Review Form 3

Journal Name:	**Asian Journal of Soil Science and Plant Nutrition**
Manuscript Number:	**Ms_AJSSPN_128874**
Title of the Manuscript:	**Soil Wetness Classification in Agriculture using Machine Learning Models**
Type of the 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.
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PART 1: Comments

	Reviewer's comment	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.		
Is the title of the article suitable? (If not please suggest an alternative title)		
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.		
Is the manuscript scientifically, correct? Please write here.		
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.		

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Is the language/English quality of the article suitable for scholarly communications?		
Optional/General comments	**Comments: This Paper is clearly written and well organized**. The **abstract, introduction, literature survey is reasonable given the premise of the paper. Figures and results which are provided are efficient based on the today's condition. Overall the information presented represents valuable information is feasible; Strengths:** 1. **Relevance of the Topic**: The paper addresses a critical issue in agriculture—monitoring soil wetness—which has significant implications for plant health and crop production. 2. **Innovative Approach**: The use of an image-based soil wetness classifier is a novel and promising solution to a persistent agricultural challenge. 3. **Comprehensive Evaluation**: The inclusion of multiple machine learning algorithms and the comparative analysis adds depth and credibility to the study. 4. **Impressive Results**: Achieving 97.7% accuracy with a convolutional neural network is a notable accomplishment and demonstrates the efficacy of the proposed method. 5. **Practical Utility**: The study has clear real-world applications, providing a valuable tool for stakeholders to optimize crop production. **Suggestions for Improvement:** 1. **Dataset Details**: It would be helpful to include more details about the dataset used, such as its size, diversity, and any preprocessing steps. This is crucial for understanding the robustness of the model. 2. **Feature Engineering**: Discuss whether feature engineering was performed for algorithms other than CNN, as this could influence their comparative performance. 3. **Validation Methodology**: Clarify the cross-validation or train-test split approach used to evaluate the algorithms to ensure the reported accuracy is reliable. 4. **Scalability and Implementation**: Elaborate on how the proposed method can be scaled for large agricultural fields and integrated into real-world systems. 5. **Challenges and Limitations**: A discussion of challenges faced, such as variations in soil texture, lighting conditions in images, or other external factors, would strengthen the paper. 6. **Comparison with Existing Solutions**: Providing a comparison with other soil wetness detection methods would highlight the novelty and effectiveness of the proposed approach. **Minor Edits:** 1. **Clarity**: In the line "have used five machine learning algorithms for classifying the soil wetness levels as an artificial neural network, convolutional neural network, decision tree, k-nearest neighbor, and support vector machine," revise to: "have used five machine learning algorithms: artificial neural network, convolutional neural network, decision tree, k-nearest neighbor, and support vector machine." 2. **Grammar**: Replace "increased crop production by ensuring proper soil water levels" with "increase crop production by maintaining optimal soil moisture levels." 3. **Terminology**: Use consistent terminology such as "soil moisture" or "soil wetness" throughout the text for better readability. **Overall Recommendation:**The study presents a compelling and practical solution to soil wetness monitoring. With additional details and refinements, the work has strong potential for publication in journals related to agricultural technology or machine learning applications.	

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

Reviewer Details:

Name:	**Prasanna Lakshmi G S**
Department, University & Country	**Nagarjuna College of Engineering & Technology, India**