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# REVIEWER'S REPORT

**Manuscript No.: JNAVS -034**

**Title: PRECISION AGRICULTURE TECHNOLOGIES FOR ENHANCING CROP YIELD AND RESOURCE EFFICIENCY: A COMPREHENSIVE REVIEW.**

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

| Rating | Excel. | Good | Fair | Poor |
|---|---|---|---|---|
| Originality | | ✓ | | |
| Techn. Quality | ✓ | | | |
| Clarity | ✓ | | | |
| Significance | ✓ | | | |

**Reviewer Id: JPR-137**

## Reviewer's Comment for Publication.

The manuscript provides a comprehensive review of precision agriculture technologies and their role in improving crop productivity, resource-use efficiency, and sustainable agricultural development. The topic is highly significant due to increasing challenges related to food demand, climate variability, resource limitations, and the need for efficient farming systems. The manuscript effectively discusses important technologies including GPS, GIS, remote sensing, drones, sensors, and data analytics, along with their applications in modern agriculture.

Strengths:

1. The manuscript addresses an emerging and highly relevant area in agricultural science and digital farming.
2. The article is well organized with a logical flow from concepts and technologies to applications, benefits, challenges, and future perspectives.
3. The explanation of major precision agriculture technologies is clear and informative.
4. The manuscript highlights practical applications such as precision irrigation, variable rate technology, nutrient management, and pest monitoring.
5. The discussion of artificial intelligence, IoT, and autonomous farming technologies provides good insight into future agricultural development.

Minor Revisions Suggested:

1. Include more recent research articles (2020–2025) to reflect current advancements in precision agriculture, artificial intelligence, and smart farming technologies.
2. Provide quantitative evidence or case studies showing improvements in yield, water savings, fertilizer efficiency, and economic benefits achieved through precision agriculture.
3. Add a comparative table summarizing different technologies, their applications, advantages, limitations, and adoption requirements.

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4. Expand the discussion on challenges faced by small and medium-scale farmers, including affordability, digital literacy, and accessibility issues.
5. Include more information on data security, privacy concerns, and challenges related to management of large agricultural datasets.
6. Strengthen the Future Prospects section by discussing integration of machine learning, robotics, autonomous systems, and Internet of Things (IoT) in greater detail.
7. Improve consistency in formatting, heading structure, and reference presentation.

Overall Assessment:

The manuscript presents a valuable overview of precision agriculture technologies and their contribution to sustainable farming, improved productivity, and efficient resource management. The review is relevant, clearly written, and provides useful information for researchers and agricultural professionals. Incorporation of the suggested revisions will improve the scientific depth, practical relevance, and overall quality of the manuscript.

Recommendation: Accept after Minor Revision.