Review Form 3

Journal Name:	**Journal of Scientific Research and Reports**
Manuscript Number:	**Ms_JSRR_128637**
Title of the Manuscript:	**Community analysis of plant parasitic nematodes around the rhizosphere of vegetable crops in Jorhat district of Assam**
Type of the Article	**Research Article**

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.	**This manuscript provides valuable insights into the community composition, distribution, and ecological significance of plant-parasitic nematodes affecting vegetable crops in the Jorhat district of Assam. By identifying dominant species such as *Meloidogyne incognita* and quantifying their impact, the study offers critical data for developing region-specific nematode management strategies. It bridges a significant gap in the understanding of nematode ecology in tropical agricultural systems, contributing to sustainable pest management and crop productivity. Furthermore, the findings hold relevance for researchers and policymakers seeking to mitigate crop losses caused by nematodes in similar agro-climatic regions.**	
Is the title of the article suitable? **(If not please suggest an alternative title)**	**The current title, "Community analysis of plant parasitic nematodes around the rhizosphere of vegetable crops in Jorhat district of Assam," is informative but slightly lengthy and could benefit from being more concise and engaging. While it captures the key focus, the phrase "around the rhizosphere" might be redundant since "rhizosphere" inherently refers to the area around plant roots.** **"Community Structure of Plant-Parasitic Nematodes in the Rhizosphere of Vegetable Crops in Jorhat, Assam" (**More concise while retaining clarity and specificity)	

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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 is comprehensive in summarizing the study's objectives, methodology, results, and implications. However, some areas could be improved for clarity, brevity, and impact. Below are the strengths and areas for improvement.** **Areas for Improvement:** **1. Excessive Methodological Details:** **o The description of sampling methods (e.g., "five administrative blocks," "Cobb's modified decanting and sieving technique") is too detailed for an abstract.** ***Suggestion:* Condense the methodology section to focus on the core techniques used, such as nematode extraction and community analysis.** **2. Lack of Quantified Impact on Crops:** **o The abstract does not mention how nematode infestations affect crop yield or quality.** ***Suggestion:* Include a sentence quantifying the potential economic or yield losses caused by the dominant nematode species.** **3. Lengthy Sentences:** **o Some sentences are overly long, making them harder to read.** ***Suggestion:* Break down complex sentences for better readability.** **4. No Mention of Limitations or Future Directions:** **o Including a brief acknowledgment of study limitations or recommendations for future work would strengthen the abstract.**	
Is the manuscript scientifically, correct? Please write here.	**The manuscript is scientifically sound, with appropriate methods and a clear analysis of plant-parasitic nematode communities. However, it would benefit from more detailed descriptions of species identification, clarification of specific metrics, and a deeper exploration of the long-term ecological implications of the findings. These additions would ensure the manuscript is not only correct but also comprehensive and fully aligned with current scientific standards.** **Potential Areas for Improvement:** **1. Taxonomic Identification and Validation:** **While the manuscript mentions the identification of nematode species, it does not specify how the identification was validated (e.g., morphological analysis, molecular techniques, or expert verification). Ensuring that the species identification process is robust and well-supported by scientific methods is crucial for the study's scientific accuracy.** ***Suggestion:* Clarify the identification process and provide more detail on how species were confirmed.** **2. Clarification of Metrics Used:** **The manuscript mentions several community metrics (absolute frequency, relative frequency, density, plant-parasitic index, etc.), but there is limited explanation of how these metrics were calculated, particularly the plant-parasitic index.** ***Suggestion:* Provide more details or references on how these metrics were calculated and interpreted. For instance, was the plant-parasitic index derived from literature, or was it an original metric?** **3. Relevance of the Similarity Index:** **The use of the similarity index to compare nematode communities across administrative blocks is appropriate, but it may be useful to clarify its ecological significance in the study. While the results show a high overlap of nematode species, the practical implications of this similarity (e.g., how it influences pest management or crop losses) could be explained more explicitly.** ***Suggestion:* Expand on the ecological and practical relevance of the similarity index results.** **4. Long-Term Ecological Implications:** **The manuscript provides a snapshot of nematode communities but does not discuss the potential long-term ecological or agricultural implications, such as how seasonal variations, soil health, or crop rotation may affect nematode populations over time.** ***Suggestion:* A brief mention of the temporal aspects of nematode dynamics would strengthen the manuscript's ecological accuracy and its applicability to long-term**	

