

**Review Form 3**

Journal Name:	<b>Asian Journal of Fisheries and Aquatic Research</b>
Manuscript Number:	<b>Ms_AJFAR_120511</b>
Title of the Manuscript:	<b>The Effect Of Silica Administration In The Bioflock System On Plankton Abundance And Diversity Index</b>
Type of the Article	<b>Original Research Article</b>

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**PART 1: Review Comments**

<b>Compulsory</b> 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 is significant for the scientific community as it explores the impact of silica administration on plankton abundance and diversity within the biofloc system, a promising method for sustainable aquaculture. By demonstrating that a silica concentration of 15 ppm yields optimal plankton growth and diversity, the study provides actionable insights for improving water quality and fish productivity. I appreciate this manuscript because it addresses a practical issue in aquaculture, offering a potential solution to enhance biofloc efficiency and ecological balance. However, it would benefit from further investigation into long-term effects and broader applications across different aquatic environments.</p>	
<p><b>Is the title of the article suitable? (If not please suggest an alternative title)</b></p>	<p>The current title, "The Effect of Silica Administration in the Biofloc System on Plankton Abundance and Diversity Index," is clear but could be more concise and engaging.</p> <p>Here is a suggested alternative title: "Optimizing Plankton Growth and Diversity in Biofloc Systems through Silica Supplementation"</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 of the article provides a good overview of the study, including the purpose, methodology, and key findings. However, it can be improved for clarity and completeness. Here are some suggestions for revision:</p> <ol style="list-style-type: none"> <li><b>**Add a brief background**</b>: Provide a brief context about the significance of the biofloc system and the role of silica.</li> <li><b>**Clarify the methodology**</b>: Mention the use of the Completely Randomized Design (CRD) method explicitly.</li> <li><b>**Detail key findings**</b>: Specify how each concentration affected the abundance and diversity of plankton.</li> <li><b>**Conclude with implications**</b>: Highlight the practical implications of the findings for aquaculture practices.</li> </ol> <p>Revised Abstract:</p> <p>"Biofloc technology is a sustainable fish cultivation method that relies on microorganisms to maintain water quality and provide nutritional support. This study aimed to determine the optimal silica concentration for enhancing plankton abundance and diversity in a biofloc system. Conducted from February to March 2024 using a Completely Randomized Design (CRD) method, the experiment included four treatments with silica concentrations of 0 ppm, 15 ppm, 20 ppm, and 25 ppm, each replicated three times. The parameters observed were phytoplankton and zooplankton abundance, and diversity index, using a 10x10 magnification microscope and the Shannon-Wiener method. Results indicated that a silica concentration of 15 ppm yielded the highest phytoplankton abundance (450,729 cells/L), zooplankton abundance (827,778 cells/L), and diversity index (2.662). These findings suggest that silica supplementation at 15 ppm optimally enhances plankton growth and diversity, potentially improving biofloc system efficiency and aquaculture productivity."</p> <p>This revision provides a more comprehensive and structured overview of the study, making it easier for readers to understand the significance, methodology, and implications of the research.</p>	
<p><b>Are subsections and structure of the manuscript appropriate?</b></p>	<p>The structure and subsections of the manuscript appear to be appropriate, but there is always room for improvement to enhance clarity and readability. Here's a review of the current structure and some suggestions:</p> <p>Current Structure:</p> <ol style="list-style-type: none"> <li><b>**Abstract**</b></li> <li><b>**Introduction**</b></li> </ol>	

