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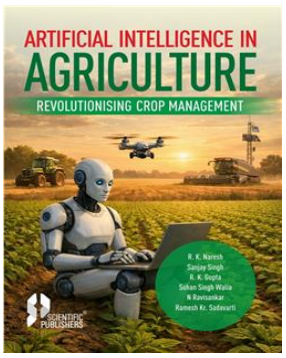
# Artificial Intelligence in Agriculture: Revolutionising Crop Management

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| ISBN | : 9789363461529 | Book Format | : Book |
| | | Binding | : Hard Bound |
| Language | : English | Edition | : 1 |
| Imprint | : Scientific Publishers | © Year | : 2026 |
| Pages | : 617 | Trim Size | : 7 x 9 |
| Weight | : 1100 Gms | | |
| Book Type | : Reference Book | | |
| Release | : New | | |


**Print Book** : ~~₹3,250.00~~ ₹2,925.00 10%Off

**Blurb**

Artificial intelligence (AI) is revolutionising modern agriculture, providing innovative solutions for crop management and transforming traditional farming practices. The book *Artificial Intelligence in Agriculture: Revolutionising Crop Management* delves into how AI-driven technologies are enhancing productivity, resource efficiency, and sustainability. By integrating machine learning, computer vision, and big data analytics, AI enables precision farming, where real-time monitoring and predictive analysis optimise decision-making for farmers. This advancement not only minimises input costs but also maximises yields by accurately predicting soil health, weather patterns, and pest infestations.

The book explores the role of AI-powered drones and autonomous machinery in field operations, reducing manual labour and increasing efficiency. These smart technologies enable targeted interventions, such as site-specific pesticide applications and automated irrigation, leading to more sustainable farming practices. AI-driven sensors and Internet of Things (IoT) devices continuously collect and process vast amounts of data, providing actionable insights that help in resource conservation and climate-resilient agriculture. AI applications in genetic research and plant breeding are also accelerating the development of high-yield, climate-adaptive crops, thereby addressing global food security challenges.

Furthermore, the book highlights real-world case studies where AI has successfully improved farm productivity and reduced environmental impact. It also examines challenges such as data privacy, technological accessibility for small-scale farmers, and the need for policy frameworks to regulate AI-driven agriculture. The discussion extends to the ethical implications of AI in food production and the potential for bridging gaps between technology and traditional farming knowledge. With rapid advancements in AI, this book provides a comprehensive understanding of how intelligent systems are shaping the future of agriculture, making farming smarter, more efficient, and sustainable for the next generation.

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Scientific Publishers Date :- Sat May 16 2026