



REVIEWER'S REPORT

Manuscript No.: IJAR- 57619

Title: Variability in the nutritional density of maize-based meals in the cities of Abéché, Moundou and Sarh in Chad.

Recommendation:

Accept as it is

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: **ANAPANA GOPAL**

Reviewer's Comment for Publication.

General Comments

The manuscript investigates the variability in the nutritional density of maize-based meals consumed in three minor cities of Chad: Abéché, Moundou, and Sarh. The topic is highly relevant in the context of food security, nutritional transition, and public health in low- and middle-income countries. The study provides useful regional nutritional data and attempts to connect local culinary practices with nutritional outcomes. The manuscript demonstrates practical significance and addresses an underexplored area in Chadian nutritional research.

However, despite the relevance of the topic, the manuscript requires moderate to minor revisions to improve scientific rigor, statistical interpretation, clarity of presentation, and language quality before publication consideration.

Content and Originality

The study presents an original comparative assessment of the nutritional composition of "maize boule + sauce" meals across three different agroecological zones in Chad. The regional comparison and focus on traditional meals represent a meaningful contribution to nutritional epidemiology and food security research.

Strengths:

- Addresses a clear research gap regarding regional nutritional variability.
- Combines laboratory biochemical analyses with dietary survey data.
- Discusses implications for vulnerable populations and public health nutrition.
- Provides contextualized recommendations for improving nutritional quality.

Concerns:

- The novelty could be strengthened by incorporating micronutrient analysis (iron, zinc, vitamins, etc.), not only macronutrients.
- The study focuses heavily on descriptive comparisons and lacks deeper nutritional modeling or dietary adequacy assessment.
- The hypothesis is stated clearly, but the manuscript could better explain its theoretical framework and broader implications for nutrition policy.

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Technical Quality

The technical methodology is generally acceptable and demonstrates a structured experimental approach. The use of AOAC-standardized methods (Kjeldahl, Soxhlet, Bertrand, desiccation) strengthens the analytical reliability of the biochemical measurements.

Positive Aspects:

- Clear description of study sites and sampling procedures.
- Laboratory analyses follow recognized protocols.
- Statistical analyses using ANOVA, Tukey's test, and Kruskal-Wallis tests are appropriate.
- Triplicate analyses improve reliability.

Minor Technical Issues:

1. Sample Size Limitation

- Although 600 households were surveyed, biochemical analyses appear based on only three prepared samples per city (n=3), which is insufficient for strong statistical generalization.

2. Energy Value Concerns

- The reported energy values (200–235 kcal/portion) seem unusually low for a complete staple meal portion of 400g total weight. The authors should verify calculations and clarify whether values are per 100g or per serving.

3. Macronutrient Data Consistency

- The carbohydrate percentages reported for maize balls (3–4%) appear unexpectedly low compared to typical maize-based foods. This requires clarification regarding fresh-weight basis calculations.

4. Absence of Micronutrient Analysis

- Since nutritional security is emphasized, inclusion of micronutrient profiles would substantially strengthen the study.

5. Figure Presentation

- Figure 1 is referenced but not properly displayed or described in detail.

6. Limited Statistical Depth

- Multivariate analysis or regression models could improve interpretation of regional variability.

Language and Presentation

The manuscript is understandable but requires extensive English language editing.

Observed Issues:

- Numerous grammatical errors and awkward sentence constructions.
- Inconsistent tense usage.
- Formatting inconsistencies throughout tables and text.
- Several French-English translation artifacts are present.
- Some sentences are excessively long and repetitive.

Examples include:

- “The same basic meal thus presents contrasting nutritional profiles...” could be simplified for clarity.
- Spacing and punctuation around citations and percentages are inconsistent.

Professional proofreading by a native English editor is strongly recommended.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

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Structure and Organization

The manuscript follows a conventional scientific structure and is generally well organized.

Strengths:

- Logical progression from introduction to conclusion.
- Clear separation of methodology, results, discussion, and conclusion.
- Objectives and hypothesis are explicitly stated.

Areas for Improvement:

- Numbering inconsistencies occur in section headings (e.g., "2.3" followed by "3. Discussion").
- Tables should be formatted more professionally.
- Figure legends require clearer explanation.
- Some discussion paragraphs are excessively long and repetitive.
- A concise "Limitations" subsection should be added separately.

References and Citations

The manuscript includes a substantial number of references from international and regional literature.

Positive Aspects:

- Inclusion of FAO, WHO, and AOAC references increases credibility.
- Literature covers food security, complementary feeding, and African nutritional studies.

Concerns:

- Citation formatting is inconsistent.
- Some references appear unrelated to the manuscript's focus.
- Several references are outdated.
- DOI formatting and journal style need standardization.
- Reference numbering and spacing require correction.

Examples:

- Some citations are incomplete or improperly aligned.
- Certain French references may need translation consistency depending on journal requirements.

Overall Recommendation

The manuscript addresses an important nutritional and public health issue with regional relevance and practical implications for Chad. The study demonstrates originality through its comparative regional approach and use of laboratory nutritional analyses.

However, significant improvements are required in:

- Statistical robustness
- Data interpretation
- Energy calculation clarification
- Language quality
- Presentation and formatting
- Scientific depth

The study has publication potential after substantial revision.

Final Decision:

Minor Revision Required