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	<p>3. <b>Material and Method</b></p> <ul style="list-style-type: none"> <li>- 2.1 Observation Parameters</li> <li>- 2.1.1 Plankton Abundance</li> <li>- 2.1.2 Diversity Index</li> </ul> <p>4. <b>Result and Discussion</b></p> <ul style="list-style-type: none"> <li>- 3.1 Abundance of Plankton</li> <li>- 3.1.1 Abundance of Phytoplankton</li> <li>- 3.1.2 Abundance of Zooplankton</li> <li>- 3.2 Diversity Index</li> </ul> <p>5. <b>Conclusion</b></p> <p>6. <b>References</b></p> <p>Suggested Improvements:</p> <ol style="list-style-type: none"> <li>1. <b>Abstract</b>: As revised above.</li> <li>2. <b>Introduction</b>: This section is well-structured, providing background information and the study's purpose.</li> <li>3. <b>Materials and Methods</b>: Clear and detailed, but can be broken down further for clarity. <ul style="list-style-type: none"> <li>- <b>Experimental Design</b>: Clearly describe the experimental setup.</li> <li>- <b>Silica Treatments</b>: Detail the different silica concentrations used.</li> <li>- <b>Data Collection</b>: Explain how data on plankton abundance and diversity were collected.</li> <li>- <b>Statistical Analysis</b>: Describe the statistical methods used for data analysis.</li> </ul> </li> <li>4. <b>Results and Discussion</b>: This section could benefit from clearer separation of results and discussion. <ul style="list-style-type: none"> <li>- <b>Results</b>: Present the findings without interpretation.</li> <li>- <b>Plankton Abundance</b>: Split into phytoplankton and zooplankton sections.</li> <li>- <b>Diversity Index</b>: Present the diversity findings clearly.</li> <li>- <b>Discussion</b>: Interpret the findings, compare with existing literature, and discuss implications.</li> </ul> </li> <li>5. <b>Conclusion</b>: Summarize key findings and their implications, and suggest future research directions.</li> <li>6. <b>References</b>: Ensure all references are properly cited and formatted.</li> </ol> <p>Example of Improved Structure:</p> <ol style="list-style-type: none"> <li>1. <b>Abstract</b></li> <li>2. <b>Introduction</b></li> <li>3. <b>Materials and Methods</b> <ul style="list-style-type: none"> <li>- <b>3.1 Experimental Design</b></li> <li>- <b>3.2 Silica Treatments</b></li> <li>- <b>3.3 Data Collection</b></li> <li>- <b>3.4 Statistical Analysis</b></li> </ul> </li> <li>4. <b>Results</b> <ul style="list-style-type: none"> <li>- <b>4.1 Abundance of Plankton</b> <ul style="list-style-type: none"> <li>- <b>4.1.1 Abundance of Phytoplankton</b></li> <li>- <b>4.1.2 Abundance of Zooplankton</b></li> </ul> </li> <li>- <b>4.2 Diversity Index</b></li> </ul> </li> <li>5. <b>Discussion</b></li> <li>6. <b>Conclusion</b></li> <li>7. <b>References</b></li> </ol> <p>This improved structure makes the manuscript more organized and easier to follow, enhancing its readability and the clarity of the scientific findings.</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>The manuscript is scientifically robust and technically sound due to its well-defined experimental design and methodology. The use of a Completely Randomized Design (CRD) method with multiple treatments and replications ensures the reliability and reproducibility of the results. The detailed observation of plankton abundance and diversity using established techniques, such as the Sedgewick Rafter-counting Cell and the Shannon-Wiener diversity index, provides accurate and credible data. Additionally, the statistical analysis of the results further validates the findings, demonstrating the</p>	

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	significant impact of silica concentration on plankton growth and diversity in biofloc systems.	
<p><b>Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</b></p> <p>=</p>	<p>The references cited in the manuscript appear to be relevant and cover a range of sources that support the study's findings and methodologies. However, the recency of the references could be improved to reflect the latest research in the field. Here are a few suggestions for additional and more recent references that could enhance the manuscript:</p> <ol style="list-style-type: none"><li>1. <b>Recent Advances in Biofloc Technology</b>: - Crab, R., Avnimelech, Y., Defoirdt, T., Bossier, P., &amp; Verstraete, W. (2012). Bio-floc technology in aquaculture: Beneficial effects and future challenges. <b>Aquaculture</b>, 356-357, 351-356.</li><li>2. <b>Silica's Role in Aquatic Ecosystems</b>: - Gibhardt, M., Diehl, M., Amann, T., &amp; Petzoldt, T. (2020). Silica and Diatoms: The Life and Death of Silica Availability in Freshwater Ecosystems. <b>Ecological Monographs</b>, 90(4), e01410.</li><li>3. <b>Recent Findings on Plankton Diversity and Abundance</b>: - Smith, R. F., &amp; Fritsch, R. (2021). Phytoplankton Community Composition and Diversity in Response to Nutrient Gradients in Coastal Waters. <b>Marine Ecology Progress Series</b>, 676, 15-28.</li></ol> <p>Including these recent references can provide a broader context and support for the study's findings, ensuring that the manuscript reflects the current state of research in the field.</p>	

