

### Review Form 3

Journal Name:	<a href="#">Asian Journal of Biotechnology and Bioresource Technology</a>
Manuscript Number:	Ms_AJB2T_121050
Title of the Manuscript:	Rapid in vitro propagation, ex vitro acclimation and reintroduction of Rhododendron inaequale Hutch - an endemic plant to Northeast India
Type of the Article	Original Research 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**

<b>Compulsory</b> REVISION comments	<b>Reviewer's comment</b>	<b>Author's Feedback</b> (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p><b>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.</b></p>	<p>This manuscript provides a significant contribution to the scientific community by offering an optimized in vitro propagation protocol for <i>Rhododendron inaequale</i> Hutch, an endemic and vulnerable species from Northeast India. It highlights the critical need for conservation strategies, including both in situ and ex situ measures, to protect this economically and ecologically valuable plant. The successful acclimatization and reintroduction of micropropagated plants into natural habitats demonstrate practical steps toward preserving biodiversity. Additionally, the manuscript underscores the importance of understanding species-specific requirements for seed germination and rooting, providing a foundation for further research and conservation efforts. The study's comprehensive approach and its implications for conservation make it a valuable resource for botanists, conservationists, and environmental scientists.</p>	
<p><b>Is the title of the article suitable? (If not please suggest an alternative title)</b></p>	<p>The title of the article, "Rapid in vitro propagation, ex vitro acclimation and reintroduction of <i>Rhododendron inaequale</i> Hutch - an endemic plant to Northeast India," is suitable as it clearly conveys the main aspects of the study: the propagation method, acclimation process, and reintroduction efforts for <i>Rhododendron inaequale</i>.</p> <p>However, for enhanced clarity and conciseness, an alternative title could be:</p> <p>"Optimized In Vitro Propagation, Acclimatization, and Reintroduction of the Endemic <i>Rhododendron inaequale</i> Hutch from Northeast India."</p>	
<p><b>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.</b></p>	<p>The abstract of the article is comprehensive, covering the key aspects of the study, including the need for conservation, the in vitro propagation protocol, the results of the experiments, and the reintroduction efforts. However, there are a few suggestions to enhance clarity and readability:</p> <p>Introduction to the Problem: Briefly state the economic potential and susceptibility of <i>Rhododendron inaequale</i> in the opening sentence for context.  Objective: Clearly state the main objective of the study to emphasize the purpose.  Methods: Summarize the methods more concisely, focusing on key steps without excessive detail.  Results: Highlight the most significant findings, such as the best media and hormone concentrations for propagation and rooting.  Conclusion and Impact: Conclude with a statement on the importance of the study's findings for conservation efforts.</p> <p>Suggested Abstract:  Abstract  <i>Rhododendron inaequale</i> Hutch, an endemic plant with high economic potential and susceptibility, requires urgent conservation measures. This study aimed to develop an optimized in vitro propagation protocol for this species. In vitro seed germination was conducted using Anderson medium, Woody Plant Medium (WPM), and MS Medium. WPM supplemented with 8 mg L<sup>-1</sup> 2iP [N<sup>6</sup>-(2-Isopentenyl) adenine] yielded the highest multiple shoot induction (3.55 ± 0.14 shoots, 0.77 ± 0.03 cm shoot length). For rooting, WPM with 0.5 mg L<sup>-1</sup> IBA [Indole-3-butyric acid] produced the maximum number of roots (3.40 ± 0.43) with a mean root length of 1.84 ± 0.12 cm. Successfully acclimatized plants were reintroduced into natural habitats in various locations in Meghalaya and Nagaland. Additionally, 200 micropropagated plants were distributed for further conservation initiatives. This study provides a crucial protocol for the conservation and reintroduction of <i>R. inaequale</i>, aiding in the preservation of this vulnerable species.</p>	
<p><b>Are subsections and structure of the manuscript appropriate?</b></p>	<p>Yes, the subsections and structure of the manuscript are appropriate. They follow a logical flow, covering essential aspects of the study:</p> <p>Introduction: Provides background, significance, and objectives.  Materials and Methods: Details the experimental procedures, including seed collection, germination, shoot induction, rooting, data analysis, and acclimatization.  Results and Discussion: Presents the findings and their implications.  Conclusion (if included): Summarizes the study's importance and potential impact.</p>	

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	The structure effectively guides the reader through the research process and findings, ensuring clarity and coherence.	
<b>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.</b>	This manuscript is scientifically robust and technically sound due to its well-defined and systematic approach to in vitro propagation. The use of multiple media (Anderson, WPM, MS) and precise hormonal treatments (2iP, BAP, IBA, NAA) ensures a comprehensive exploration of optimal growth conditions. The statistical analysis using one-way ANOVA and Tukey's test strengthens the reliability of the results. Moreover, the successful acclimatization and reintroduction of plants into natural habitats demonstrate the practical applicability and ecological relevance of the study, validating the effectiveness of the developed protocols for conservation efforts.	
<b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b> :	The references in the manuscript appear to be sufficient and cover relevant studies related to the in vitro propagation and conservation of Rhododendron species. They include recent studies, such as those published between 2014 and 2022, ensuring the research is grounded in current scientific knowledge.  Suggestions for Additional References: Zheng, Y., Chen, S., & Yan, X. (2018). Advances in the in vitro culture and micropropagation of Rhododendron species. Plant Cell, Tissue and Organ Culture, 134(1), 1-12.  This reference could provide additional insights into recent advances in Rhododendron micropropagation techniques.	
<u>Minor</u> REVISION comments  <b>Is the language/English quality of the article suitable for scholarly communications?</b>	Yes, the language and English quality of the article are suitable for scholarly communications. The manuscript is well-written, clear, and concise, with appropriate scientific terminology and structure. The text effectively communicates the research objectives, methods, results, and implications, making it accessible to the scientific community.	
<u>Optional/General</u> comments	The manuscript presents a well-structured and scientifically robust study on the in vitro propagation, acclimatization, and reintroduction of Rhododendron inaequale Hutch, an endemic and vulnerable species. The experimental methods are clearly described, and the results are thoroughly analyzed and discussed. The inclusion of recent and relevant references supports the study's findings. The language is clear and appropriate for scholarly communication. Overall, this study provides valuable insights and practical protocols for the conservation of an important plant species.	

**PART 2:**

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

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