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Healthy Horticulture, Higher Profit: Smart Pest & Disease Management Secrets

Authors

Pujarani Rath¹, Nikitasha Dash², Saisweta Behera³,
Swagatika Patel⁴, Dr. Ankit Kumar Singh⁵

¹Ph.D Scholar, Department of Fruit Science and Horticulture Technology, College of Agriculture, OUAT, Bhubaneswar, Odisha.

²Ph.D Research Scholar, Department of Fruit Science and Horticulture Technology, College of Agriculture, Odisha University of Agriculture and Technology, Bhubaneswar, Odisha.

³M.Sc. Scholar, Department of Fruit science and Horticulture Technology, College of Agriculture, OUAT, Bhubaneswar, Odisha.

⁴M.Sc. Scholar, Department of Fruit science and Horticulture Technology, College of Agriculture, OUAT, Bhubaneswar, Odisha.

⁵Assistant Professor, Department of Entomology, Mandsaur University, Mandsaur, Madhya Pradesh.

INTRODUCTION

Healthy crops are the foundation of profitable horticulture. Pests and diseases significantly reduce yield and quality, leading to economic losses. Smart pest and disease management focuses on early detection, eco-friendly control, and efficient resource use to ensure sustainable production and higher profits. Pests and diseases can reduce horticultural yield by 20-40% or more, affecting both quality and market price. Effective management ensures healthy crops, better quality produce, and higher profits.

Modern approaches emphasize Integrated Pest Management (IPM), which combines cultural, biological, mechanical, and chemical methods to keep pests below economic damage levels while minimizing environmental harm.



Why Smart Management is Important

- Prevents heavy crop losses and improves quality
- Reduces excessive pesticide use and production costs

- Ensures safe, residue-free produce
- Protects beneficial organisms and biodiversity
- Enhances long-term soil and ecosystem health

Common Pests & Diseases in Horticulture

- **Insect pests:** Aphids, whiteflies, thrips, fruit borers
- **Diseases:** Powdery mildew, blight, wilt, leaf spot
- **Causes:** Fungi, bacteria, viruses, and nematodes

Smart Pest & Disease Management Secrets

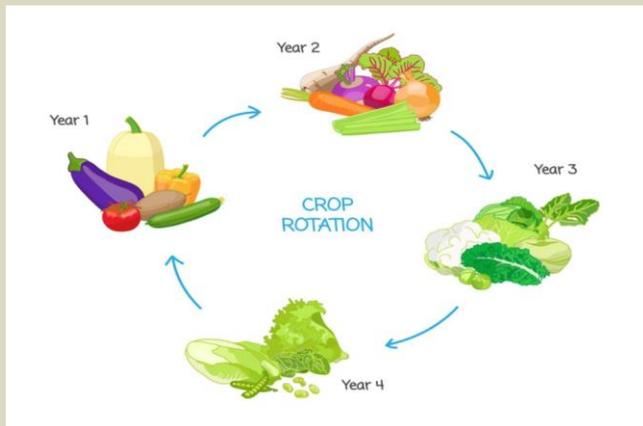
1. Regular Monitoring & Early Detection

- Inspect crops frequently for symptoms
- Use pheromone traps, sticky traps, and field scouting
- Early identification helps timely control



2. Cultural Practices

- Crop rotation and intercropping
- Use of resistant varieties
- Proper spacing and sanitation
- Healthy soil reduces disease incidence



3. Biological Control

- Use natural enemies (ladybird beetles, parasitoids)
- Apply bio-pesticides like neem-based products
- Maintains ecological balance



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4. Mechanical & Physical Methods

- Hand removal of pests
- Light traps and sticky traps
- Use of nets and barriers

5. Judicious Chemical Use

- Apply pesticides only when necessary
- Follow recommended doses and timing
- Avoid overuse to prevent resistance and residues

6. Smart Technologies

- Use sensors, drones, and AI tools for pest detection
- Mobile apps help in disease diagnosis
- Precision spraying reduces input cost and wastage

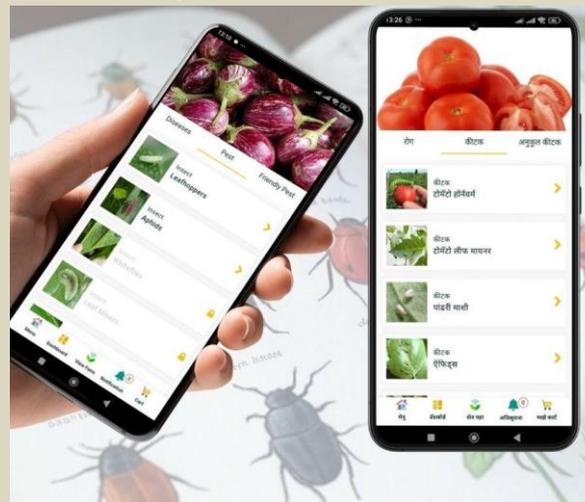


Table: Smart Pest & Disease Management Practices

Management Method	Key Practices	Benefits
Monitoring	Field scouting, traps, surveillance	Early detection, timely action
Cultural Control	Crop rotation, sanitation, spacing	Reduces pest buildup naturally
Biological Control	Natural predators, bio-	Eco-friendly, sustainable

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	pesticides	
Mechanical Control	Traps, hand picking, barriers	Low cost, immediate effect
Chemical Control	Need-based pesticide use	Quick control when necessary
Smart Technologies	AI tools, sensors, drones	Precision farming, cost reduction

CONCLUSION

Adopting smart pest and disease management practices helps in maintaining healthy crops and better quality produce. It reduces unnecessary input costs by minimizing excessive pesticide use. Timely and effective management leads to higher yields and increased profits. These practices also ensure safer, residue-free food for consumers. By combining traditional knowledge with modern technologies, farmers can improve efficiency. It promotes sustainable horticulture and protects the environment. Beneficial organisms and soil health are also conserved. Overall, it leads to long-term productivity and economic stability for farmers.

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