QUALITY EVALUATION AND SENSORY PROPERTIES OF AGIDI PRODUCED FROM BLENDS OF MAIZE (ZEA MAYS) AND PIGEON PEA (CAJANUS CAJAN)

Obeta, N.A. 1, Eze, C.M. 1✉, Leonard, O. C. 1; Ugwuona, F.U. 2, Obeta, U. R. 3

1Department of Food Science and Technology, Faculty of Agriculture, University of Nigeria Nsukka
2Department of Food Science and Technology, College of Food Sciences, Michael Okpara University of Agriculture, Umudike
3Department of Chemistry, College of Physical and Applied Sciences, Michael Okpara University of Agriculture, Umudike.

✉ chinazom.eze@unn.edu.ng

https://doi.org/10.34302/crpjfst/2023.15.3.16

ABSTRACT

Agidi is a traditional fermented starchy food which is smooth-textured, semi-solid (gel-like) with creamy glassy white color cooked from wet-milled and wet-sieved maize paste. It is rich in carbohydrate but low in protein resulting in protein-energy malnutrition. Pigeon pea is a legume with rich source of protein (20-24%), essential amino acids (Lysine, methionine, tryptophan) and fibers. It has remarkable nutritional profile and health benefits. It is an underutilized crop from the family of Leguminosae (Fabaceae) and a good alternative for improving the protein content and nutritional value of carbohydrate dense food products. The influence of 25 %pigeon pea substitution with maize in the processing of ‘agidi’ was studied producing five samples coded A (100% Maize (control), B (75% Maize and 25% Pigeon pea), C (50% Maize and 50% pigeon pea), D (25%Maize and 75% Pigeon pea), E (100% Pigeon pea) and analyzing the nutritional quality and sensory properties in order to further exploit the functionality and acceptability of ‘agidi’. Comparing control (100% maize) and sample E (100 % pigeon pea), significant (p<0.05) differences were observed in terms of the nutritional quality. Sample E has a smaller values of moisture (9.55 %), viscosity (150 Cps,) with a higher protein content (19.50 %), calcium (212.50 mg/100g), potassium (285.50 mg/100g), Iron (1.16 mg/100g), saponin (0.207 mg/g), a slightly decreased sour taste, flavor and mouth-feel intensity with the addition of pigeon pea, and with an important nutritional intake (ash: 0.75%, protein: 19.50%, crude fiber: 13.70%). Hence, combining pigeon pea with maize in the processing of ‘agidi’ at the substitution level up to 25% did not vary much from the control (100% maize) and was highly accepted by the consumers.

Keywords:
Agidi; Malnutrition; Pigeon pea; Zea mays; Properties.