

Review Form 3

Journal Name:	Asian Food Science Journal
Manuscript Number:	Ms_AFSJ_129649
Title of the Manuscript:	Effect of Optimization on the Composition and Functional properties of Legume-based Stiff Dough Blends Updated Title: Optimization of Legume-based stiff dough: Impacts on Composition and Functional Properties
Type of the Article	Original Research Article

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PART 1: Comments

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	The optimazation of stiff-dough is very important for releasing the necessary nutrients and functional properties improvement.	Optimizing the production of legume-based stiff dough offers sustainable nutritious options, contributing to food security and public health (Binou <i>et al.</i> , 2022). This will encourage industrial application of underutilized legumes and boost local economies for farmers.
Is the title of the article suitable? (If not please suggest an alternative title)	Yes	

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<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>The authors did not present the summary of the results after the methodology was used. They shifted straight to the conclusion. The results is a very important part and a summary of the results should be included</p>	<p>Updated Abstract</p> <p>Abstract This study investigated the effect of optimization of process techniques for the production of Bambara groundnut flour and optimization of ingredient formulation for legume-based stiff dough, with an aim to improve nutritional composition and functional properties, while retaining its traditional appeal. The legume-based stiff dough comprised of fermented Bambara groundnut flour and three existing stiff dough staples (eba, pounded yam and fufu). The Bambara groundnut, yam and cassava tubers were processed into flour and mixed into different proportions of ratio 90:10, 80:20, 70:30, 60:40 and 100 was used as control. Sensory properties were evaluated to determine most acceptable blend. Most acceptable blend (70% fermented Bambara groundnut flour inclusion) was evaluated for proximate composition (moisture, protein, crude fat, crude fiber, ash and carbohydrate); and functional properties. All data obtained were subjected to appropriate statistical analysis. Protein content ranged from 1.31% to 4.24% and 14.63% to 16.26%; fat content ranged from 0.26% to 3.02% and 3.31% to 3.77%; fiber content ranged from 0.17% to 2.90% and 1.64% to 3.12%; ash content ranged from 0.37% to 1.38% and 2.63% to 2.84%; for stiff dough with 0% and 70% fermented Bambara groundnut flour inclusion respectively. The bulk density, water absorption capacity, least gelation concentration ranged between 1.54g/cm³ and 2.00g/cm³; 12% and 20%, 8% and 22% respectively and varied significantly different (p<0.05) among samples. Sensory evaluation indicated significant difference (p<0.05) among the samples, with 70% legume inclusion being most preferred in terms of texture. The findings of this study have shown that blending 70% of fermented (48hours) Bambara groundnut flour into 30% stiff dough (e.g., Eba) improved nutrient content up to 50% and enhanced functionality, offering valuable insights for food manufacturers and consumers seeking healthier and more sustainable food options.</p> <p>Keywords: Stiff dough, Bambara groundnut, Proximate composition, Sensory evaluation, Functional properties.</p>
<p>Is the manuscript scientifically, correct? Please write here.</p>	<p>Yes, include the flow diagram for the production process and number the each section. The authors need to include sentences in the introduction on eba, fufu, and pounded yams. What are they and how is it eaten?</p>	<p>Flowcharts have been included in the manuscript. Each section has been numbered. Description for eba, fufu and pounded were made already. However, I have added more sentences to the description</p> <p>Eba is gelatinized garri. Garri is made from processed cassava tubers. To prepare Eba, hot boiled water is added to Garri, mixed and kneaded to form stiff dough. Traditionally, pounded yam is prepared by pounding boiled soft yams until stiff dough is formed. Alternatively, yam tubers can be processed into instant yam flour, stirred into boiling water until stiff dough is formed. Fufu is made from fermented wet paste of cassava. The fermented paste is cooked by boiling; it is then pounded to obtain stiff dough. Alternatively, the wet paste is pressed into a cake and dried to obtain fufu flour; the flour can be stirred into boiled water to obtain stiff dough</p>
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>Yes</p>	

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Is the language/English quality of the article suitable for scholarly communications?	The author need to check for grammar conciseness and correctness	Checked
<u>Optional/General</u> comments	The authors need to include a flow diagram of each production process of each food. Check for grammatical correctness and conciseness. The author needs to number each section of the manuscript.	Done

PART 2:

	<u>Reviewer's comment</u>	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Are there ethical issues in this manuscript?</u>	<u>(If yes, Kindly please write down the ethical issues here in details)</u>	