

**Review Form 3**

Journal Name:	<b>Asian Journal of Research in Crop Science</b>
Manuscript Number:	<b>Ms_AJRCS_120830</b>
Title of the Manuscript:	<b>Nutritional and Phytochemical Assessment from Various Accessions of Bambara Groundnut (<i>Vigna subterranea</i>)</b>
Type of the Article	<b>Original Research Article</b>

## Review Form 3

### PART 1: Review Comments

Compulsory REVISION 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>
<p><b>Please write few sentences regarding the importance this manuscript for scientific community. Why do you like (or dislike) this manuscript? Minimum 3-4 sentences may be required for this part.</b></p>	<p>This manuscript holds significant importance for the scientific community as it contributes valuable insights into the nutritional and phytochemical potential of bambara groundnut, an underutilized crop with promise for food security and human health. By analyzing various accessions, the study reveals genetic diversity in nutritional and antioxidant properties, paving the way for targeted breeding programs to enhance these traits. In addition, it is well structured, presents clear and concise results, and addresses a relevant research topic. The findings on the high phenolic content and antioxidant activity of the testa, in particular, offer new avenues for exploring the potential of this crop as a functional food ingredient. Furthermore, the identification of specific accessions with superior nutritional profiles highlights the importance of genetic diversity in crop improvement efforts.</p>	
<p><b>Is the title of the article suitable? (If not please suggest an alternative title)</b></p>	<p>The title "<b>Nutritional and Phytochemical Assessment from Various Accessions of Bambara Groundnut (Vigna subterranea)</b>" is clear and informative, but it could be slightly refined for better readability and precision. Here is a revised version:</p> <p><b>"Nutritional and Phytochemical Assessment of Various Accessions of Bambara Groundnut (Vigna subterranea)"</b></p>	
<p><b>Is the abstract of the article comprehensive? Do you suggest addition (or deletion) of some points in this section? Please write your suggestions here.</b></p>	<p>The abstract is generally comprehensive and covers the key aspects of the study. However, in as much as the conclusion is strong but it could briefly mention potential applications or future research directions.</p> <p>For example "This study highlights the nutritional and antioxidant potential of Bambara groundnut, emphasizing its role as a functional food rich in phenolic compounds and essential nutrients beneficial for human health. Future research could explore its applications in food and nutraceutical industries."</p>	
<p><b>Are subsections and structure of the manuscript appropriate?</b></p>	<p>Yes the subsections and structure of the manuscript are appropriate</p>	
<p><b>Please write few sentences regarding the scientific correctness of this manuscript. Why do think that this manuscript is scientifically robust and technically sound? Minimum 3-4 sentences may be required for this part.</b></p>	<p>Based on the manuscript, it is scientifically robust and technically sound for several reasons:</p> <ol style="list-style-type: none"> <li><b>Comprehensive Methodology:</b> The study design encompasses a thorough evaluation of nutritional composition (proximate and mineral), phytochemical content (polyphenols), and antioxidant activity, providing a multifaceted assessment of the bambara groundnut accessions.</li> <li><b>Statistical Rigor:</b> The use of Duncan's Multiple Range Test (DMRT) for statistical analysis demonstrates a commitment to identifying significant differences among accessions and plant parts, enhancing the validity of the findings.</li> <li><b>Focus on Bioactive Compounds:</b> The emphasis on polyphenols and antioxidant activity highlights the potential health benefits of bambara groundnut, aligning with current trends in functional food research. Additionally, the study's focus on multiple accessions of Bambara groundnut and different plant parts provides a thorough comparative analysis, contributing to a deeper understanding of the nutritional and phytochemical diversity within this species.</li> <li><b>Specific Results:</b> the detailed reporting of the results, including specific measurements of carbohydrate, protein, energy content, and antioxidant activity, demonstrates meticulous data analysis and interpretation, which are critical for the credibility and reproducibility of the findings.</li> </ol> <p>This manuscript collectively suggest that the manuscript adheres to scientific principles and employs sound methodologies, making it a valuable contribution to the existing knowledge on bambara groundnut's nutritional and phytochemical properties.</p>	

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<b>Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</b>	The references are recent. However, more can be added to enrich the manuscript.	
<u>Minor</u> REVISION comments		
<b>Is language/English quality of the article suitable for scholarly communications?</b>	Yes language/English quality of the article is suitable for scholarly communications	
<u>Optional/General</u> comments	<p>The introduction is well-structured and provides a solid foundation for the study by highlighting the importance of underutilized crops, particularly Bambara groundnut (BGN). However, there are areas where it can be improved for clarity, coherence, and to better establish the research gap. Here are some suggestions for improvement:</p> <ul style="list-style-type: none"> <li>• <b>Reorganize for better flow:</b> Start with a general introduction to BGN, its importance, and nutritional value. Then, transition to the Malaysian context and discuss the low legume consumption in the population.</li> <li>• <b>Clarify the Importance and Context:</b> Provide more context about the global importance of food security and how underutilized crops contribute to this issue.</li> <li>• <b>Smooth Transition between Sections:</b> Ensure smooth transitions between the different points discussed, such as nutritional values, potential uses, and previous studies.</li> <li>• <b>References Integration:</b> Integrate references more seamlessly into the text to improve readability.</li> </ul> <p>The objectives of the study were implicitly stated at the end of the introduction. However, to improve clarity and ensure that the objectives are clearly communicated to the reader, it is often beneficial to explicitly state them. Therefore, I would suggest adding a sentence or two at the end of the introduction to clearly state the objectives. For example: "Therefore, this study aims to:</p> <ul style="list-style-type: none"> <li>• Investigate the proximate and mineral compositions of various BGN accessions collected from Malaysia.</li> <li>• Quantify the total phenolic content and antioxidant activity of different BGN plant parts (seed, pod, and testa).</li> <li>• Assess the potential of BGN as a functional food ingredient and a sustainable nutritional source for the Malaysian population."</li> </ul> <p>This would clearly outline the specific aims of the research and provide a framework for the rest of the manuscript.</p>	

**PART 2:**

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

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**Reviewer Details:**

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