	agricultural practices. **5. Consideration of Soil Properties:** **The manuscript does not explicitly discuss how different soil types or environmental factors (e.g., pH, moisture, temperature) might influence nematode populations. Since these factors can significantly affect nematode communities, a more detailed discussion would improve the scientific completeness of the study.** ***Suggestion:*** **Consider integrating soil properties or environmental variables as part of the analysis or discussion to provide a more holistic view of nematode ecology**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	**While the manuscript includes relevant references, it would benefit from adding more recent studies, especially those from India or Southeast Asia, to reflect the latest advancements in nematode research, molecular techniques, and pest management strategies. Incorporating review articles would also help provide a broader context and ensure the manuscript remains at the forefront of scientific discourse** **Issues and Recommendations:** **Age of Some References:** Some references, such as **Das and Rahman (1996)** and **Deuri and Das (2012)**, are over two decades old. While they may be foundational in the context of nematode research in Assam, the manuscript would benefit from incorporating more **recent** literature (within the last 5-10 years) to reflect advances in nematode ecology, molecular techniques, and pest management strategies. **Regional Focus:** While the manuscript references a wide range of studies, many of the studies are from global regions, such as Spain and Egypt. To strengthen the regional relevance, the manuscript could benefit from **additional references specific to India or South Asia**, particularly those addressing nematode management in tropical and subtropical vegetable systems.	

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Is the language/English quality of the article suitable for scholarly communications?	The overall language quality of the manuscript is **adequate** for scholarly communication, but there are several areas where improvements can be made to enhance clarity, precision, and professionalism. Below are detailed observations and suggestions: **Areas for Improvement:** 1. **Sentence Length and Complexity:** o Some sentences are quite long and complex, making them harder to follow. In academic writing, **clarity and conciseness** are key, so breaking up long sentences would help. *Example:* ▪ Current: "Nematodes were extracted using Cobb's modified decanting and sieving technique for soil and the Baermann funnel method for roots." ▪ Suggested Revision: "Nematodes were extracted using Cobb's modified decanting and sieving technique for soil. For roots, the Baermann funnel method was employed." 2. **Consistency in Terminology:** o Ensure that terms are used consistently throughout the manuscript. For example, "plant-parasitic nematodes" is used frequently, but there is also the term "nematodes that parasitize plants." It's better to stick to one term throughout the manuscript. *Suggestion:* Stick with "plant-parasitic nematodes" for consistency. 3. **Verb Tense Issues:** o Some sections use inconsistent tenses, particularly between past and present. Academic writing typically uses **past tense** to describe methods, results, and findings, and **present tense** to discuss general knowledge and conclusions. *Example:* ▪ Current: "This study provides key insights into the community structure and distribution..." (present tense) ▪ Suggested Revision: "This study **provided** key insights into the community structure and distribution..." (past tense for findings) 4. **Use of Articles (a, an, the):** o There are several instances where articles ("a," "an," "the") are either missing or incorrectly used. Articles are essential for grammatical correctness and flow in English. *Example:* ▪ Current: "Nematodes were extracted using Cobb's modified decanting..." ▪ Suggested Revision: "The nematodes were extracted using Cobb's modified decanting..." 5. **Clarity and Precision in Expressions:** o Some phrases can be simplified or rewritten for clarity. The goal is to express the findings in a precise and straightforward manner, without unnecessary complexity. *Example:* ▪ Current: "The study highlights the dominance of *M. incognita* in the Jorhat district, emphasizing the need for targeted nematode management strategies." ▪ Suggested Revision: "The study emphasizes the dominance of *M. incognita* in the Jorhat district and the need for targeted nematode management strategies." 6. **Phrasing and Word Choice:** o A few phrases are either awkward or overly verbose. Simplifying the language and improving word choice can make the manuscript more fluid and readable. *Example:* ▪ Current: "The study highlights the dominance of *M. incognita* in the Jorhat district, emphasizing the need for targeted nematode management strategies." ▪ Suggested Revision: "The study underscores the dominance of *M. incognita* in the Jorhat district and the need for effective nematode management strategies." **Minor Issues:** 1. **Redundancy:** o Some sentences repeat ideas or concepts that have already been conveyed earlier in the manuscript. Reducing redundancy improves readability and flow. *Example:* Avoid restating results that are already summarized in the Abstract or	

	Results section. 2. **Use of Contractions:** o In scholarly writing, it is often better to avoid contractions. *Example:* Instead of "it's," write "it is." 3. **Prepositions and Article Usage:** o In a few places, prepositions and articles are used incorrectly. *Example:* ▪ Current: "A study was conducted in five administrative blocks of the Jorhat district." ▪ Suggested Revision: "A study was conducted across five administrative blocks in the Jorhat district."	

