

REVIEWER'S REPORT

Manuscript No.: IJAR-52579

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Title: Caractérisation des microorganismes isolés à partir d' une boisson traditionnelle fermentée, produite en Casamance au sud du Sénégal : le Boumkaye

Recommendation:

Accept as it isYES.....

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

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

Reviewer Name: Mr Mir Bilal

Reviewer's Comment for Publication.

Strengths of the Submission:

1. Cultural and Scientific Relevance:

The study investigates Boumkaye, a traditional millet-based fermented beverage with both nutritional and therapeutic value. Its focus on an indigenous product from Casamance adds cultural richness while addressing microbiological aspects of traditional fermentation practices.

2. Well-Defined Objective:

The research clearly states its aim: to identify and characterize the lactic acid bacteria and yeasts involved in the fermentation process. The goal is both practical and scientifically grounded, with implications for microbial ecology and food biotechnology.

3. Robust Microbiological Methods:

The combined use of culture techniques, API galleries (API 50 CH and API 20 C AUX), and MALDI-TOF MS provides a rigorous and modern approach to microbial identification. This multimodal methodology enhances the accuracy and credibility of the findings.

4. Detailed Microbial Profiling:

The identification of multiple strains of lactic acid bacteria and yeasts demonstrates thorough microbial analysis. The inclusion of both phenotypic and proteomic identification methods gives the results depth and reliability.

5. Quantitative Results:

The study presents clear microbial counts, highlighting the predominance of lactic acid bacteria (17×10^8 CFU/ml) over yeasts (1×10^8 CFU/ml) after ten days of ambient fermentation. This

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quantitative data supports the study's conclusions and provides a solid foundation for future applications.

6. **Biotechnological Potential:**

The mention of the potential use of isolated strains as starter cultures underscores the applied value of the research. This opens up avenues for standardizing and improving the production of Boumkaye while preserving its traditional essence.

7. **Effective Bilingual Presentation:**

The availability of both a French résumé and an English abstract ensures broader accessibility for an international scientific audience while maintaining regional linguistic relevance.

8. **Contribution to Food Microbiology:**

The study contributes to the understanding of spontaneous fermentation processes in traditional African beverages, aligning with global efforts to valorize and scientifically document ethnically rooted food practices.

Overall Evaluation:

This study is a well-conducted scientific inquiry into the microbial ecology of a traditional West African beverage. It combines cultural heritage with modern microbiological techniques and yields important findings that are valuable for the fields of fermentation science, food microbiology, and biotechnology. The research is rigorous, contextually grounded, and offers clear implications for future microbial applications.