

Review Form 3

Journal Name:	Asian Food Science Journal
Manuscript Number:	Ms_AFSJ_129649
Title of the Manuscript:	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.	Using the legumes blends enhancing their composition and functional properties. By fine-tuning ingredient proportions and processing conditions, the nutritional value, texture, and baking qualities of the dough can be significantly improved. Such optimization ensures better protein quality, increased dietary fiber content, and improved elasticity or cohesiveness of the dough	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)	the title, "Effect of Optimization on the Composition and Functional Properties of Legume-based Stiff Dough Blends," is clear and informative, but it could be refined for conciseness and impact. Optimization of Legume-Based Stiff Dough: Impacts on Composition and Functional Properties "This revised title maintains the original	"Optimization of Legume-based stiff dough: Impacts on Composition and Functional Properties".

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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 abstract is generally comprehensive and provides a good overview of the study. However, it could benefit from some refinement for clarity, conciseness,</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</p>	

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Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	Reference are outdated and not sufficiecnt	Addeditional : Adesola, M. O., Adejuyitan, J. A. & Idowu, O.O. (2021). “Effect of Co-Fermentation of Cassava and African Yam Bean on Some Compositional and Sensory Properties of Pupuru”. <i>Journal of Scientific Research and Reports</i> 27 (8):29-35. https://doi.org/10.9734/jsrr/2021/v27i830421 Binou P, Yanni AE, Karathanos VT. Physical properties, sensory acceptance, postprandial glycemic response, and satiety of cereal based foods enriched with legume flours: a review. <i>Crit Rev Food Sci Nutr.</i> 2022;62(10):2722-2740. doi: 10.1080/10408398.2020.1858020. Epub 2020 Dec 11. PMID: 33305591. Babajide K., & Ironi, Emmanuel & Alamu, Emmanuel & Ajani, Emmanuel & Abass, Adebayo & Adesokan, Michael & Parkes, Elizabeth & Maziya-Dixon, Busie. (2022). Influence of traditional processing and genotypes on the antioxidant and antihyperglycaemic activities of yellow-fleshed cassava. <i>Frontiers in Nutrition.</i> 9. 10.3389/fnut.2022.894843. Adeola, A. A., Otegbayo, B. O. & Ogunnoiki, S. (2012). Preliminary Studies on the Development and Evaluation of Instant Pounded Yam from <i>Dioscorea alata</i> . <i>J. Appl. Sci. Environ. Management</i> 16(3 287-290)
Is the language/English quality of the article suitable for scholarly communications?	yes	
<u>Optional/General</u> comments		

PART 2:

	<u>Reviewer’s comment</u>	<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>
<u>Are there ethical issues in this manuscript?</u>	<u>(If yes, Kindly please write down the ethical issues here in details)</u>	