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Optional/General comments	**Abstract** 1. **"**To analyze the community composition, abundance, and distribution..." o **Revise for clarity**. Consider specifying the problem statement more explicitly to hook the reader. 2. "A cross-sectional survey-based study employing nematode sampling..." o Include a brief justification for choosing these methods over alternatives. 3. "The study was conducted in five administrative blocks..." o Add a sentence linking how these locations were representative or significant. **Introduction** **Major Issues for Revision:** **1. Opening Statement Lacks Specificity:** o The phrase "India's warm and humid climate is perfect for growing vegetables" is overly generic. Strengthen it by quantifying India's contribution to global vegetable production or specific crops affected by nematodes. **E.g.: "India is one of the largest producers of vegetables globally, contributing over 15% to global production; however, this output is significantly hampered by plant-parasitic nematodes."** **2. Clarity on Nematode Impact:** o While the text mentions yield reduction, the scale and economic impact are not quantified. Include specific statistics or examples to emphasize the severity of the problem. **E.g.: "Nematode infestations cause annual yield losses of up to 20-30% in vegetable crops worldwide, translating to economic losses exceeding billions of dollars."** **3. Logical Flow Needs Improvement:** o The section jumps from nematode prevalence to crop loss without clearly linking the mechanisms or examples. A smoother transition would help readers understand how nematodes affect crops. **4. Gaps in Literature Review:** o The introduction does not adequately highlight existing research on nematodes in Assam or why this study is unique. ***Recommendation:* Include a brief review of prior studies, such as findings from similar agro-climatic zones, and identify specific knowledge gaps your study addresses.** **5. Unclear Objectives in Context:** o While the introduction sets up the problem, it does not clearly define the objective of the study within the introduction itself. Add a sentence linking the study's purpose to the issues raised**.** **E.g.: "This study aims to analyze nematode community composition and identify dominant species affecting vegetable crops in Assam, providing insights for targeted management strategies."** **Materials and Methods** **Suggestions for Improvement:** **Here's a possible revised structure for Materials and Methods:** **1. Study Area:** o Provide an overview of the geographic, climatic, and agronomic characteristics of the Jorhat district**.** **2. Sampling Methodology:** o Clearly describe the sampling design, sample size justification, and crop types studied**.** **3. Nematode Extraction:** o Detail the extraction methods, including references to Christie and Perry (1951), and why these were chosen**.** **4. Statistical Analysis:**	

