

Review Form 3

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_120996
Title of the Manuscript:	HYDROGEL IN DRYLANDS: A REVIEW
Type of the Article	Review Article

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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>
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.	The manuscript is important for the scientific community because it explores the use of hydrogels to combat moisture stress in drylands, which affects over 60% of India's cultivated land. Hydrogels, with their ability to retain significant amounts of water and nutrients, can reduce irrigation frequency and improve crop productivity and sustainability. The manuscript provides a detailed overview of the properties, benefits, and environmental safety of hydrogels, emphasizing their potential to enhance water use efficiency and soil health in agriculture. This research is valuable for advancing sustainable agricultural practices in arid regions.	
Is the title of the article suitable? (If not please suggest an alternative title)	Yes, the title is suitable. It clearly indicates that the article focuses on the use of hydrogels in dryland agriculture and signals to readers that it is a comprehensive review on the subject. This title effectively conveys the central theme and scope of the manuscript.	
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.	The abstract of the article is comprehensive but can be improved with more specific details. Suggested additions include quantitative data on hydrogel benefits, environmental safety aspects, types of crops and soils tested, and identified research gaps. A revised abstract could highlight that hydrogels can absorb up to 400 times their weight in water, improve crop yields by 10-50%, and reduce irrigation frequency by 30-50%, all while being biodegradable and non-toxic. These enhancements would make the abstract more informative and complete.	
Are subsections and structure of the manuscript appropriate?	The manuscript's structure is appropriate and well-organized, with clear sections covering key aspects of hydrogel use in agriculture. It includes an introduction, detailed discussions on the characteristics and structure of hydrogels, their effects on water use efficiency and root activities, and their application in agriculture. Subsections on environmental safety and methodology enhance clarity. The logical progression of ideas and inclusion of experimental results make the manuscript easy to follow and informative for the scientific community.	
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 manuscript demonstrates scientific correctness through its detailed examination of hydrogel properties, supported by extensive references to peer-reviewed studies and experimental data. It systematically explores the impact of hydrogels on water retention, soil health, and crop productivity, ensuring a comprehensive understanding of their benefits. The methodology is clearly outlined, allowing for reproducibility and validation of results. Furthermore, the manuscript addresses environmental safety concerns, confirming that the use of hydrogels is both effective and ecologically responsible. These aspects collectively underscore the manuscript's scientific robustness and technical soundness.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. :	The references are generally sufficient, covering the historical context, key characteristics, applications, and benefits of hydrogels comprehensively. The key studies and findings are well-represented, providing a thorough understanding of the subject. However, while the review includes some recent references, such as Aswathy et al. (2020), Habib et al. (2015), and Varaprasad et al. (2017), adding more references from the last 2-3 years would improve the recency and relevance of the review. To further strengthen the review, it is suggested to include recent advances and innovations in hydrogel technology, particularly from the past 2-3 years, as well as comparative studies between different types of hydrogels and other water retention techniques.	

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<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language and English quality of the article "Hydrogel in Drylands: A Review" are mostly appropriate for scholarly communications. The text is generally clear, and the use of technical terms and explanations is suitable for an academic audience. However, there are areas where the language could be refined for better readability and precision. To improve the article, ensure that technical terms are used consistently throughout the text, such as "super absorbent polymer" and "hydrophilic polymer." Review the document for grammatical errors and punctuation issues, as some sentences are lengthy and could be broken down for better readability. Maintain a formal and objective tone, avoiding informal language or subjective statements. Ensure that each section flows logically into the next, using transitional phrases to connect ideas and make the progression of information clear. Verify that all references are correctly cited and formatted according to the journal's guidelines, and ensure that the references are recent and relevant to support the current state of research in the field. By addressing these areas, the article can be made more suitable for scholarly communication, meeting the standards expected in academic publications.</p>	
<p><u>Optional/General</u> comments</p>		

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

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