Review Form 3

Journal Name:	**Journal of Advances in Biology & Biotechnology**
Manuscript Number:	**Ms_JABB_124578**
Title of the Manuscript:	**Quantifying the Impact of Nitrogen Concentration Variations on Quality Characteristics of Soilless Cultivated Cherry Tomato**
Type of the Article	

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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 is important for the scientific community because it gives more technical solutions according to the impact of nitrogen concentration variations on quality characteristics of soilless cultivated cherry tomato.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	Yes.	
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.	Yes.	
Are subsections and structure of the manuscript appropriate?	Yes	
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.	The manuscript needs a minor revision. All the comments are given in the Optional/General comments.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **:**	I recommend to be added to References the following references: 1. Ţălu. Ș. (2024). Insights on Hydroponic Systems: Understanding Consumer Attitudes in the Cultivation of Hydroponically Grown Fruits and Vegetables. *Magazine of Hydraulics, Pneumatics, Tribology, Ecology, Sensorics, Mechatronics (HIDRAULICA)*, **1**: 56-67. 2. Sales, H. B. E., Carolino, A. S., Nunes, R. Z. A., Macalia, C. M. A., Ruzo, C. M., Pinto, C. C., Bezerra, J. A., Campelo, P. H., Ţălu, Ș., Souza, L. K. C., and Sanches, E. A. (2024). Advances in agricultural technology: A review of slow-release nanofertilizers and innovative carriers. *Communications in Soil Science and Plant Analysis*, 55(12): 1849-1882. DOI: 10.1080/00103624.2024.2326145.	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	Yes.	
Optional/General comments	1 **Clarity in the Introduction**: The introduction could benefit from further clarity on the specific gaps in knowledge or previous research regarding nitrogen concentration in cherry tomato cultivation. While general challenges are mentioned, emphasizing what this study uniquely addresses could strengthen the context. 2. **Literature Support**: Although the introduction cites relevant studies, more recent or diverse references could add depth, especially regarding nitrogen application in hydroponics versus traditional soil methods for tomatoes. 3. **Objective Precision**: The research objective mentions "quality attributes" without specifying which parameters are considered under this term. Providing a clearer outline of the specific quality metrics being investigated would help the reader understand the scope. 4. **Experimental Design Justification**: The manuscript uses a Completely Randomized Design (CRD), which is appropriate for greenhouse studies. However, a brief explanation of why this design was chosen over others (e.g., factorial design) would improve the rationale for the methodology. 5. **Nitrogen Ratios**: The manuscript does not justify why a 40:60 ratio of NO_3^- to NH_4^+ was selected. Providing a rationale for this specific nitrogen ratio would enhance the methodological transparency, especially since different ratios could affect plant responses. 6. **Sampling Details**: While fruit sampling for measurements is explained, details on the number of plants per treatment would be beneficial for understanding the sample size. This information is critical for evaluating the reliability of the results. 7. **Consistency of Measurement Units**: Throughout the text, measurements like fruit diameter and weight are presented. Ensure consistency in units and abbreviations to avoid confusion, especially for international readers (e.g., mm vs. millimeters). 8. **Control Treatments**: There is no mention of a control treatment (e.g., a treatment without nitrogen supplementation). Including a control would provide a clearer baseline for evaluating the impact of nitrogen concentration on plant growth and yield. 9. **Statistical Analysis Description**: The statistical analysis section could benefit from more details about the specific tests conducted, such as ANOVA assumptions, post-hoc tests, and the handling of data variability, which would improve the robustness of the results. 10. **Redundancy in Results**: There is some redundancy in the discussion of the nitrogen effects on fruit diameter and weight across different sections. Condensing these findings or merging similar paragraphs could improve readability. 11. **Discussion of Mechanisms**: The discussion focuses on correlations between nitrogen and growth metrics but lacks a detailed mechanistic explanation of how nitrogen concentration physiologically affects cherry tomato development (e.g., nutrient uptake, photosynthesis efficiency). Including this would add depth to the analysis. 12. **Lack of Environmental Data**: Although the study was conducted in a greenhouse, environmental parameters such as temperature, humidity, and light conditions are not described in detail. These factors could influence plant growth and should be considered when interpreting the results. 13. **Chlorophyll Content Interpretation**: The manuscript reports on chlorophyll content, but a clearer explanation of why this metric is important for cherry tomatoes (beyond basic photosynthetic capacity) and how it relates to fruit quality would be helpful. 14. **Future Directions and Applications**: The study discusses the positive effects of nitrogen on cherry tomato quality, but there is limited discussion on the practical applications for growers or recommendations for future research. Including potential real-world implications and suggestions for further study would provide a stronger conclusion. 15. Write uniform References according to Guide of authors. 16. **I recommend to be added to References the following references:** 1. Ţălu. Ş. (2024). Insights on Hydroponic Systems: Understanding Consumer Attitudes in the Cultivation of Hydroponically Grown Fruits and Vegetables. *Magazine of Hydraulics, Pneumatics, Tribology, Ecology, Sensorics, Mechatronics (HIDRAULICA)*, **1**: 56-67.	

	2. Sales, H. B. E., Carolino, A. S., Nunes, R. Z. A., Macalia, C. M. A., Ruzo, C. M., Pinto, C. C., Bezerra, J. A., Campelo, P. H., Ţălu, Ş., Souza, L. K. C., and Sanches, E. A. (2024). Advances in agricultural technology: A review of slow-release nanofertilizers and innovative carriers. *Communications in Soil Science and Plant Analysis*, 55(12): 1849-1882. DOI: 10.1080/00103624.2024.2326145.	

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)*	

Reviewer Details:

Name:	**Ştefan Ţalu**
Department, University & Country	**The Technical University of Cluj-Napoca, Romania**