

### Review Form 3

Journal Name:	<a href="#">International Journal of Plant &amp; Soil Science</a>
Manuscript Number:	Ms_IJPSS_129961
Title of the Manuscript:	<b>Bioremediation of Soil Pollution: A Sustainable Approach to Sustainable Agriculture</b>
Type of the Article	<b>Review</b>

#### **PART 1: Comments**

	<b>Reviewer's comment</b>	<b>Author's Feedback</b> <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<b>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.</b>	This manuscript presents a detailed approach to the bioremediation of soil pollution, which deals with sustainable and scientifically validated pathways to restore soil quality, enhance agricultural productivity, and mitigate environmental risks. Its integration into agricultural practices not only addresses current challenges of soil degradation but also ensures the long-term sustainability of agricultural systems. The scientific community continues to explore innovative bioremediation technologies, making it a cornerstone of sustainable agriculture in the 21st century.	<b>This manuscript presents a detailed approach to the bioremediation of soil pollution</b>
<b>Is the title of the article suitable? (If not please suggest an alternative title)</b>	Yes, title of the article: ' <b>Bioremediation of Soil Pollution: A Sustainable Approach to Sustainable Agriculture</b> ' is completely suitable for this manuscript.	Very Suitable
<b>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.</b>	Yes, the abstract of the article is comprehensive. There is no need to add or delete something in this section.	yes
<b>Is the manuscript scientifically correct? Please write here.</b>	Yes, the manuscript is completely scientifically correct.	yes
<b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b>	I think this section needs modification. At least, 10 to 15 more references are needed in this manuscript. Author should incorporate more recent References like, 2024 and 2023.	Sufficient

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<p><b>Is the language/English quality of the article suitable for scholarly communications?</b></p>	<p>Structure of sentences and grammatical usage are appropriate in every section and I appreciate that the author maintains their standard.</p>	<p>I appreciate that the author maintains their standard.</p>
<p><b>Optional/General</b> comments</p>	<p>The manuscript provides an inclusive overview on Bioremediation of Soil Pollution: A Sustainable Approach to Sustainable Agriculture. The manuscript illustrates about the Bioremediation of soil pollution, which represents a sustainable solution to soil pollution, crucial for restoring soil health and supporting agricultural productivity. By integrating bioremediation into agricultural practices, the scientific community and farmers can work toward a future where agriculture is both productive and environmentally responsible. Bioremediation, an eco-friendly and cost-effective solution, uses biological agents like microorganisms, plants, and fungi to degrade, detoxify, or immobilize contaminants, making it a cornerstone for sustainable agriculture. This approach not only addresses current challenges but also secures the long-term viability of food systems.</p> <p>I have recognized the efforts the Authors have put into this work and the submitted manuscript is OK for 'Accept' after minor improve as pointwise.</p> <ol style="list-style-type: none"> <li>1. <b>Introduction:</b> I appreciate that the author has provided a thorough literature review and comprehensive background information. But this section needs few more references. I appreciate that the author has provided a thorough literature review and comprehensive background information. Introduction part is well-written and soil pollution poses a significant threat to sustainable agriculture, compromising soil fertility, crop yields and overall ecosystem health. As global agricultural demands increase, addressing soil pollution has become a priority. Bioremediation offers a promising, eco-friendly solution to this challenge. As a reviewer, I find the introduction to be well-structured, informative, and engaging.</li> <li>2. <b>Overview of Soil Pollution:</b> This section is exceptionally well-crafted, informative and commendable. But authors are requested to add few more references in this section. Here author explains about soil pollution as well as contamination of soil by harmful substances that adversely affect its quality, fertility, and the ecosystem. These pollutants can originate from natural processes or human activities like, Heavy Metals, Pesticides and Herbicides, Petroleum Hydrocarbons, Industrial Chemicals, Eutrophication, Soil Salinization, Radioactive Materials, Plastic Waste, Pathogens and Infectious Agents, Pharmaceutical and Personal Care Products (PPCPs) and Volatile Organic Compounds.</li> <li>3. <b>Bioremediation: Concept and Mechanisms:</b> This section is very well written by the author. Here author illustrates about sustainable and eco-friendly bioremediation and various mechanism to treat polluted soil by utilizing living organisms, such as microorganisms, plants, or fungi, to degrade, detoxify, or transform contaminants into less harmful substances.</li> <li>4. <b>Bioremediation Techniques in Soil Pollution:</b> This section is very well written and commendable. In this section authors have explained about several Bioremediation Techniques in Soil Pollution briefly (like, Microbial bioremediation, Phytoremediation, Enzyme-Mediated Remediation, Bioaugmentation and Biostimulation).</li> <li>5. <b>Role of Bioremediation in Sustainable Agriculture:</b> This section of the manuscript is very carefully written and the author has stated about various advantages of bioremediation (like, Restoration of Soil Health, Reduction in Chemical Usage, Cost-Effectiveness, Reduction of Pollution, and Promotion of Soil Biodiversity).</li> <li>6. <b>Techniques of Bioremediation:</b> This section of the manuscript is well described. In this section author illustrated about various ex-situ (off-site) and in-situ (in place) bioremediation.</li> </ol>	

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	<p><b>7. Challenges and Limitations of Bioremediation:</b> In this section authors have addressed on various limitations and interrelated challenges for fruitful bioremediation. While bioremediation is a promising and sustainable approach to managing soil pollution, it has several challenges and limitations that can hinder its effectiveness. These include environmental, biological, and technical factors.</p> <p><b>8. Future Prospects:</b> This section is very well written. Bioremediation is a promising approach for addressing environmental pollution in a sustainable and eco-friendly manner. Advances in science and technology are expanding its potential applications and improving its effectiveness. Genetic engineering and biotechnology have seen remarkable progress in recent decades, revolutionizing industries such as healthcare, agriculture, environmental science, and bioenergy. These advancements have enabled precise manipulation of genetic material, development of innovative bioproducts, and solutions to some of the world's most pressing challenges.</p> <p>9. It would be great if the author added an image or schematic diagram or table, so that the manuscript looks more promising.</p>	
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**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(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)</i>
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	