

Review Form 3

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_124246
Title of the Manuscript:	PERFORMANCE EVALUATION OF MINI-SPRINKLER IRRIGATION SYSTEM UNDER DIFFERENT PRESSURES AND SPACINGS
Type of the Article	Original Research Article

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<ul style="list-style-type: none"> ○ Pressure-Distribution Relationship: The research effectively illustrates how different operating pressures (1.0 to 2.5 kg/cm²) impact both the distribution uniformity and the radius of coverage. The findings provide practical guidance on optimal pressure settings for achieving desired water distribution, with the highest uniformity at 2.5 kg/cm². ○ Spacing Impact on Efficiency: The study clearly highlights the influence of sprinkler spacing on system efficiency. Larger spacing (9 m x 9 m) leads to reduced distribution uniformity at lower pressures, emphasizing the need for closer spacing or higher pressure to maintain efficiency. This is critical for ensuring water-saving and uniform application in field operations. ○ Application Rate Considerations: The variations in application rates (ranging from 4.5 mm/h to 10.1 mm/h) at different spacing and pressures are well-documented. This can be vital for determining the ideal configuration in water-limited regions where precise control over application rates is essential for crop water requirements. ○ Jet Break-up Index: The inclusion of the jet break-up index as a parameter from 2.24 to 4.1 provides insight into how well the sprinkler system breaks up the water stream under varying pressures. This parameter is important for understanding droplet formation and potential evaporation losses. ○ Radius and Area of Coverage: The detailed analysis of the radius and area of coverage at different pressures is useful for real-world applications. The study helps users understand how to optimize sprinkler placement to maximize the effective irrigation area, which has direct implications for irrigation system design. ○ Statistical Validation: The research employs significant statistical analysis, particularly in identifying meaningful differences in performance across various configurations. This enhances the credibility of the findings and provides a robust foundation for recommending specific sprinkler configurations based on operational conditions. 	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	Yes	

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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.	Yes	
Are subsections and structure of the manuscript appropriate?	Yes	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	The study effectively evaluates mini sprinkler performance across different pressures and spacings, offering valuable insights. However, some areas could benefit from refinement. The jet break-up index could be explored more deeply to assess its influence on evaporation and wind drift. Additionally, the study's recommendation for larger spacing (9 m × 9 m) at higher pressures might not be applicable in wind-prone areas, which should be highlighted. The statistical analysis is strong, but more clarity on the significance of results (p-values, confidence intervals) would enhance the credibility. Lastly, further discussion on economic feasibility and long-term maintenance of the system under varying conditions would help farmers make more informed decisions when implementing these recommendations.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	Add more references	
Minor REVISION comments	yes	
Is the language/English quality of the article suitable for scholarly communications?		
Optional/General comments		

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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