

Review Form 3

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|--------------------------|--|
| Journal Name:            | Archives of Current Research International                 |
| Manuscript Number:       | Ms_ACRI_126393   |
| Title of the Manuscript: | Advancements in Hydroponic Systems: A Comprehensive Review |
| Type of the Article      | Review   |

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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.                        | This review has synthesized significant advancements and innovations in hydroponic systems, showcasing a transformative journey from traditional agriculture to highly efficient and sustainable food production methods. The evolution encompasses key developments in nutrient solutions, disease management, and alternative growing media, underscoring a robust foundation for modern hydroponics. Technological steps in automation, IoT integration, and LED lighting have further revolutionized the field, enhancing productivity and resource utilization.   | Yes, Thanks for your review.   |
| Is the title of the article suitable? (If not please suggest an alternative title)  | The title is quite general. To make it more specific, consider adding a descriptor such as "Technological Advancements" or "Recent Developments" to better reflect the focus on recent innovations.  | That's why we use the term "advancement," which encompasses new technology.  |
| 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.   | <p>The first sentence could be rephrased for conciseness. Consider combining the general definition with the context of modern applications. For example, "Hydroponics, the soilless cultivation of plants using mineral nutrient solutions, has become central to modern agricultural innovation."</p> <p>The transition between topics could be smoother, especially between the discussion of traditional benefits and technological advancements.</p> <p>The sentence "These benefits are critical in addressing modern agricultural challenges such as soil degradation, water scarcity, and the need for increased food production..." partially repeats the benefits mentioned earlier. It could be condensed to avoid redundancy.</p> <p>The statement about new opportunities lacks specific examples of opportunities created. Adding a sentence about opportunities in urban agriculture or climate-controlled farming would clarify this point.</p> <p>NFT, DWC, and other systems are introduced, but it's not clear if these are discussed in terms of recent innovations or just mentioned as categories. Consider specifying what advancements have been made within each system.</p> <p>The mention of IoT, machine learning, and smart farming could benefit from a clearer explanation or definition for a broader audience. Adding brief descriptions of each technology's relevance to hydroponics might help.</p> <p>Economic and Environmental Considerations: These points are briefly mentioned but lack specific examples or metrics (e.g., percentage water saved compared to soil agriculture, economic impact metrics). Providing some quantitative or case-study references would strengthen this section.</p> | <p>Hydroponics is itself a new technology for growing plants, so we avoid using the term "new technology." We prefer to keep things simple.</p> <p>Since this is a brief review article, we keep the discussion concise.</p> |
| 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. | <p>This manuscript appears scientifically robust and technically sound due to its comprehensive review of recent advancements in hydroponic systems, but it must be improved.</p> <p>Some sections could benefit from further clarification. For instance, a more detailed explanation of the mechanisms by which CO<sub>2</sub> enrichment enhances photosynthesis could strengthen the section on environmental optimization. Also, while specific studies are cited, more recent sources could add depth, particularly in sections discussing IoT advancements.</p> <p>Please, add some pictures with the analyzed systems.</p>   | Thanks.  |
| Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.<br>:  | <p>Yes.</p> <p>I recommend to add the following reference:<br/>Țălu, Ș. (2024). Insights on Hydroponic Systems: Understanding Consumer Attitudes in the Cultivation of Hydroponically Grown Fruits and Vegetables. In: "Magazine of Hydraulics, Pneumatics, Tribology, Ecology, Sensorics, Mechatronics (HIDRAULICA)", 1, 56-67.</p>   | Ok thanks we will add this reference in future.  |

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| Minor REVISION comments   |  |  |
| Is the language/English quality of the article suitable for scholarly communications? |  |  |
| Optional/General comments   |  |  |

PART 2:

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|--|---|---|
|  | 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? | (If yes, Kindly please write down the ethical issues here in details) |   |