	o Describe the statistical tools, software, and significance thresholds used for analyzing nematode metrics**.** **5. Soil and Crop Details:** o Include a brief description of soil characteristics (e.g., pH, texture) crop growth stages and previous crop details during sampling**.** **6. Survey location details:** Include GIS details for the survey locations **7. Details about species validation** Include the details about the species validation (Morphological/ Molecular characters) **Results and Discussion** **Major Issues for Revision:** **1. Overload of Data Without Adequate Interpretation:** o While the numerical data is extensive, the interpretation is insufficient. For instance, the dominance of Meloidogyne incognita is noted, but the ecological or agronomic reasons for this dominance are not well discussed. ***Recommendation:*** **Expand on why Meloidogyne incognita thrives in this region. Consider discussing environmental factors, host crop preferences, or farming practices.** **2. Lack of Statistical Analysis Presentation:** o The section mentions metrics like absolute frequency and the similarity index but does not provide statistical significance or confidence intervals. ***Recommendation:*** **Include p-values, standard errors, or other statistical measures to validate the results. A brief explanation of the statistical relevance of the similarity index would also be helpful.** **3. Limited Integration of Results and Discussion:** o The results are listed separately from their implications, making the section feel fragmented. Integrate data interpretation with the presentation of results for a cohesive narrative. **4. Missing Mechanistic Insights:** o The discussion largely describes the patterns observed but does not delve into the potential mechanisms driving these patterns**.** ***Recommendation:*** **Discuss soil properties, climate, or cropping systems as potential factors influencing nematode distribution and density.** **5. Superficial Comparison with Other Regions:** o While prior studies are cited, the comparison lacks depth. For example, differences in nematode populations between Assam and other regions (e.g., cited studies in Spain, Egypt, or Hyderabad) are not explored. ***Recommendation:*** **Highlight specific contrasts in nematode ecology or management practices between these regions and Assam.** **6. Unclear Relevance of Similarity Index:** o The similarity index is presented but not fully explained in terms of its implications for nematode management or ecology. ***Recommendation:*** **Clarify why certain blocks exhibit greater similarity and what this means for targeted management strategies.** **Minor Issues:** **1. Typographical and Formatting Errors:** o "*Meloidogyne incognita* ranked first in mean absolute density..." ***Revision:*** **Ensure consistency in tense throughout the results and discussion.** o **Correct any inconsistent percentage formatting (e.g., "5356.01%" instead of "5356.01").** **2. Clarity in Species Names:** o Use italics consistently for scientific names (e.g., *Meloidogyne incognita*). **3. Table References:** o Ensure that all tables are clearly referenced in the text with proper numbering (e.g., “As shown in Table 1…”). **4. Flow of Subsections:** o Introduce subheadings (e.g., *Dominant Nematode Species*, *Inter-Block Similarity*,	

	Management Implications) for better readability. 5. **Limited Practical Recommendations:** o While the section concludes that management strategies are needed, there is no mention of specific actions or guidelines for farmers. ***Recommendation:*** **Propose actionable steps, such as crop rotation, resistant varieties, or targeted use of nematicides.** 6. **Future Directions:** Discuss limitations of the current study and propose areas for further research, such as long-term monitoring or molecular characterization of nematode species. **Conclusion** **Major Issues for Revision:** 1. **Lack of Specific Recommendations:** o While the need for nematode management strategies is highlighted, no specific actions are suggested. ***Recommendation:*** **Provide concrete recommendations, such as crop rotation, use of nematicides, resistant crop varieties, or cultural practices to mitigate nematode damage.** 2. **Overgeneralized Statements:** o Phrases like "These findings contribute to the broader understanding of nematode ecology" are too generic and do not specify the study's unique contributions. ***Recommendation:*** **State explicitly how this study fills gaps in knowledge or offers new insights compared to previous research.** 3. **Limited Discussion of Economic Impact:** o The conclusion does not discuss the economic implications of the findings for farmers in the Jorhat district or similar regions. ***Recommendation:*** **Add a sentence or two on how addressing nematode issues could enhance productivity and reduce economic losses.** 4. **No Mention of Study Limitations:** o The section does not acknowledge limitations, such as potential biases in sampling or the need for longer-term studies. ***Recommendation:*** **Briefly mention limitations to provide a balanced perspective and suggest future research directions.** 5. **Weak Closing Sentence:** o The final sentence lacks impact and does not leave the reader with a strong takeaway. ***Recommendation:*** **Conclude with a forward-looking statement about the importance of addressing nematode issues for sustainable agriculture.** **Figures and Table** **Table could be improved structurally:** 1. **Title and Caption:** **Add a clear title and a descriptive caption. For example:** o **Title:** ***"Community Analysis of Plant-Parasitic Nematodes Associated with Vegetable Crops in Jorhat District, Assam"*** o **Caption:** ***"The table presents metrics of nematode species abundance and distribution, including frequency, density, prominence value and plant-parasitic index, calculated from 146 soil and root samples collected during 2021-2022."*** 2. **Legend and Footnotes:** **Include a legend or footnotes to define terms like "Absolute Frequency," "Relative Density," and "Plant-Parasitic Index Value."** 3. **Statistical Validation:** **Add statistical indicators to highlight significant differences between species or blocks.** **References**	

	Adhere consistency in formatting E.g. Tileubayeva, Z., Avdeenko, A., Stroiteleva, N., & Kondrashev, S. (2021). Plant-parasitic nematodes affecting vegetable crops in greenhouses. Saudi J. Biol. Sci., 28(9), 5428–5433.	

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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