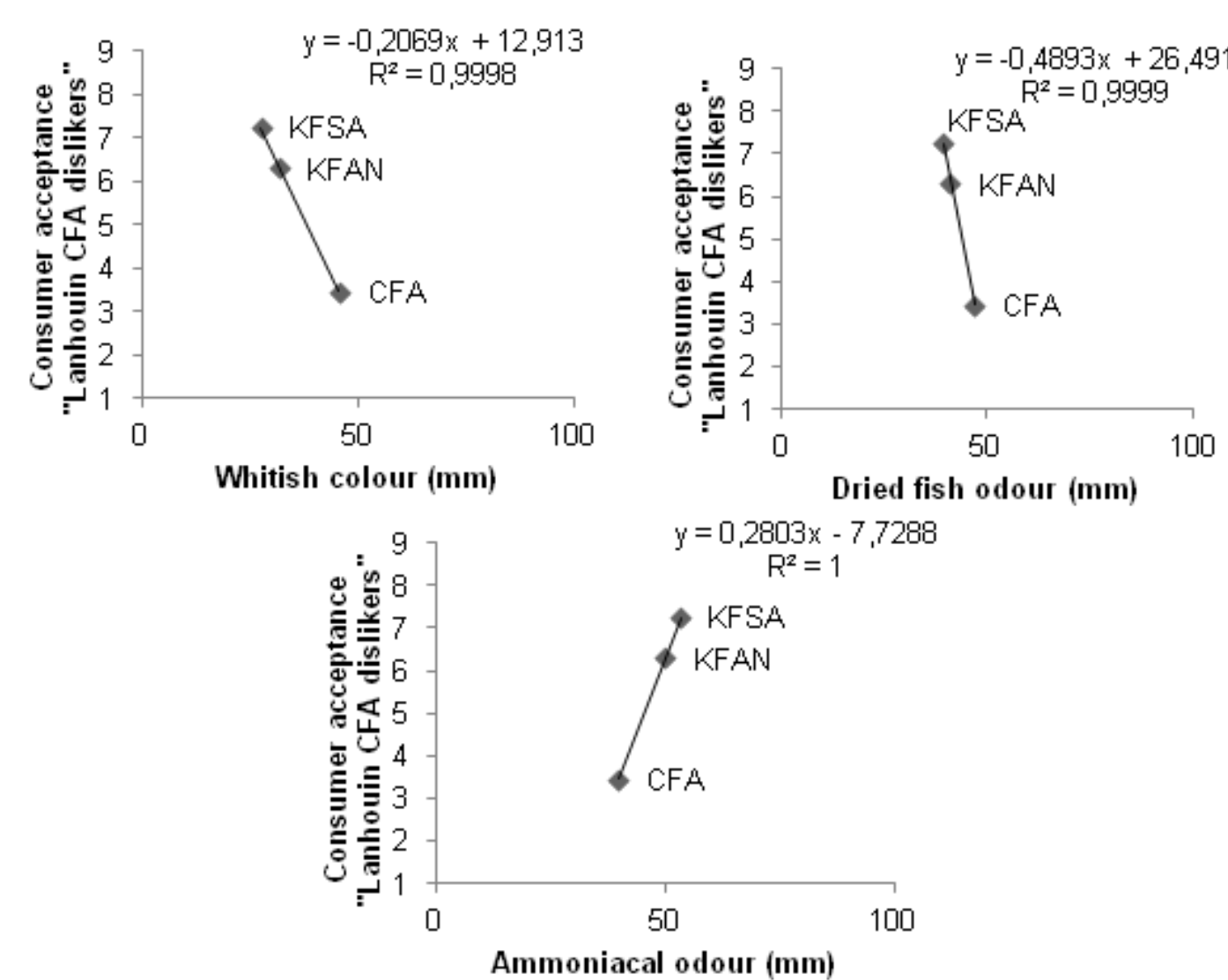


Figure 4. Correlations between sensory attributes and consumer acceptance of Lanhouin.

Traditional Lanhouin were sensory different with king fish Lanhouin having the strongest odour (ammoniacal odour) and cassava fish Lanhouin being whitish in colour. Three classes of consumer behaviour were identified; primarily those who liked all the Lanhouin samples (35% of consumers); those disliking Lanhouin made from anaerobically fermented king fish (37%); and those disliking FATE made from aerobically fermented cassava fish (28%). Consumer acceptance was significantly associated with fish size, whitish colour, dried fish odour and ammoniacal odour. In terms of consumer preference, Lanhouin made from semi-aerobically fermented king fish and Lanhouin made from cassava fish (except for aerobic fermentation) were the most preferred and would be the most suited for further product development suited to markets in West Africa and export to the EU. The similarity in taste attributes for cassava fish and king fish when used for cooked rice dishes will be helpful in designing the form in which Lanhouin can be marketed for wide acceptance.

Legende: CFA = Lanhouin of Cassava fish from aerobic fermentation; CFSA= Lanhouin of Cassava fish from semi-anaerobic fermentation; CFAN = Lanhouin of Cassava fish from anaerobic fermentation; KFA = Lanhouin of Kingfish from aerobic fermentation; KFSA= Lanhouin of Kingfish from semi-aerobic fermentation; KFAN= Lanhouin of Kingfish from anaerobic fermentation.

Conclusions

- The sensory descriptors for cassava fish Lanhouin made using the three technologies are the same, while for king fish Lanhouin made using aerobic and semi-aerobic fermentation differed widely from king fish Lanhouin obtained by anaerobic fermentation.
- Consumers gave an acceptable score for the various Lanhouin samples presented.
- The consumer cluster "Lanhouin CFA dislikers" was positively correlated ($p < 0.05$) with ammoniacal odour, and negatively correlated with whitish colour and dried fish odour.
- From cluster analysis it appeared that semi-anaerobically fermented king fish Lanhouin and cassava fish Lanhouin (except for aerobic fermentation) are more frequently consumed because of their convenience. Consequently, these two types of Lanhouin will undergo product development to improve the safety, consistency and acceptability for both local markets in West Africa and export to EU markets for use as a flavouring agent and taste enhancer.

Reference

Kindossi JM, Akpo-Djenontin OOD, Anihouvi VB, Akissoé NH, Anne-Laure D, Vieira-Dalodé G, Tomlins K, Pallet D, Hounhouigan JD. 2013. Sensory Evaluation and Consumer Acceptability of an African Fish Based Flavouring Agent and Taste Enhancer. Indian Journal of Applied Research 3 (8):317-21.

