

FERMENTED WHEAT BASED ENDOGENOUS KISHK SA'EEDI: PROXIMATE COMPOSITION AND SENSORY EVALUATION

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INTRODUCTION

Kishk Sa'eedi *KS* is a homemade fermented wheat-based stable food that has been produced and eaten among the inhabitant of the southern part of Egypt since the time of the ancient Egyptians. The *KS* consists of two main ingredients namely: whole parboiled locally grown freshly harvested wheat and unpasteurized fermented skimmed buttermilk (*Laban Zeer*). Despite *KS* is part of the rich food heritage of Egypt, it received limited attention by researchers and it has not been fully investigated to date. This work present the first piece of evidence pertaining to proximate composition and sensory evaluation.



OBJECTIVE

The main objective of this work is to:

- > determine proximate composition of *KS* with varied quality characteristics,
- > explore the sensory quality criteria as perceived by the traditional consumers.



MATERIALS AND METHODS

Chemical compositions 35 *KS* samples representing the wide spectrum of quality, pH, and titratable acidity were determined using official standard methods. The *KS* samples were subjected to sensory evaluation by (7males and 12 females, age 21-37). Mean intensity of quality descriptor attribute QDA and Principal component analysis were conducted.

RESULTS

pH and titratable acidity

pH ranged from 3.81 to 4.64 in all samples and total titratable acidity ranged from 1.36 to 1.74% (g/g lactic acid equivalent).

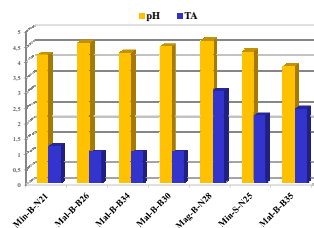
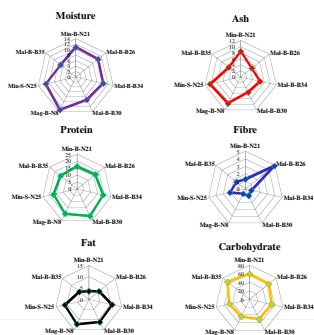


Figure (1): pH and titratable acidity of KS samples with different quality

Proximate analysis

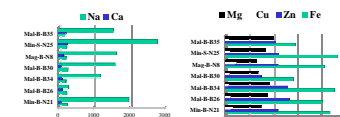
Chemical compositions of *KS* samples (g 100g on dry matter basis) of the *KS* fell within the following ranges: The moisture content ranged between 7.06%±0.04 to 13.27%±0.03; ash 4.73%±0.00 to 10.36%±0.05; protein 15.11%±0.53 to 21.51%±0.31; fibre 0.72% ±0.09 to 4.86%±2.4; fat 3.59%±0.34 to 12.21%±0.32; and carbohydrate 44.44%-65.75%..



RESULTS (Cont.)

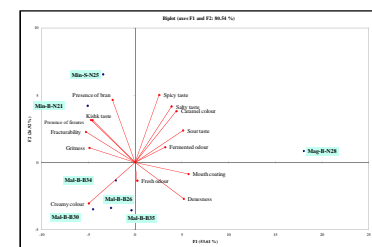
Mineral content

A wide range of minerals in varying concentration were detected in *KS* samples but the most abundant was sodium 899+1.41 to 2754 +2.83ppm followed by phosphorus 135+0.57 to 227.5+7.78 ppm. Significant difference (p>0.05) in calcium, iron, magnesium, zinc and copper content were reported.



Sensory evaluation

Quantitative descriptive analysis (QDA) coupled with principal component analysis (PCA) was used to study the interrelationship among and between 17 developed sensory attributes regarding appearance, odour, flavour and texture of the samples. Mean intensity ratings of all descriptive attributes were significant differences (p<0.05). In general, high ratings for creamy colour, fresh odour, *KS* taste and fracturability are considered as positive effects that would be favoured by panellists while increase in caramel colour, sour taste, denseness and mouth coating are regarded as undesirable.



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