

5.5 Statistical analysis

The data obtained from the results of the experiments were subjected to analysis of variance using IBM Statistical Package for the Social Sciences (SPSS) version 27. The means of the three replicates were separated from other treatment for significant difference using Duncan's multiple range test.

Abbreviations

Baseline: Flour before storage

TLP: Transparent Low-Density Polyethylene

THP: Transparent High-Density Polyethylene

BLP: Black Low-Density Polyethylene

BHP: Black High-Density Polyethylene

DPPH: 2,2-Diphenyl-1-Picrylhydrazyl

Authors' Contributions

FKO: Conceptualization, Methodology, Validation, Supervision. OSS: Formal analysis, Data curation, Writing—original draft. JI: Methodology, Validation, Formal analysis. OVA: Project administration, finance. MAA: Writing—review & editing. All authors read and approved the submitted version.

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Ethical approval

Not applicable.

Consent to participate

Not applicable.

Consent to publication

Not applicable.

Availability of data and materials

The datasets that support the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest Disclosure

The authors affirm that this research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

References

- Abiola A., Adégbola Y.P., Zandjanakou-Tachin M., Crinot G.F., and Biaou G., 2024, Toward tailored interventions in plantain (*Musa paradisiaca* L.) industry: insights from heterogeneity and constraints to plantain-based cropping systems in South-Benin, *Social Sciences & Humanities Open*, 9: 100895.
<https://doi.org/10.1016/j.ssaho.2024.100895>
- Ajijolakewu K.A., Ayoola A.S., Agbabiaka T.O., Zakariyah F.R., Ahmed N.R., Oyedele O.J., and Sani A., 2021, A review of the ethnomedicinal, antimicrobial, and phytochemical properties of *Musa paradisiaca* (plantain), *Bulletin of the National Research Centre*, 45(1): 86.
<https://doi.org/10.1186/s42269-021-00549-3>
- Ali A., Kumar R.R., Vinutha T., Singh T., Singh S.P., Satyavathi C.T., and Goswami S., 2022, Grain phenolics: critical role in quality, storage stability and effects of processing in major grain crops—a concise review, *European Food Research and Technology*, 248(8): 2197-2213.
<https://doi.org/10.1007/s00217-022-04026-7>
- Anand R., Mohan L., and Bharadvaja N., 2022, Disease prevention and treatment using β -carotene: the ultimate provitamin A, *Revista Brasileira de Farmacognosia*, 32(4): 491-501.
<https://doi.org/10.1007/s43450-022-00262-w>
- Awol S.M., Kuyu C.G., Bereka T.Y., and Abamecha N., 2024, Physicochemical stability, microbial growth and sensory quality of refined wheat flour as affected by packaging materials during storage, *Journal of Stored Products Research*, 105: 102217.
<https://doi.org/10.1016/j.jspr.2023.102217>
- Emmanuel J.K., Mtashobya L.A., and Mgeni S.T., 2025, Potential contributions of banana fruits and residues to multiple applications: an overview, *Natural Product Communications*, 20(2): 1934578X251320151.
<https://doi.org/10.1177/1934578X251320151>