

# **Policy Brief: Correlating Instrumental Crispness with Consumer Texture Perception in Ghanaian Fried Cassava Snacks (Kpekple)**

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K, o, f, i, A, n, k, o, m, a, h, ,, A, m, a, S, e, r, w, a, a, B, o, n, s, u, ,, K, w, a,  
m, e, A, s, a, r, e, ,, E, f, u, a, M, e, n, s, a, h

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# | Abstract

Kpekple, a popular fried cassava snack from coastal Ghana, is prized for its crisp texture. Artisanal production methods, however, result in inconsistent quality, undermining consumer satisfaction and commercial potential. The relationship between instrumental measurements of crispness and actual consumer perception in this specific context is unclear, presenting a barrier to developing relevant quality standards. This brief analyses the correlation between instrumental crispness measurements and consumer texture perception of Kpekple. Its objective is to offer evidence-based guidance for establishing practical quality parameters that can support product standardisation, improve consistency, and bolster the local snack industry. A mixed-methods approach was used. Instrumental analysis measured the force-deformation characteristics of snack samples using a texture analyser. Simultaneous consumer testing with a representative panel assessed perceived crispness, hardness, and overall texture liking via structured questionnaires and focus group discussions. A strong positive correlation was identified between instrumental crispness (peak force) and consumer ratings of perceived crispness. Samples with an instrumental peak force below 2.5N were consistently described as 'soggy' or 'unacceptable' by over 80% of consumers. Focus groups revealed that excessive hardness, often linked to higher instrumental values, was also undesirable, indicating an

optimal range for consumer acceptability. Instrumental measurement of crispness is a valid and reliable indicator of consumer texture perception for Kpekple. This finding provides a scientific basis for moving beyond purely subjective assessment in quality control. Develop and disseminate a simple, affordable instrumental quality protocol for producer associations. Integrate the identified optimal crispness range into national food standards for cassava snacks. Support small-scale producers with training on using objective measures to improve batch consistency. Texture analysis, crispness, consumer perception, cassava snacks, Kpekple, quality standardisation This work provides a foundational correlation between instrumental and sensory data for a traditional African snack, enabling evidence-based quality control policy to enhance market competitiveness and reduce waste.

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