

Review Form 3

Journal Name:	Journal of Advances in Biology & Biotechnology
Manuscript Number:	Ms_JABB_125546
Title of the Manuscript:	Response of seed priming and nutrient management on green gram growth and yield-related attributes (Vigna radiate L Wilczek).
Type of the Article	

General guidelines for the 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 guidelines for the Peer Review process, reviewers are requested to visit this link:

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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>
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.	While the research addresses an important crop, green gram, and investigates seed priming and nutrient management, the manuscript fails to demonstrate clear and significant contribution. Seed priming with KNO ₃ and the effects of nutrient management on leguminous crops are extensively studied topics. The manuscript does not sufficiently distinguish itself from previous research on similar crop species or conditions, or its unique contribution to the community. The study needs to justify why these specific treatments, particularly in combination, represent a novel approach or why the results are significant including their local and broader context. Recommendation: The authors should clearly articulate how this study advances the existing knowledge on seed priming or nutrient management, especially considering the extensive literature on similar crops. The research should be situated within the latest developments in the field, and the manuscript should include a comparison with cutting-edge studies published in recent journals. More emphasis should be placed on addressing how this study contributes new insights or techniques in green gram management; also in the local and broader context.	
Is the title of the article suitable? (If not please suggest an alternative title)	The title appropriately reflects the manuscript's focus, but it could be more precise. The phrase "Response of Seed Priming and Nutrient Management on Growth and Yield-related Attributes" is quite broad and lacks specificity in conveying the actual treatments and results. Suggested Title: <i>Effects of KNO₃ Seed Priming and Fertilizer Management on Growth and Yield of Green Gram (Vigna radiata L.) in a Temperate Agro-climate.</i>	

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<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>The abstract provides a general overview of the study, but it lacks key methodological details and specific numerical results. It is important for the abstract to clearly describe the experimental design and treatments used, as well as to present a broader range of data beyond just yield. This will help readers quickly understand the scope and findings of the study.</p> <p>Critical Points:</p> <ul style="list-style-type: none"> • The abstract should mention the factorial randomized complete block design (RCBD) and include specifics about the different levels of treatments tested, such as the exact combination of KNO₃ priming and nutrient management. • The results should go beyond reporting yield to include other important parameters such as pod clusters per plant, seed weight, and the statistical significance of the findings. • The conclusion is brief and should emphasize why the findings are significant within the context of green gram cultivation and nutrient management. <p>Suggested Improvements:</p> <ul style="list-style-type: none"> • Clearly state the experimental design and treatments at the beginning. • Include more quantitative data in the results section, covering a wider range of growth and yield attributes beyond just yield per hectare. • Revise the conclusion to reflect the broader implications of the study for agricultural practice, especially in resource-limited settings or similar agro-climatic regions. 	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>The manuscript is generally well-structured, with clearly defined sections for the introduction, methods, results, and discussion. However, the content within these sections needs significant improvement in terms of clarity and depth.</p> <p>Critical Points:</p> <ul style="list-style-type: none"> • Introduction: The introduction provides an adequate context but lacks depth in discussing recent literature. It is over-reliant on studies that are more than 10 years old, which reduces its relevance. Additionally, the authors do not clearly define the research gap or the specific novelty of their study. There is also insufficient discussion of alternative seed priming agents and nutrient management strategies that could have been tested, which would help justify the choice of KNO₃ and the specific nutrient management regimes. <p>Recommendation:</p> <ul style="list-style-type: none"> ○ Expand the introduction to include a review of more recent studies (within the last 5 years) that explore similar seed priming and nutrient management approaches in legume crops. ○ Clearly define the research gap by explaining what has not been addressed in previous studies and why this study is necessary. Focus on the novelty of the treatments or the significance of the specific environmental conditions. • Methods: The methods section is generally adequate but lacks critical details, particularly about the seed priming process. The authors do not specify the duration of priming, the environmental conditions under which priming occurred, or the exact method used for applying KNO₃. The description of the nutrient management techniques is also somewhat vague. The authors should provide more precise information about how the fertilizers were applied (e.g., soil vs. foliar application) and explain why these specific rates were chosen. <p>Recommendation:</p> <ul style="list-style-type: none"> ○ Include precise details about the seed priming process, including the duration and environmental conditions. ○ Clarify how the nutrients were applied and provide a rationale for selecting the specific fertilizer rates used in the study. • Results: The results section presents the data but does not offer sufficient analysis or interpretation. The authors report statistical significance without fully exploring the underlying biological mechanisms that explain the differences between treatments. For example, the superior performance of KNO₃-primed seeds is mentioned, but there is no discussion of how KNO₃ influences physiological processes like stress tolerance, nitrogen assimilation, or root development. <p>Recommendation:</p> <ul style="list-style-type: none"> ○ The results should include more detailed analysis, particularly on the biological or physiological mechanisms driving the observed differences. The authors should provide hypotheses for why specific treatments outperformed others and engage more with the relevant literature to contextualize their findings. • Discussion: The discussion is superficial and lacks critical engagement with the results. The authors provide a descriptive summary of the findings without offering much interpretation or comparison with existing studies. There is little to no discussion of potential limitations, such as the environmental variability that might affect the generalizability of the findings. Additionally, the authors do not explore the broader implications of their results for agricultural practice, which reduces the overall impact of the discussion. <p>Recommendation:</p> <ul style="list-style-type: none"> ○ The discussion should be expanded to critically evaluate the results in the context of existing literature. The authors should explore possible explanations for their findings and provide more in-depth interpretations. 	