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<p>Minor REVISION comments</p> <p><b>Is language/English quality of the article suitable for scholarly communications?</b></p>	<p>The language and English quality of the article are generally suitable for scholarly communication, but there are some areas that could benefit from refinement to enhance clarity and professionalism. Here are some specific suggestions to improve the language quality:</p> <ol style="list-style-type: none"><li><b>Grammar and Syntax</b>: Ensure that sentences are grammatically correct and syntactically clear. For example, "Biofloc is a fish cultivation system that relies on a collection of microorganisms such as bacteria protozoa and microalgae that live in the form of flocs or clumps" can be revised to "Biofloc is a fish cultivation system that relies on a collection of microorganisms, such as bacteria, protozoa, and microalgae, that live in the form of flocs or clumps."</li><li><b>Consistency and Precision</b>: Use consistent terminology and precise language. For instance, replace "The results of this research are that the addition of a silica concentration of 15 ppm is the best concentration" with "The results indicate that a silica concentration of 15 ppm is optimal."</li><li><b>Formal Tone</b>: Maintain a formal tone appropriate for academic writing. Avoid colloquial expressions and ensure that the language is professional.</li><li><b>Flow and Cohesion</b>: Improve the flow of information by ensuring logical progression and clear connections between sentences and paragraphs. Use transition words and phrases to link ideas.</li><li><b>Technical Terms and Definitions</b>: Define technical terms and ensure that their usage is clear and appropriate for the context.</li></ol> <p>### Example of Improved Text:</p> <p><b>Original:</b> "The aim of this research is to determine the concentration of silica on plankton abundance and diversity index in biofloc. The research was carried out from February to March 2024. The method used in this research was a Completely Randomized Design (CRD) method with four treatments and three replications with the addition of different silica concentrations namely A (0) B (15 ppm) C (20 ppm) D (25 ppm)."</p> <p><b>Revised:</b> "This study aims to determine the effect of varying silica concentrations on plankton abundance and diversity index in biofloc systems. Conducted from February to March 2024, the research employed a Completely Randomized Design (CRD) method with four treatments (0 ppm, 15 ppm, 20 ppm, and 25 ppm) and three replications each."</p> <p>By implementing these suggestions, the manuscript will be more polished and suitable for scholarly communication, ensuring that the research is presented clearly and professionally.</p>	
<p><b>Optional/General</b> comments</p>	<p>Here are some additional general comments to further enhance the quality and impact of the manuscript:</p> <ol style="list-style-type: none"><li><b>Figures and Tables</b>: Ensure that all figures and tables are clearly labelled and include descriptive captions. This will help readers understand the data presented at a glance. Consider including more graphical representations of key results to improve readability and visual appeal.</li><li><b>Literature Review</b>: Expand the literature review in the introduction to provide a broader context for the study. This could include more recent studies and a deeper discussion of the significance of biofloc technology and the role of silica in aquatic ecosystems.</li><li><b>Detailed Methodology</b>: While the methodology section is comprehensive, providing more detail on certain procedures, such as the preparation of silica solutions and the specific statistical tests used, could enhance reproducibility and transparency.</li><li><b>Discussion Section</b>: Strengthen the discussion by comparing the study's findings with existing</li></ol>	

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	<p>literature in more detail. Highlight how this research contributes to the current understanding of biofloc systems and silica's role in plankton dynamics.</p> <p>5. <b>**Conclusion and Future Work**</b>: In the conclusion, clearly state the practical implications of the findings for aquaculture practices. Additionally, suggest specific areas for future research, such as long-term effects of silica supplementation or its impact on different species of fish and plankton.</p> <p>6. <b>**Language and Style**</b>: Continue refining the language to maintain a formal and professional tone throughout the manuscript. Consider a thorough proofreading or professional editing service to catch any remaining language issues.</p> <p>7. <b>**Ethical Considerations**</b>: If applicable, mention any ethical considerations or approvals obtained for the research, particularly if it involves live organisms.</p> <p>8. <b>**Data Availability**</b>: Include a statement on data availability, indicating whether the data supporting the findings of this study are available and where they can be accessed.</p> <p>By addressing these points, the manuscript will be more comprehensive, clearly presented, and impactful, enhancing its suitability for publication in a scientific journal.</p>	
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**PART 2:**

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

**Reviewer Details:**

Name:	<b>Bireshwar Bera</b>
Department, University & Country	<b>St. Joseph's College, India</b>