

Review Form 1.7

Journal Name:	Asian Journal of Soil Science and Plant Nutrition
Manuscript Number:	Ms_AJSSPN_118497
Title of the Manuscript:	INFLUENCE OF SIMULATED EROSION ON SOIL PROPERTIES AND MAIZE YIELD IN THE SOUTHERN GUINEA SAVANAH ZONE OF NIGERIA II.
Type of the Article	

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**Lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (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)
<p><u>Compulsory</u> REVISION comments</p> <ol style="list-style-type: none"> 1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title) 3. Is the abstract of the article comprehensive? 4. Are subsections and structure of the manuscript appropriate? 5. Do you think the manuscript is scientifically correct? 6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<ol style="list-style-type: none"> 1. Yes, this manuscript may contribute to the academic dialogue on soil erosion and its impact on agriculture, offering both theoretical and practical insights that could help to mitigate one of the pressing environmental issues affecting crop productivity in tropical regions. 2. The title of the article, "Influence of Simulated Erosion on Soil Properties and Maize Yield in the Southern Guinea Savannah Zone of Nigeria II," is quite informative and appropriate for the subject matter. 3. The abstract of the article, while informative, has a few areas that could be improved for better clarity and impact. It still lacks of detailed information on how soil properties were affected by erosion, which is crucial for understanding the full impact of topsoil loss. In addition, it will be better by providing some background on the importance of the study, such as the typical effects of erosion in the region and why this research is significant. The broader implications of the findings are missing as well. Which would be valuable for informing soil conservation practices and policy decisions. 4. Introduction: The introduction is thoroughly researched and leverages a strong array of citations to highlight the significance of soil degradation in the context of West Africa. It effectively explains the broader environmental challenges associated with soil erosion, particularly in areas with Alfisols, which are prone to various degradation processes under continuous cultivation. The extensive referencing not only supports the claims made but also establishes a solid foundation for the importance of the study. This background sets the stage for examining the specific impacts of topsoil loss, making it clear why such research is crucial for sustainable agricultural practices. However, some parts still need to improve. There is noticeable repetition and some dilution of the main topic due to an overly broad discussion of soil degradation issues. For example: <ul style="list-style-type: none"> - Multiple Mentions of Soil Degradation Impacts: The introduction mentions the consequences of soil degradation several times across different paragraphs, with similar impacts listed each time. For example: <ul style="list-style-type: none"> o The third sentence of the first paragraph states, "It is dynamic and prone to rapid degradation with land misuse," which is a general statement about soil degradation. o Later, another general statement is made: "Soil degradation by accelerated erosion is a serious problem, especially in developing countries of the tropics and sub-tropics." o Further on, severe soil degradation impacts are detailed again, noting crusting, sealing, rapid drying and poor infiltration. - Repetitive Discussion on Soil Erosion: The discussion on soil erosion's impacts on soil quality and productivity is reiterated with slight variations: <ul style="list-style-type: none"> o "Soil erosion exacerbates soil degradation and vice versa," and similar sentiments appear again with "In some cases, decline in soil quality especially the weakening of structural units precedes erosion." o These points are reiterated in a later discussion about soil erosion leading to 	

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	<p>reduced potential soil productivity and the effects on agricultural crops.</p> <ul style="list-style-type: none">- Discussion on Tolerable Soil Loss: The concept of tolerable soil loss is defined twice with similar definitions provided by different authors, which could be streamlined into a single, more comprehensive explanation:<ul style="list-style-type: none">o "Soil loss tolerance is defined as the maximum acceptable level of soil loss from an area which will allow a high level of productivity to be maintained indefinitely."o This is followed by another definition, "Mannering (1981) defines the term soil loss tolerance (T value)..." <p>Furthermore, the linkage between the detailed background on soil erosion and the specific objectives of the study is somewhat tenuous and abrupt. Moreover, the introduction lacks a clear statement of the research gap this study aims to fill, which is essential for articulating its unique contribution. Also, updating some references or including more recent studies could provide a more current perspective on the topic, ensuring the relevance of the research in contemporary discussions about soil management and conservation.</p> <p>Materials and Methods: This section of the manuscript on topsoil removal's impact on maize productivity provides an essential overview but lacks several critical details necessary for replication and validation of the results. Key weaknesses include inadequate descriptions of plot setup and replication, specific soil and plant sampling methodologies and environmental conditions during the study period. Other than this, the section omits detailed statistical analysis information, such as model assumptions and response variables, and relies too heavily on a previous paper for methodological details, which may not be accessible to all readers. Improving these areas by adding comprehensive descriptions and clarifications would enhance the section's clarity, completeness and the overall robustness of the study.</p> <p>Results and Discussion: (a) <i>Plant Height and Leaf Area Index (LAI):</i> The results detailing significant reductions in plant height and LAI with increasing topsoil removal are clear, yet the discussion lacks depth regarding the biological or soil mechanisms influencing these reductions. Need to enhance by discussing potential physiological responses of maize to reduced soil depth and quality, possibly supported by references to similar studies.</p> <p>(b) <i>Cob Length, Cob Weight, Number of Grains per Cob, and Stover Yield:</i> Significant reductions in these parameters are noted, but the discussion could be better if compare with existing literature. Expanding the discussion to include benchmarks from other studies under varying conditions of soil erosion would give more understanding of the impact and scale of the observed findings.</p> <p>(c) <i>Grain Yield:</i> This parameter's discussion is well-quantified yet lacks detailed consideration of agronomic or environmental factors that might affect the results. Need to add some discussion on the variability of yields across different years and sites, and how environmental conditions or management practices might influence these outcomes, would provide richer insights. Discussing maize variety resilience to soil degradation conditions also needed.</p> <p>(d) <i>Correlation and Regression Analyses:</i> The manuscript mentions significant correlations and regression models but does not fully explore their implications or practical applications. Including the actual regression equations, discussing the models' strengths and interpreting practical implications of the correlations.</p> <p>(e) <i>Interaction Effects:</i> The discussion of interaction effects is complex and</p>	
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	<p>somewhat confusing. Need to clarify or illustrate how these interactions affect the study's overall findings, making the results more accessible and understandable.</p> <p>(f) <i>Soil Physical and Chemical Properties</i>: References to previous papers for methodologies and detailed results on soil properties may limit reader understanding for those without access to these papers. Conclusion: It effectively summarizes key findings about the significant reductions in seedling emergence, plant height, stover yield and seed yield due to topsoil removal, particularly emphasizing the impact at 10 cm depth. However, it could be better by more explicitly linking these findings to the initial study objectives, discussing the broader implications for soil conservation, suggesting specific, actionable conservation practices and proposing directions for future research. A revised version could include clearer connections to global soil conservation efforts, detail the practical applications of the recommended practices and suggest further studies to explore the efficacy of various soil conservation strategies under different environmental conditions.</p> <p>5. Yes, it is scientifically correct based on standard criteria for experimental design and statistical analysis in agricultural research. Nonetheless, enriching the text with more detailed methodological transparency and broader contextual comparisons would strengthen its scientific robustness and relevance.</p> <p>6. No, none of the references are from the last five years. It is necessary to update at least 30% of them with more recent sources.</p>	
<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>Moderate</p>	
<p>Optional/General comments</p>		

PART 2:

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

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