Outline

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Mathematical modelling of color, texture kinetics and sensory attributes characterisation of ripening bananas for waste critical point determination

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ripening.

- Instrumental kinetics and sensory attributes for critical point determination.

Abstract

It is vital to correlate the instrumental and non-instrumental analyses of food products so as to determine the product waste critical point. Texture and color (instrumental) were determined by a universal testing machine (UTM) and colorimetry respectively to ascertain the kinetics of bananas during ripening. While deterministic, descriptive and ranking sensory tests were employed for sensory attributes characterisation. Seven banana color ripening stages were used for color variation and three temperatures (16, 23 and 30 °C) were used to study the kinetics, L, a, b and ΔE were calculated and axial puncture force, PF determined. Logistic model and first order reaction models were used. The sensory attributes results indicated banana waste critical point from stage 6 while instrumental analyses still indicated a model trend up to stage 7.

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Keywords

Banana ripening; Modelling; Kinetics; Sensory attributes; Waste critical point