

Review Form 3

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| Journal Name: | Asian Journal of Soil Science and Plant Nutrition |
| Manuscript Number: | Ms_AJSSPN_124681 |
| Title of the Manuscript: | FYM superimposed with inorganic fertilizer: enhanced wheat yield, and soil quality in degraded red Alfisol |
| Type of the Article | |

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PART 1: Review Comments

| Compulsory REVISION comments | Reviewer's comment | Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i> |
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| <p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p> | <ol style="list-style-type: none"> 1. Relevant Research Topic: The manuscript addresses a critical issue of soil nutrient deficiency and the declining productivity in degraded soils, particularly red Alfisols. The integration of organic (FYM) and inorganic fertilizers is a well-timed approach, offering solutions for sustainable agriculture, which aligns with global efforts toward enhancing soil fertility and food security. 2. Comprehensive Experimental Setup: The study is well-structured, utilizing nine different treatment combinations that include both organic and inorganic fertilizers. This allows for an extensive comparison of how various nutrient applications affect wheat yield, soil quality, and nutrient uptake. 3. Clear Presentation of Results: The manuscript provides detailed experimental results, including data on wheat yield, soil pH, available nitrogen, phosphorus, potassium, and organic carbon. The use of tables to summarize data is effective, and the results are statistically significant, supporting the claims made by the authors. 4. Application to Sustainable Agriculture: The study's emphasis on using FYM (Farm Yard Manure) for improving soil fertility and crop yield in degraded land has practical implications. It reinforces the importance of sustainable practices in farming and nutrient management. <hr/> <p>Areas for Improvement:</p> <ol style="list-style-type: none"> 1. Introduction - Expand the Theoretical Framework: While the introduction provides relevant context, it could benefit from an expanded discussion of previous studies that have explored similar nutrient management techniques. For example, including a broader literature review comparing the effects of FYM and inorganic fertilizers on various crop types and soils would offer a more thorough theoretical foundation for the study. Additionally, the role of FYM in addressing micro-nutrient deficiencies could be elaborated further. 2. Research Gap Clarification: The research gap could be more explicitly stated. 3. Statistical Analysis - More Detailed Explanation: While the statistical methods (ANOVA and LSD) are appropriate, the manuscript lacks detailed explanations of the statistical findings in some areas. For example, the differences between treatments could be better contextualized in terms of practical implications. Additionally, discussing effect sizes or confidence intervals would provide a deeper understanding of the magnitude and reliability of the observed effects. 4. Discussion - Further Interpretation of Results: The discussion section could be more comprehensive. It would benefit from a deeper interpretation of how the combination of FYM and inorganic fertilizers enhances crop yield and soil quality beyond stating the results. For instance: <ul style="list-style-type: none"> ○ Mechanistic Insights: Explaining how FYM improves soil structure and nutrient cycling over time would enhance understanding. Mechanistic explanations related to microbial activity, soil organic matter decomposition, and nutrient availability should be emphasized. ○ Long-Term Implications: Discussing potential long-term implications of the integrated nutrient management approach for soil health and sustainability would add depth. How does this approach influence future cropping cycles or long-term soil fertility? 5. Conclusion - Broader Implications and Future Research: The conclusion section is concise but could be expanded to include broader implications of the study's findings. Specifically: <ul style="list-style-type: none"> ○ Policy Implications: The study's potential to inform agricultural policy on sustainable nutrient management in developing countries could be highlighted. ○ Future Research Directions: Suggesting future studies on the scalability of this nutrient management approach or its applicability to other crops and soil types | |

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| | <p>would strengthen the manuscript's impact. Additionally, addressing the role of climate variability in the performance of these nutrient management strategies would be relevant.</p> <p>6. Clarification of Correlation Analysis: The correlation analysis between soil properties and plant characteristics is significant but not well explained. The manuscript should provide more context on why these correlations are important and how they influence the study's outcomes. For example, explaining the relationship between soil organic carbon and nitrogen uptake in practical terms would help readers understand its importance.</p> <p>7. Presentation of Figures and Tables: Some figures and tables could be more visually engaging. For example, adding graphs to illustrate trends in yield or soil nutrient availability across treatments would help make the data more accessible. Clearer captions explaining the key findings in each figure would also improve readability.</p> <hr/> <p>Conclusion: The manuscript presents a well-executed study on the combined effects of FYM and inorganic fertilizers on wheat productivity and soil quality in red Alfisols. However, improvements can be made in expanding the literature review, clarifying the research gap, providing more detailed statistical explanations, and offering deeper interpretations of the results. Additionally, enhancing the discussion of the study's broader implications and refining the visual presentation of data would strengthen the overall impact of the manuscript. of sustainable practices in farming and nutrient management. combination of FYM and inorganic fertilizers enhances crop yield and soil quality beyond stating the results. For instance:</p> | |
| <p>Is the title of the article suitable? (If not please suggest an alternative title)</p> | <p>yes</p> | |
| <p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p> | <p>yes</p> | |
| <p>Are subsections and structure of the manuscript appropriate?</p> | <p>Yes appropriate</p> | |
| <p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p> | <p>Provided in the start</p> | |
| <p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. =</p> | <p>yes</p> | |

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| Minor REVISION comments | | |
| Is the language/English quality of the article suitable for scholarly communications? | yes | |
| <u>Optional/General</u> comments | | |

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) |
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| Are there ethical issues in this manuscript? | <i>(If yes, Kindly please write down the ethical issues here in details)</i> | |

Reviewer Details:

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