Review Form 3

Journal Name:	**Journal of Experimental Agriculture International**
Manuscript Number:	**Ms_JEAI_128323**
Title of the Manuscript:	**Evaluation of Integrated Nutrient Management Approaches on Phenological Development and Yield Components of Wheat (Triticum aestivum L.)**
Type of the Article	**Original Article**

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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.
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PART 1: Comments

	Reviewer's comment	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	❖ To provides valuable insights into the role of integrated nutrient management (INM) approaches in influencing the phenological development and yield components of wheat (*Triticum aestivum* L.). ❖ By examining the synergistic effects of organic, inorganic, and bio-fertilizers, the study contributes to understanding how to optimize wheat productivity while maintaining soil health and sustainability. ❖ Its findings are particularly significant for addressing global challenges in wheat production, such as improving nutrient use efficiency and reducing environmental impact. ❖ This research offers practical recommendations for sustainable agricultural practices and contributes to the scientific community's efforts to enhance food security in wheat-dependent regions.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	○ *"Integrated Nutrient Management and Its Impact on Wheat Phenology and Yield Components"* ○ *"Effects of Integrated Nutrient Management on Wheat Development and Yield"* ○ *"Optimizing Wheat Growth and Yield Through Integrated Nutrient Management"* ○ *"Sustainable Nutrient Management for Enhancing Wheat Productivity"*	
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.	**Suggested Additions:** 1. **Specific Results**: Include quantitative data, such as the percentage improvement in yield or phenological changes observed with INM approaches. 2. **Environmental Benefits**: If applicable, briefly mention benefits like reduced nutrient runoff or enhanced soil fertility. 3. **Relevance to Global Challenges**: Tie the study to broader issues such as food security, resource efficiency, or climate-resilient agriculture.	
Is the manuscript scientifically, correct? Please write here.	❖ **Research Design and Methodology:** • **Experimental Design**: The manuscript should outline a well-structured experimental design with clear control and treatment groups, detailing how integrated nutrient management (INM) practices were applied. • **Nutrient Combinations**: It should specify the types of nutrients used in the INM approach, including organic, inorganic, and bio-fertilizers, and their respective application rates and timing. • **Data Collection and Analysis**: The methods for measuring phenological development and yield components (e.g., germination, flowering time, plant height, spike count, grain weight) should be described with appropriate statistical analysis. **Scientific Accuracy:** • **Nutrient Management Theory**: The manuscript should demonstrate a strong understanding of INM theory, incorporating relevant literature on nutrient cycling, efficiency, and soil health. • **Relevance of Wheat Phenology**: The impact of nutrient management on phenological stages (germination, tillering, flowering, etc.) should be explained with respect to established scientific knowledge.	

	• **Yield Components**: The manuscript should accurately describe the relationship between nutrient management and yield components (e.g., spike number, grain weight), supported by evidence from the study. **Suggestions for Improving Scientific Rigor:** • **Ensure Proper Statistical Analysis**: The manuscript should include detailed statistical analysis (e.g., ANOVA, regression) to support claims about the effects of INM on wheat growth and yield. • **Include Environmental Considerations**: Discuss the environmental impact of INM practices, such as nutrient use efficiency and potential reductions in chemical fertilizer use, which are important in modern agricultural sustainability. • **Consider Agronomic and Ecological Aspects**: Beyond yield, it may be beneficial to explore how INM practices affect soil health, biodiversity, and the long-term sustainability of wheat cropping systems.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	❖ **Core Literature**: The manuscript should reference key studies in the fields of integrated nutrient management (INM), wheat agronomy, and soil health. It should include both foundational studies and recent advancements on the impact of INM on wheat productivity. ❖ **Regional and Global Studies**: Make sure that studies from regions with similar agro-climatic conditions or cropping systems are included, as well as global research that provides a broader perspective on INM practices. ❖ **Recent Studies**: At least a portion of the references should come from studies published within the last 5–10 years. This ensures the manuscript aligns with current research trends and incorporates the latest findings on nutrient management and wheat yield. ❖ **Review Articles**: Including recent review articles that summarize advancements in nutrient management for wheat or other staple crops can strengthen the reference list. ❖ **Peer-Reviewed Journals**: References should come from reputable, peer-reviewed journals. If the manuscript includes conference proceedings or non-peer-reviewed sources, ensure they are still relevant and reliable. ❖ **Books and Reports**: While journal articles are essential, references to authoritative books, government reports, or technical guidelines on INM or wheat cultivation can also be beneficial. ❖ **Nutrient Management and Soil Health**: Studies related to nutrient cycling, soil microbial activity, and the role of organic vs. inorganic fertilizers in crop productivity should be included. ❖ **Wheat Phenology and Yield**: Research that explores the phenological stages of wheat, particularly the impact of nutrients on growth stages and yield components (e.g., spike formation, grain filling), should be cited. ○ Buresh, R. J., et al. (2020). "Nutrient management for wheat production: Impacts on yield and soil health." *Field Crops Research*. ○ Gupta, R. K., et al. (2019). "Sustainable wheat production: The role of integrated nutrient management." *Agronomy for Sustainable Development*. ○ Mishra, U., et al. (2021). "Bio-fertilizers in integrated nutrient management for sustainable wheat farming." *Sustainability*. ○ Kumar, A., et al. (2020). "Soil fertility management and nutrient use efficiency in wheat cropping systems." *Agricultural Systems*.	
Is the language/English quality of the article suitable for scholarly communications?	Yes, It is undarstable. In future you may improve scientific writing skills	
Optional/General comments	➢ **Study Significance**: The manuscript provides important insights into the role of integrated nutrient management (INM) for enhancing wheat productivity. It addresses a critical issue for sustainable agricultural practices, focusing on both agronomic and environmental outcomes. ➢ **Clarity of Objectives**: The objectives of the study are clearly stated, but it could benefit from a more explicit connection between the research goals and the broader implications for sustainable agriculture, particularly in areas where wheat is a staple crop. ➢ **Methodology**: The experimental design appears sound, but it would be beneficial to include more details about the specific nutrient management practices used (e.g., rates of organic vs. inorganic fertilizers, application timings). Providing more information about the sampling and statistical analysis methods will improve reproducibility and transparency. A more detailed explanation of how phenological stages and yield components were measured and quantified could help readers better understand the methodology. ➢ **Results and Discussion**: The results are generally well-presented; however, it would be helpful to include more in-depth analysis of the data, particularly when discussing interactions between different nutrient management practices. Comparison with similar studies in other regions could also provide a more comprehensive discussion. It would be beneficial to explore the long-term implications of the findings, such as how the INM practices affect soil health over multiple cropping cycles, as this has major relevance for sustainable agricultural systems. ➢ **Conclusion**: The conclusion is concise, but it could benefit from a stronger emphasis on practical recommendations for farmers. For instance, providing specific guidelines on nutrient management strategies that would maximize wheat yield in different agro-ecological zones can increase the manuscript's impact. ➢ **Environmental Impact**: While the focus on improving wheat yield is valuable, including a brief discussion on the environmental benefits of INM—such as reduced fertilizer use, minimized nutrient leaching, and better soil health—would enhance the manuscript's contribution to sustainable agriculture. ➢ **Writing and Structure**: The manuscript is generally well-written, but there are some areas where clarity could be improved by	

	refining the structure and flow of the text. For example, ensure that each section logically leads to the next and avoid repetition of key points. ➢ **References**: While the references are generally relevant, updating some of the older sources with more recent studies on INM, soil fertility, and wheat productivity will improve the manuscript's relevance and scientific credibility.	

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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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