Review Form 3

Journal Name:	**Journal of Advances in Biology & Biotechnology**
Manuscript Number:	**Ms_JABB_125997**
Title of the Manuscript:	**Inoculum levels for Sustainable Control of Root-Knot Nematodes in Tomato under polyhouse condition: A Study from North eastern part of India**
Type of the Article	**Research 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: Review Comments

Compulsory REVISION 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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	**This manuscript offers significant value to the scientific community, especially in the context of sustainable agricultural practices. It addresses the crucial issue of root-knot nematode infestations in tomato crops, a prevalent problem causing economic damage to agriculture globally. The research provides essential insights into the pathogenicity of nematodes under polyhouse conditions, offering practical data that can guide farmers and policymakers in devising sustainable management strategies. I appreciate the manuscript's clear focus on both biological control measures and the importance of early detection, which are key for reducing crop losses and enhancing productivity. Its regional focus on Northeast India adds to its relevance by addressing a geographical area often underrepresented in agricultural research.**	
Is the title of the article suitable? (If not please suggest an alternative title)	**The current title, *"Inoculum levels for Sustainable Control of Root-Knot Nematodes in Tomato under Polyhouse Condition: A Study from North Eastern Part of India,"* is informative but could be streamlined for clarity and conciseness. While it includes key details, it could benefit from a more succinct structure. Here's a suggested alternative: **"Sustainable Management of Root-Knot Nematodes in Tomatoes: Effects of Inoculum Levels under Polyhouse Conditions in Northeast India"** This version keeps the critical elements but improves readability and impact by reducing redundancy. It highlights the study's focus on sustainable management, inoculum levels, and the regional significance.**	
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 provides a good overview of the study, but it can be improved for clarity and completeness. It briefly mentions the problem (root-knot nematode infestations), the methodology, and key findings, but there are areas that could be elaborated to strengthen its comprehensiveness. Here are some suggestions for improvement: 1. **Objective**: The abstract could more explicitly state the objective of the research at the beginning. For instance, rather than just mentioning "early predictions," it should clearly outline that the study investigates how different inoculum levels affect nematode control and plant health. 2. **Methods**: The current mention of methods is somewhat vague. Including more specifics, such as the polyhouse conditions and experimental design, would give readers a better understanding of how the research was conducted. 3. **Findings**: While the key results (inoculum levels, root gall index, egg masses) are mentioned, the abstract could emphasize how these findings contribute to better management practices. Adding a sentence to summarize the practical implications for farmers or the agricultural community would increase the impact. 4. **Conclusion**: A stronger conclusion is needed to tie together the importance of the findings and suggest future directions or the broader applicability of the research. ### Suggested Revision: "The study aims to evaluate the impact of different inoculum levels of root-knot nematodes (Meloidogyne spp.) on tomato plants under polyhouse conditions in Northeast India. The research provides early predictions of nematode infestation severity and guides farmers on sustainable management practices, including biological control, to keep nematode populations below the economic threshold. Soil samples from key tomato-growing areas were collected, and inoculum levels ranging from 500 to 8000 J2 were tested. The study found a significant increase in root gall index, egg mass production, and nematode population with higher inoculum levels. Even low inoculum levels (500 J2) caused notable damage to the plants. These findings underscore the importance of managing nematode populations early to reduce crop losses and highlight the need for efficient, low-inoculum control strategies. This study contributes to the sustainable management of nematodes in agricultural practices." This revision clarifies the research's purpose, methods, and key findings while highlighting the practical significance of the study.**	
Are subsections and structure of the manuscript appropriate?	**The manuscript's subsections and structure are largely appropriate, as it follows a typical scientific format: Abstract, Introduction, Materials and Methods, Results, Discussion, and Conclusion. This structure is standard for research articles and ensures logical flow and clarity. However, a few areas could be refined to enhance readability and coherence: ### 1. **Abstract** - The abstract is well-placed at the beginning, summarizing the research. As mentioned earlier, it could be more concise and explicitly include key aspects such as the research objective, methods, key findings, and significance.**	

