Review Form 3

Journal Name:	**Asian Research Journal of Agriculture**
Manuscript Number:	**Ms_ARJA_126409**
Title of the Manuscript:	**Feasibility of Fruit Waste-Derived Media for Microbial Culture: A Sustainable and Low-Cost Approach**
Type of the Article	

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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Important Policies Regarding Peer Review

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PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	**This manuscript presents valuable insights into sustainable alternatives for microbial culture media, a topic of growing importance in both environmental management and scientific research. By utilizing fruit waste, it aligns well with global efforts to reduce food waste and promote ecofriendly practices in laboratory settings. The findings highlight the potential for cost-effective solutions, which could significantly benefit research institutions with limited resources. Additionally, the study's practical applications in resourch-limited areas make it a noteworthy cotribution, though some methodological details could be enchanced for broader reproducibility.**	
Is the title of the article suitable? (If not please suggest an alternative title)	**-The title "Feasibility of Fruit Waste-Derived Media for Microbial Culture: A Sustainable and Low-Cost Approach" is suitable as it captures the study's focus on sustainability and cost-effectiveness. However, an alternative could be "Evaluating Fruit Waste-Derived Media as Sustainable Alternatives for Microbial Cultivation. The suggested title change to "Evaluating Fruit Waste-Derived Media as Sustainable Alternatives for Microbial Cultivation" aims to enhance precision and clarity. Here are the main reasons for this suggestion: 1. Clarity and Specificity: "Evaluating" directly conveys that the study assesses or tests the viability of these media, rather than just exploring feasibility, which is slightly more vague. 2. Scope of Alternatives: The phrase "Sustainable Alternatives" highlights that the study's focus is on presenting an environmentally friendly option to traditional media, which may attract more interest from readers specifically searching for sustainable methods. 3. Alignment with Keywords: This title structure aligns well with key terms like "sustainable," "alternative media," and "microbial cultivation," enhancing searchability and relevance for those seeking specific applications in microbiological research. Overall, while the original title is appropriate, the suggested title could make the study's contributions more immediately clear to the reader.**	
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.	**The abstract is mostly comprehensive but could be refined by including specific quantitative results, such as the percentage cost reduction compared to traditional media. This would provide a clearer picture of the study's practical impact. Additionally, a brief mention of methodological specifics (e.g., concentrations used or main organisms tested) could help clarify the study's scope. Quantitative Data: Where possible, include specific data points (e.g., percentage cost reduction compared to conventional media) to strengthen the abstract. In addition to including quantitative data like the percentage cost reduction, here are some further suggestions to enhance the abstract: 1. Key Findings Summary: Briefly summarize which fruit media showed the most effective microbial growth compared to conventional media. Mention specific fruits that demonstrated superior or comparable growth (e.g., banana or papaya media) to provide readers a clear view of the study's outcomes. 2. Methodology Overview: Add a short mention of the methodology, such as the concentrations used (e.g., 150 g, 200 g, 250 g of fruit peel per liter) and the microbial species tested. This will help readers quickly understand the study design without needing to dive into the full text. 3.Environmental Impact Statement: Briefly emphasize the environmental implications of reducing fruit waste and lowering costs. This addition would underline the significance of the study for sustainability and waste reduction. 4. Concluding Remark: Add a concise concluding sentence that highlights the potential for scaling this solution in resource-limited settings or in sustainable lab practices. This could frame the study's broader relevance for various audiences. Incorporating these elements can improve clarity, showcase the study's relevance, and provide a strong snapshot of both methods and outcomes.**	
Are subsections and structure of the manuscript appropriate?	**The manuscript is structured well, with clear sections for Introduction, Materials and Methods, Results, Discussion, and Conclusion. However, adding a specific "Statistical Analysis" subsection within Methods could improve clarity. Here are a few additional suggestions to further enhance the manuscript's structure: 1. Separate "Limitations and Future Research" Section in Discussion: - Consider adding a brief subsection at the end of the Discussion to address any limitations in the study and outline areas for future research. This can clarify for readers any factors that may affect the generalizability of the results and suggest how future studies might build upon these findings. 2. Detailed Description of Control Comparisons: - Within the Materials and Methods, ensure that the comparison with control media (e.g., Potato Dextrose Agar and Nutrient Agar) is explicitly described, perhaps under a dedicated "Control Media" subsection. This will emphasize the standard against which fruit-based media were tested, strengthening the experimental design. 3. Visual Aids in Results Section:- Add figures, charts, or tables in the Results to visually summarize key findings, such as microbial growth rates across different fruit media. This would improve readability and allow readers to quickly grasp comparative performance. 4. Brief Conclusion Summary:- At the end of the Conclusion, consider adding a concise summary statement that reiterates the practical benefits and possible applications of fruit waste media in microbiological research. This final emphasis could solidify the manuscript's impact for readers. Adding these refinements can improve both the readability and impact of the manuscript, providing a clear, methodical flow from experimental design to practical implications.**	

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Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	**The manuscript is scientifically sound, demonstrating rigorous experimentation with multiple media preparations and microbial tests. It provides valuable data on alternative microbial culture methods, supporting sustainability in laboratory practices. The methodology is clearly defined, allowing for reproducibility, although details on statistical treatment of data could enhance rigor. Overall, the results align with the study's objectives, making it a robust contribution to microbiological and environmental research. Here are a few additional points that could further strengthen the evaluation: 1.Innovative Approach: The manuscript takes an innovative approach by exploring fruit waste as a culture medium, addressing both scientific and environmental issues. This dual focus enhances its relevance and appeal to a wide range of readers in both microbiology and sustainability fields. 2. Detailed Comparative Analysis: The manuscript includes a detailed comparison between fruit-based and conventional media, which is critical for validating the effectiveness of these alternatives. This aspect strengthens the reliability of the findings and shows practical applications in resource-limited settings. 3.Potential for Broader Applications: Beyond laboratory use, the findings may have broader implications for industries such as agriculture, where sustainable microbial cultivation methods could be highly beneficial. Emphasizing this potential could increase the manuscript's impact. 4. Data Visualization: Including graphical representations of key data would make the results more accessible, especially for readers looking to quickly assess comparative growth rates or other trends. This would improve the manuscript's clarity and overall readability. By emphasizing these strengths, the manuscript could attract more interest and demonstrate its broader significance within the scientific community.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	**The references are generally sufficient, but a few more recent studies (within the last five years) could strengthen the manuscript's relevancy. For example, studies on alternative media sources or recent advancements in sustainable laboratory practices would add depth to the literature review.**	
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	**The language is generally clear but could benefit from minor editing to improve fluency and scholarly tone. Some sentences are overly lengthy or complex, which could hinder readability. A few instances of terminology could also be refined to match conventional scientific communication.**	
Optional/General comments	**This study makes a significant contribution by exploring practical solutions for sustainable microbial culture practices. Emphasizing the broader implications of fruit waste utilization for cost reduction and environmental benefits may enhance the impact of the paper. Additionally, graphical representations of growth data would add clarity to the Results section.**	

PART 2:

	Reviewer's comment	**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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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