Review of: "The Role of Plant Growth-Promoting Bacteria (PGPB) in Soil Fertility Restoration in Chemical-Contaminated Areas"

arun Karnwal[1]

1 Lovely Professional University

Potential competing interests: No potential competing interests to declare.

General Comments:

The manuscript titled "Review of the Use of Plant Growth-Promoting Bacteria (PGPB) for Soil Restoration in Chemically-Polluted Environments" addresses an important environmental issue, namely, the restoration of chemically-damaged soils using Plant Growth-Promoting Bacteria (PGPB). The topic is of significant interest due to its potential impact on soil fertility and sustainable land usage. The manuscript is well-structured and generally well-written, but there are several major modifications that should be addressed before it can be considered for publication.

Major Modifications:

1. Introduction and Significance:

The introduction needs to be more comprehensive. It should provide a clearer context for why oil contamination by chemicals is a severe environmental problem and why restoring chemically-damaged soils is crucial. Additionally, you should emphasize the global or regional significance of this issue to engage the readers and justify the need for research in this area.

2. Objective and Scope:

Clearly state the objectives of this review in a separate section. Specify the research questions or hypotheses that the review aims to address. Additionally, provide a concise overview of the scope of the review to guide readers on what to expect.

3. Literature Review:

Expand the literature review section to include a more in-depth analysis of prior research on the topic. Discuss the existing knowledge gaps and controversies in the field to highlight the need for this review. Ensure that recent studies and advancements are included, as the field of soil restoration is rapidly evolving.

4. Methodology and Data Sources:

Describe the methodology used for selecting and evaluating the studies included in this review. Clearly explain the

criteria for study inclusion and exclusion. Mention the databases and search terms used to identify relevant articles. Transparency in the methodology is crucial for readers to assess the rigor of the review.

5. Results and Discussion:

Separate the results and discussion sections to enhance clarity. Present the findings objectively in the results section, and reserve the discussion section for interpretation, synthesis, and comparison of the studies. Use tables, figures, or charts where appropriate to present key findings.

6. Effectiveness of PGPB:

Provide a more detailed analysis of the effectiveness of PGPB in soil restoration. Discuss the range of outcomes observed in different studies, including quantitative data where available. Highlight any limitations or challenges associated with using PGPB for soil restoration.

7. Prospective Uses and Future Research:

Expand on the prospective uses of PGPB for long-term soil management. Discuss potential applications beyond soil restoration, such as sustainable agriculture or phytoremediation. Suggest areas for future research to address the knowledge gaps identified in the review.

8. Conclusion:

Revise the conclusion to summarize the key findings and their implications more concisely. Restate the significance of PGPB in soil restoration and its potential for addressing the environmental problem caused by chemical contamination.

9. References:

Ensure that all references are up-to-date and relevant. Cite the most recent studies in the field, and cross-reference them within the manuscript where appropriate.

10. Clarity and Language:

Review the manuscript for clarity and language. Avoid jargon and complex terminology unless defined adequately. Ensure that each section flows logically from one to the next.

Minor Comments:

- Carefully proofread the manuscript for grammatical errors and typos.

- Maintain a consistent citation style throughout the manuscript.

- Ensure that figures and tables are appropriately labeled and referred to in the text.

- Check for consistency in terminology and abbreviations used throughout the manuscript.

Overall Assessment:

The topic of this review is highly relevant, and the manuscript has the potential to contribute significantly to the understanding of using PGPB for soil restoration. However, the major modifications mentioned above are essential to improve the manuscript's clarity, depth, and overall quality. Once these modifications are addressed, the manuscript should be re-submitted for further review.