ISSN: 2320-5407

ISSN NO. 2320-5407

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Manuscript No.: IJAR-50680 Date: 17-03-2025

Title: In vitro Effect of Copper Oxychloride Nanoparticles on Fusarium Wilt Disease Resistance in Solanum lycopersicum Through Seedling Root Treatment

Recommendation:
Accept as it is……**YES……**
Accept after minor revision……
Accept after major revision ……
Do not accept (*Reasons below*) ……

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

Reviewer's Name: Dr Aamina

Reviewer's Decision about Paper: **Recommended for Publication.**

Comments (*Use additional pages, if required*)
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Reviewer's Comment / Report

This study presents a significant investigation into the potential use of copper oxychloride (COC) nanoparticles and silver (Ag)-doped COC nanoparticles for managing *Fusarium oxysporum*-induced wilt in tomato plants. The research is well-structured, with a clear focus on evaluating the antifungal efficacy and resistance-inducing properties of these nanoparticles through the root dip method.

The abstract effectively summarizes the study's objectives, methodology, and key findings. It highlights the importance of *Fusarium oxysporum* as a major pathogen affecting tomato crops and establishes the relevance of nano-based solutions in disease management. The incorporation of both COC and Ag-doped COC nanoparticles adds depth to the study, providing insights into potential enhancements in disease resistance mechanisms.

The methodology appears sound, particularly with the assessment of antifungal activity, minimum inhibitory concentration, and chlorophyll and carotenoid estimation as comparative indicators of plant health. The use of an 8 mg concentration of nanoparticles to improve root and shoot growth while mitigating wilt symptoms is a promising finding, demonstrating the potential of this treatment as an early-stage disease resistance strategy.

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The study's results offer valuable contributions to the field of plant pathology and nano-agriculture by showcasing a rapid and effective method for screening induced resistance in tomato seedlings. The discussion presents the synergistic effects of nanoparticles in mitigating fungal infections, reinforcing the significance of nanoparticle-based approaches in sustainable crop protection.

Overall, the article is well-structured, with a clear scientific approach and relevant findings that could have practical implications for disease management in tomato cultivation. The research provides a strong foundation for further exploration of nano-based strategies in agricultural disease control.