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	<ul style="list-style-type: none"> Discuss potential limitations of the study, such as how environmental conditions in the region may differ from other growing regions and suggest future research directions to address these limitations. 	
<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>While the experimental design (randomized complete block design) is technically sound, there are several critical issues that undermine the manuscript's overall scientific rigor:</p> <ul style="list-style-type: none"> The lack of detailed physiological explanations for the results limits the study's scientific impact. For example, the manuscript does not explain how KNO₃ priming enhances plant growth beyond general statements about stress tolerance. The statistical analysis is insufficiently detailed. While ANOVA is used to report significant differences between treatments, there is no mention of post-hoc tests or comparisons of specific treatment means, which would provide a clearer understanding of the differences. The conclusion that KNO₃ priming is beneficial is not well-supported by a thorough discussion of mechanisms or alternatives. <p>Recommendation:</p> <ul style="list-style-type: none"> Provide more in-depth physiological explanations for the results, particularly regarding how seed priming with KNO₃ influences plant metabolism, nutrient uptake, or stress tolerance. Use post-hoc tests following ANOVA to clarify specific differences between treatments. Report these findings in a more detailed manner to ensure that the conclusions are fully supported by the data. 	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> <p>:</p>	<p>The references are not sufficient or up-to-date. Many citations are more than a decade old, and there is a clear lack of engagement with recent research on seed priming, nutrient management, and legume crop yield optimization.</p> <p>Recommendation:</p> <ul style="list-style-type: none"> Update the reference list to include more recent studies (from the last 5 years) on seed priming, KNO₃ application, and nutrient management in leguminous crops. Incorporating recent publications will improve the manuscript's credibility and scientific relevance. 	
<p><u>Minor</u> REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The manuscript's language is serviceable but requires significant revision for clarity, consistency, and grammatical accuracy. There are numerous awkward phrases and inconsistencies in tense that detract from the overall readability of the manuscript. A professional proofreading service is highly recommended.</p> <p>Examples of Issues:</p> <ul style="list-style-type: none"> The sentence: "Seed priming techniques are used to improve germination to reduce the time between sowing and emergence..." can be rewritten more clearly as: "Seed priming improves germination by reducing the time between sowing and emergence, especially under adverse environmental conditions." The manuscript frequently shifts between past and present tense in the results and discussion sections, creating confusion. <p>Recommendation:</p> <ul style="list-style-type: none"> The authors should revise the manuscript for grammatical correctness and improve sentence structure. Consistency in tense should be maintained throughout, particularly when discussing results and methodology. 	
<p><u>Optional/General</u> comments</p>	<ul style="list-style-type: none"> The tables are clear, but the manuscript would benefit from graphical representations of the data. Including bar charts or line graphs to represent key findings (such as yield per hectare or the number of pods per cluster) would make the data more accessible and enhance the manuscript's overall presentation. The conclusion is overly simplistic and should be expanded to discuss the broader implications of the findings for agricultural practice. The authors should also suggest future research directions to explore the interaction between seed priming and nutrient management further. 	

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>	

Reviewer Details:

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