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## REVIEWER'S REPORT

Manuscript No.: IJAR-50657

Date: 15/3/2025

Title: Heavy metal bioaccumulation in Zea mays L. i Medicago sativa L. in the area of Zenica

### Recommendation:

- Accept as it is .....
- Accept after minor revision.....
- Accept after major revision .....√.....
- Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality			√	
Techn. Quality		√		
Clarity			√	
Significance		√		

Reviewer Name: Ahmed M. Saqr

Date: 15/3/2025

### Reviewer's Comment for Publication.

*(To be published with the manuscript in the journal)*

*The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.*

This study provides valuable insights into the bioaccumulation of heavy metals in Zea mays L. and Medicago sativa L., highlighting the environmental impact of industrial pollution on agricultural crops. The findings emphasize the risks associated with heavy metal contamination in soils and plants, with implications for food safety and phytoremediation. The research contributes to understanding plant-metal interactions and the potential for using certain crops in soil decontamination efforts.

### Detailed Reviewer's Report

***Thank you for submitting your manuscript. The study presents an important assessment of heavy metal bioaccumulation in corn (Zea mays L.) and alfalfa (Medicago sativa L.), providing valuable insights into environmental pollution and its impact on agriculture. However, several aspects of the manuscript require further clarification and improvement before it can be***

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*considered for publication. Below are my detailed comments and suggestions.*

**Major Comments & Suggestions****Abstract**

*The abstract should provide a clearer summary of the main findings. Can you explicitly highlight which heavy metals showed the highest bioaccumulation in each plant species?*

*The abstract mentions the presence of heavy metals above permissible limits, but it does not specify the associated risks or implications. Can you briefly address the potential environmental and health risks?*

**Introduction**

*The introduction provides a good background on heavy metal contamination but does not clearly define the research gap. Can you explicitly state how this study builds upon previous research in the same area or on similar plant species?*

*Some references cited in the introduction appear outdated. Can you update the literature with more recent studies (post-2020) to strengthen the context of your study?*

**Materials & Methods**

*The sampling methodology needs further detail. Can you describe how many soil and plant samples were collected from each site and the criteria for selecting the sampling locations?*

*The manuscript states that heavy metal analysis was conducted using atomic absorption spectrophotometry. Can you provide more details on calibration, detection limits, and quality control measures to ensure data reliability?*

*The methodology lacks information on statistical analysis. Can you specify whether statistical comparisons (e.g., ANOVA, correlation tests) were performed to validate differences in heavy metal concentrations between sites and plant parts?*

**Results & Discussion**

*Some heavy metal concentration values are mentioned without comparison to regulatory standards. Can you include a table comparing your results to international guidelines (e.g., WHO, FAO) to assess environmental safety?*

*The discussion lacks a clear explanation of the factors influencing heavy metal bioaccumulation. Can you expand on how soil properties (pH, organic matter, texture) affected metal uptake in corn and alfalfa?*

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*The discussion should better connect findings to real-world implications. Can you elaborate on the potential consequences of heavy metal accumulation in edible plants for human and animal health?*

**Figures & Tables**

*Some tables contain excessive numerical data without a clear interpretation in the text. Can you summarize the most critical trends in a concise paragraph accompanying each table?*

*Figures should be more clearly referenced within the discussion. For example, can you ensure that each table and figure is explicitly mentioned and explained in the corresponding results section?*

**Conclusion**

*The conclusion should provide more practical recommendations. Can you suggest possible remediation strategies or policy actions to mitigate heavy metal contamination in agricultural soils?*

*The manuscript states that further studies are needed, but it does not specify the focus of future research. Can you propose specific areas that should be explored in follow-up studies?*

**References**

*Some references are incomplete or incorrectly formatted. Can you ensure all references are formatted according to the journal's citation style?*

*Several key findings lack direct citations to relevant literature. Can you verify that all claims and comparisons are properly supported by references?*