

Review Form 3

Journal Name:	Journal of Advances in Biology & Biotechnology
Manuscript Number:	Ms_JABB_126315
Title of the Manuscript:	Influence of Nano sized Silica on Plant Growth and Development Through Molecular and Physio-Biochemical Changes: A Review
Type of the Article	Review 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.	This manuscript addresses the integration of nano-sized silica in agriculture, discussing its impact on plant growth and development through molecular and biochemical changes. While the topic is relevant, the manuscript lacks a clear focus on how nano-silica directly benefits specific plant species in practical scenarios. It would be beneficial to add case studies or specific results highlighting real-world applications. This will help establish stronger relevance to the scientific community and emphasize the manuscript's contribution to sustainable agriculture.	
Is the title of the article suitable? (If not please suggest an alternative title)	The current title, "Influence of Nano-sized Silica on Plant Growth and Development Through Molecular and Physio-Biochemical Changes: A Review," is descriptive. However, it could be refined for clarity. Consider using "A Comprehensive Review of Nano-sized Silica's Effects on Plant Growth, Molecular Responses, and Biochemical Changes" to provide better context and focus	
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.	The abstract, while covering key areas, is overly generic. It should: <ol style="list-style-type: none"> 1.Include specific findings or numerical data demonstrating nano-silica's effectiveness in enhancing plant growth or stress tolerance. 2.Define the scope more precisely by stating the types of plants reviewed and the methods used to assess nano-silica's effects. 3.Clarity the primary objective of the review—whether it's to promote nano-silica as a sustainable solution or to assess its limitations. 	
Are subsections and structure of the manuscript appropriate?	The subsections are generally appropriate, but there are a few structural concerns: <ol style="list-style-type: none"> 1. "Nanotechnology and their applications" section should be split into separate subsections to distinguish between applications in abiotic stress, biotic stress, and genetic responsiveness. This will enhance readability and flow. 2. "Silicification and polymerization process" contains repetitive information. Revise for conciseness and remove redundant explanations, focusing more on mechanisms specific to silica's interaction with plant tissues. 3. Figures and tables are not well-integrated within the text. References to figures and tables should be made more frequent to support the narrative. 	

Review Form 3

<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>The manuscript contains scientifically accurate information, but several issues compromise its technical soundness:</p> <ol style="list-style-type: none"> 1.Mechanisms of nano-silica action are described inconsistently. The section on molecular pathways, such as the roles of Lsi genes, needs clarification regarding specific pathways activated or suppressed by nano-silica. 2.Biochemical interactions are insufficiently described. The manuscript should expand the discussion on how nano-silica impacts enzyme activities (e.g., peroxidase, polyphenol oxidase) and how these effects differ based on nano-silica concentrations and plant types. 3. Inconsistent data reporting: Some sections, such as “Morphological, Physiological, and Biochemical changes,” present results without adequate evidence or citations. Ensure that all data is well-supported by credible studies and accurately reflects existing research findings. 	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. =</p>	<p>While the references are mostly sufficient, the inclusion of more recent studies (2023-2024) is necessary. Specifically, consider adding recent advances in:</p> <ol style="list-style-type: none"> 1.Gene regulation by nano-silica. 2.Environmental impacts of nano-silica applications. 3.Advanced nanotechnology techniques in agriculture. 	
<p><u>Minor REVISION</u> comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>Language/English Quality: The manuscript requires extensive language editing to enhance readability and scholarly communication. Common issues include:</p> <ol style="list-style-type: none"> 1.Grammatical errors: Sentences are often long and confusing, with misplaced modifiers. Example: “Nano-sized silica is also used to strength the plant physiologically and sustain in biotic and abiotic stress.” This should be revised to: “Nano-sized silica strengthens plants physiologically, enhancing their resilience to both biotic and abiotic stresses.” 2.Inconsistent terminology: Terms like “silicification,” “silica deposition,” and “bio-silicification” are used interchangeably, causing confusion. Define these terms clearly and ensure consistent usage throughout the manuscript. 3.Improper sentence structure: Many sentences contain awkward phrasing, making them hard to follow. Consider a thorough language review by a native English speaker to ensure clarity and coherence. 	
<p><u>Optional/General</u> comments</p>	<p>The manuscript offers significant insights into the potential of nano-silica in agriculture. However, a more critical analysis of its limitations and potential risks is required. Include a subsection discussing:</p> <ol style="list-style-type: none"> 1.Environmental risks, such as potential toxicity or nanoparticle accumulation in soil and water systems. 2.Economic feasibility—whether nano-silica applications are cost-effective compared to traditional fertilizers or treatments. <ul style="list-style-type: none"> • The manuscript is promising but requires significant revisions in language, structure, and the inclusion of recent studies to improve its clarity, technical soundness, and relevance to current research. 	

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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