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REVIEWER'S REPORT

Manuscript No.: IJAR- 57264

Title: Reproductive performance and economic analysis of fry production in the Brazilian Strain of Oreochromis niloticus in Côte d'Ivoire.

Recommendation:

Accept after minor revision.

Rating	Excel.	Good	Fair	Poor
Originality	✓			
Techn. Quality	✓			
Clarity	✓			
Significance	✓			

Reviewer Name: Dr. Bishwajit Rout

Reviewer's Comment for Publication.

(*To be published with the manuscript in the journal*)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.

1. **Significance**: The study is significant as it evaluates an improved strain of Nile tilapia with respect to reproductive efficiency and cost-effectiveness in Côte d'Ivoire. It contributes to addressing challenges of low fish production and high import dependency. The findings are valuable for policymakers and aquaculture practitioners aiming to enhance productivity, ensure food security, and promote sustainable fish farming practices in developing regions.

2. **Strength**: The primary strength of the study lies in its integration of biological performance and economic analysis, providing a comprehensive assessment of aquaculture viability. The use of controlled experimental conditions enhances reliability. Additionally, the focus on an improved genetic strain offers practical relevance. The study's detailed methodology and real-world applicability make it valuable for both researchers and aquaculture practitioners.

3. **Key Insight**: A key insight from the study is that the Brazilian strain of Nile tilapia demonstrates strong reproductive performance and relatively low production cost under controlled hatchery conditions. However, factors such as stocking density, feeding strategies, and larval management significantly influence survival and growth outcomes. Optimizing these parameters is essential for maximizing productivity and ensuring sustainable and profitable aquaculture operations.

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The paper titled *"Reproductive performance and economic analysis of fry production in the Brazilian Strain of Oreochromis niloticus in Côte d'Ivoire"* evaluates the Brazilian strain of Oreochromis niloticus in Côte d'Ivoire, focusing on its reproductive performance and economic viability. Conducted at the SRPAC research station, the study demonstrates that this improved strain achieves excellent broodstock survival (100%) and a larval survival rate of 82.63%. With an average production of 292.33 ± 15.6 larvae per female and a competitive unit cost of 13.21 FCFA per fingerling, the findings suggest this strain is a cost-effective solution for enhancing Ivorian aquaculture productivity.

Suggestions for Improvement:

1. Reduce excessive general statistics unrelated to study focus.
2. Provide stronger justification for selecting the Brazilian strain by comparing it explicitly with local strains in terms of productivity and economic efficiency.
3. Incorporate recent aquaculture production statistics and policy reports to strengthen relevance and demonstrate urgency of improving fish farming systems.
4. Explain rationale behind chosen sample size and broodstock composition.
5. Provide detailed description of experimental controls and how environmental variability was minimized to ensure reliability and validity of the results obtained.
6. Provide discussion on potential fluctuations in physicochemical parameters over time and their possible effects on stress levels and metabolic efficiency of fish.
7. Include graphical trends or temporal analysis of water quality parameters to improve understanding of environmental stability during experimental period.
8. Compare growth performance with previous studies on similar strains to evaluate whether observed results indicate improvement or consistency with established benchmarks.
9. Discuss implications of 100% survival rate in terms of management practices, environmental conditions, and potential scalability of the production system.
10. Interpret reproductive output in relation to broodstock health and nutrition.
11. Discuss feeding strategy effectiveness during larval rearing stage.

This study provides valuable insights into the reproductive performance and economic viability of the Brazilian strain of Nile tilapia under controlled conditions. The research is methodologically

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sound and relevant to aquaculture development. However, improvements are needed in analytical depth, methodological justification, and economic evaluation. With minor revisions focusing on interpretation, structural clarity, and comprehensive cost analysis, the paper holds strong potential for publication in aquaculture and fisheries research journals. Addressing the identified weaknesses will make it suitable for publication in IJAR.

I recommend this paper for publication after minor revision.