	### 2. **Introduction** - The introduction is clear, outlining the problem of root-knot nematodes and their economic impact. However, it could benefit from a sharper focus on the research gap and the specific objective of this study. The mention of Northeast India is relevant and helps contextualize the study geographically. ### 3. **Materials and Methods** - This section is detailed and structured well, explaining sample collection, experimental design, and statistical analysis. The descriptions of soil collection, inoculation procedures, and measurements are clear. However, breaking down this section into smaller, clearly labelled subsections (e.g., "Soil Sample Collection," "Experimental Setup," "Inoculum Levels," "Nematode Isolation") would improve readability. ### 4. **Results** - The results are presented with relevant tables and figures, which help visualize the findings. Structuring the results into subsections such as “Plant Growth Parameters,” “Nematode Population,” and “Reproduction Factor” is effective. However, further summarizing the key findings at the end of each subsection could make the results more digestible for the reader. ### 5. **Discussion** - The discussion is well-written, addressing the implications of the findings and comparing them to previous research. However, it could benefit from more explicit links to practical applications for farmers or agronomists. Additionally, clearly marking the limitations of the study and suggestions for future research would strengthen this section. ### 6. **Conclusion** - The conclusion is concise but could better summarize the practical significance of the study. A closing paragraph highlighting the broader implications of sustainable nematode management would enhance the final impact. ### Suggestions for improvement: - **Section Headers**: Make sure all main sections are clearly labelled with headers in bold or italic for easier navigation. - **Subheadings**: In the Materials and Methods section, as well as in the Results section, subheadings could be used more consistently to break down information into digestible parts. - **Figures and Tables**: Ensure all figures and tables are appropriately labelled and referenced in the text. ### Overall: The manuscript’s structure is sound and follows a logical progression. Small changes to the labelling and organization of subsections, particularly in the methods and results sections, would improve clarity and readability.	
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.	This manuscript appears scientifically robust and technically sound due to its well-structured experimental design and thorough data collection. The methodology is clearly defined, with detailed descriptions of the inoculum levels, polyhouse conditions, and measurements of plant growth parameters, ensuring the reproducibility of the study. The use of appropriate controls, statistical analysis, and replication further strengthens the reliability of the results. Additionally, the findings align with existing research on nematode pathology, adding credibility and supporting the scientific validity of the conclusions drawn from the study.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. -	The references in the manuscript are generally sufficient and provide a solid foundation for the study. However, many of the cited works are relatively old, with some dating back to the 1980s and 1990s, such as Sasser and Freckman (1987), Khan and Pariari (2013), and Bhardwaj (1972). While these are seminal works in the field, incorporating more recent literature could enhance the manuscript's relevance and reflect the latest advancements in nematode management and sustainable agricultural practices. ### Suggestions for improvement: 1. **Add recent references**: Including more recent studies (from the past 5-10 years) on sustainable nematode management and biological control methods in agriculture would provide a stronger, more updated foundation for the discussion. 2. **Potential sources**: Some recent studies that could be considered include: - Wang, J.Y., Guo, C., Zhao, P., et al. (2021). *Biocontrol potential of *Bacillus altitudinis* against root-knot nematode disease in tomatoes. * This study explores biological control, aligning well with your research focus. - Kankam, F., & Adomako, J. (2014). *Influence of inoculum levels of root-knot nematodes (*Meloidogyne* spp.) on tomato growth parameters. * This is directly related to your study and could support your findings on inoculum levels. In summary, while the references cover key aspects of the topic, adding more recent studies could provide a better balance between foundational knowledge and current trends in the field.	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	The language and English quality of the manuscript are generally suitable for scholarly communication, but there are areas that could benefit from minor revisions to improve clarity, flow, and grammar. Here are some suggestions for improvement: 1. **Grammar and Sentence Structure**: Some sentences are lengthy and could be broken into shorter, clearer statements. For instance, in the abstract, "Due to its polyphagous nature and adaptability to adverse conditions the root-knot nematode is considered a serious agricultural issue in India" could be revised to: *"The root-knot nematode, due to its polyphagous nature and adaptability to adverse conditions, is a significant agricultural issue in India."* 2. **Punctuation**: There are occasional missing commas and run-on sentences. For example, the sentence "Tomatoes play a vital role in nutrition being rich in essential amino acids and minerals" should be: *"Tomatoes play a vital role in nutrition, being rich in essential amino acids and minerals."* 3. **Word Choice**: Some terms could be simplified for better readability. For example, "acquainted with drastic losses" in the abstract could be clearer as *"to avoid drastic crop losses."* 4. **Consistency**: Ensure consistent use of terminology, particularly in reference to the root-knot nematodes, and avoid repetition of phrases in close proximity. In summary, the manuscript's language is understandable but would benefit from minor revisions for grammar, sentence structure, and overall clarity to meet the highest standards of scholarly communication.	
Optional/General comments	The manuscript addresses an important issue in sustainable agriculture, particularly the management of root-knot nematodes in tomato crops under polyhouse conditions. The research is relevant, timely, and adds valuable data to a region (Northeast India) that is underrepresented in agricultural research. Here are a few general comments for further improvement: 1. **Practical Implications**: The manuscript could benefit from a stronger emphasis on the practical applications of the findings. Highlighting how farmers can use the results to improve yield or implement effective nematode management strategies would make the research more impactful. 2. **Figures and Tables**: The figures and tables are useful but could be improved by ensuring they are referenced clearly in the text and visually enhanced for easier interpretation. A brief explanation of what each figure or table represents would also aid in understanding. 3. **Conclusion**: The conclusion is well-written but could be more robust by discussing the broader implications of the study in terms of sustainable agriculture and potential future research directions, such as testing biological control methods alongside the inoculum levels studied. Overall, this is a valuable contribution to the field, and with some minor adjustments, it will be even stronger.	

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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