

Review Form 1.7

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	Ms_IJPSS_111329
Title of the Manuscript:	Use of biostimulants in inducing resistance for phytosanitary management: A review
Type of the Article	Review Article

Review Form 1.7

PART 1: Review Comments

	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)
<p>Compulsory REVISION comments</p> <ol style="list-style-type: none"> 1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title) 3. Is the abstract of the article comprehensive? 4. Are subsections and structure of the manuscript appropriate? 5. Do you think the manuscript is scientifically correct? 6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<p>1. The manuscript provides valuable insights into the use of biostimulants in agriculture, specifically focusing on their role in inducing resistance against various pathogens and enhancing plant growth and development. It discusses the diverse categories of biostimulants, including amino acids, humic substances, microorganisms, and algae extracts, highlighting their mechanisms of action and effects on plant metabolism.</p> <p>The research emphasizes the potential benefits of biostimulants in improving nutrient absorption, tolerance to abiotic stresses, and overall crop productivity. It also explores the impact of biostimulants on plant defense mechanisms, such as the activation of resistance genes and the synthesis of pathogenesis-related proteins, shedding light on their role in enhancing plant resistance to diseases caused by fungi, bacteria, viruses, and nematodes.</p> <p>Furthermore, the manuscript presents findings from studies on specific biostimulant compounds, such as growth-promoting mycorrhizal fungi and seaweed extract, showcasing their positive effects on physiological processes and biochemical content in tomato plants. The combination of these biostimulants is highlighted for its additive effects, positively influencing plant quality and performance.</p> <p>In summary, the manuscript contributes to the scientific community by consolidating information on the use of biostimulants for phytosanitary management, providing a comprehensive overview of their mechanisms of action, and presenting experimental evidence of their effectiveness in enhancing plant resilience and productivity. Researchers and practitioners in agriculture may find this manuscript valuable for understanding the potential applications of biostimulants in sustainable crop management strategies.</p> <p>2. The title "Use of Biostimulants in Inducing Resistance for Phytosanitary Management: A Review" is suitable as it accurately reflects the content and focus of the manuscript. However, if you're looking for an alternative title, you might consider:</p> <p>"Biostimulants in Agriculture: Enhancing Plant Resistance for Effective Phytosanitary Management - A Comprehensive Review"</p> <p>This alternative title emphasizes the role of biostimulants in agriculture, their contribution to plant resistance, and the comprehensive nature of the review.</p> <p>3. Yes, the abstract you provided is comprehensive. You should increase the content of the abstract.</p> <p>It succinctly captures the key points of the article, outlining the functions of biostimulants in improving plant metabolism and positively affecting processes such as respiration, photosynthesis, nucleic acid synthesis, and ion absorption. The abstract also highlights the role of biostimulants in enhancing the roots' ability to absorb nutrients and inducing plant resistance to pathogens. The concluding statements emphasize the overall beneficial effects of biostimulants on plant productivity, both in terms of physiological stimulation and disease control. It effectively provides a concise overview of the main findings and contributions of the article.</p> <p>4. No, the provided text doesn't explicitly outline subsections, but it does have a discernible structure with distinct sections.</p> <p>Introduction to Biostimulants (First Paragraph): The manuscript begins with a clear introduction to biostimulants, defining them and highlighting their potential benefits. This serves as a solid foundation for the subsequent discussions.</p> <p>Biostimulant Effects on Plant Metabolism (Second Paragraph): This section delves into the</p>	

Review Form 1.7

	<p>positive effects of biostimulants on various plant metabolisms, emphasizing their impact on respiration, photosynthesis, nucleic acid synthesis, and ion absorption.</p> <p>Types of Biostimulants (Third Paragraph): The text introduces different types of biostimulants, categorizing them into amino acids and protein hydrolysates, humic substances, microorganisms, and algae inoculums and extracts. This provides a systematic breakdown for readers.</p> <p>Biostimulants and Plant Resistance (Fourth Paragraph): The discussion shifts to the role of biostimulants in inducing plant resistance, especially in the context of pathogen attacks. It touches upon the absence of an immune system in plants and how biostimulants contribute to enhanced resistance.</p> <p>Use of Biostimulants in Phytosanitary Management (Subsection 2): The manuscript transitions into a more focused discussion on the use of biostimulants in inducing resistance for phytosanitary management. This subsection provides a clear heading, signaling a shift in the narrative.</p> <p>Biostimulants Under Stress Conditions (Paragraph Seven): This part discusses the use of biostimulants under stress conditions, highlighting their role in combating oxidative stress and improving the plant's defense system.</p> <p>Mechanisms of Inducing Resistance (Paragraph Eight): The text explores the two ways of inducing resistance—acquired resistance and induced resistance. This subsection provides a structured breakdown of these mechanisms.</p> <p>Role of Humic Substances (Paragraph Nine): The focus narrows down to humic substances and their impact on plant metabolism, specifically on root architecture and nutrient absorption.</p> <p>Role of Amino Acids (Paragraph Ten): Amino acids are introduced, detailing their functions in agriculture and their effects on plant growth and development.</p> <p>Microorganisms and Inocula (Paragraph Eleven): This section explores the role of microorganisms as biostimulants and their ecological benefits in agricultural practices.</p> <p>Genus Trichoderma (Paragraph Twelve): The specific example of the genus Trichoderma is discussed, showcasing a well-defined case study.</p> <p>Algae Extracts (Paragraph Thirteen): Algae extracts are introduced as anti-stress agents, emphasizing their positive impact on plant recovery and productivity.</p> <p>Defense Responses to TMV (Paragraph Fourteen): The manuscript provides an example of a study involving defense responses in tobacco leaves to the tobacco mosaic virus, using sulfated fucan oligosaccharides.</p> <p>Study by Gonzalez et al. (Paragraph Fifteen): The final section discusses a study by Gonzalez et al., focusing on the use of biostimulants based on mycorrhizal fungi and seaweed extract on tomato plants.</p> <p>Conclusion and Overall Structure: The text concludes with a summarizing paragraph discussing the general positive effects of biostimulants and their potential in agricultural practices.</p> <p>Overall, the manuscript has a well-structured flow, moving from general introductions to specific examples and case studies. It covers various aspects of biostimulants and their applications in a logical sequence, providing a comprehensive overview.</p>	
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Review Form 1.7

	5. yes 6. Sufficient but all references should be sourced from recent studies, and they should follow a consistent format.	
Minor REVISION comments 1. Is language/English quality of the article suitable for scholarly communications?	The language and English quality of the article appear to be suitable for scholarly communications. The text is well-structured, and the language used is clear and concise.	
Optional/General comments	Not required	

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?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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