



## Digital Tools Strengthen Sustainable Pest Management, Study Finds

A recent study has highlighted the increasing importance of digital technologies in supporting sustainable pest management and Integrated Pest Management (IPM) programs worldwide. Researchers found that tools such as mobile advisory applications, digital monitoring platforms, remote sensing technologies, and decision-support systems are helping farmers detect pest outbreaks earlier and make more informed management decisions.

The study reported that digital tools can improve pest surveillance, early warning systems, and field-level monitoring, enabling growers to respond quickly to emerging pest threats. By providing real-time information on pest populations and crop conditions, these technologies can help optimize pesticide use, reduce unnecessary applications, and support environmentally responsible crop protection practices.

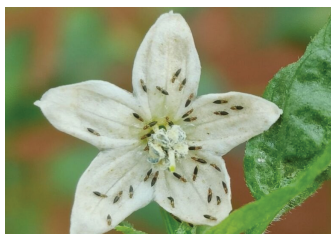


Image Credit: CABI

Researchers also noted that wider adoption of digital agriculture technologies could contribute to higher productivity, reduced crop losses, and improved food security. However, they emphasized that effective implementation will require farmer training, improved digital literacy, reliable internet connectivity, and accessible technology platforms for rural communities.

The findings reinforce the growing role of digital innovation in modern IPM strategies, where technology is increasingly being used to combine monitoring, forecasting, and data-driven decision-making for more sustainable and efficient pest management.

## IPM PROFESSIONAL



**MR. SAEED UR REHMAN**  
Stored Products Fumigation Expert  
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An expert pest control professional with over 15 years of specialized experience in stored product fumigation, he has earned a strong reputation as a nationwide expert in the pest control industry delivering standards-compliant fumigation solutions.

His expertise includes stored-grain protection, warehouse and regulatory compliance. Mr. Saeed is committed to maintaining the highest industry standards while prioritizing safety, and operational excellence in every project he undertakes.

## University of Agriculture Faisalabad Expands Scholarship Opportunities for New Entrants



### EXCITING NEWS

## Financial Assistance Opportunities

The University of Agriculture Faisalabad has announced an extensive Scholarship Calendar for newly admitted students, reaffirming its commitment that **"No Student Will Be Denied Due to Financial Constraints."**

Through its Directorate of Financial Assistance and University Advancement, the university offers a wide

range of merit-based, need-based, government funded, international, and alumni-supported scholarships to help deserving students pursue higher education without financial barriers.

According to the university, the scholarship portfolio is designed to support talented students from

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diverse academic and socio economic backgrounds. Available opportunities include national scholarship schemes funded by the Government of Pakistan, Higher Education Commission (HEC), provincial governments, foreign partners, and university alumni. The initiative reflects UAF's ongoing efforts to promote equitable access to quality education and strengthen human resource development in Pakistan.

The university has also appealed to philanthropists and alumni to contribute to its Zakat-o-Sadaqat Collection Fund, enabling additional financial assistance for deserving students. Complete scholarship details, eligibility criteria, and application procedures are available through the university's official Scholarship Calendar.

Scholarships Available

- Honhaar Undergraduate Scholarship Program
- HEC Need-Based Scholarship Program (World Bank Funded)
- Pakistan Bait-ul-Mal Scholarship
- Allah Wale Trust (AWT)
- Pakistan Scottish Scholarship Scheme (PS3) – British Council
- Punjab Educational Endowment Fund (PEEF) – Master's Level
- Professional Education Fund (PEF)
- Ihsan Hashmi Scholarship
- Interloop Need-Based Scholarship
- Pak-Sri Lanka Higher Education Cooperation Program
- OIC Under Project Academic & Research Linkage
- USA North American Alumni Associations Scholarship
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NATURE-BASED SOLUTIONS FOR RESILIENT RICE AGRO ECOSYSTEMS:  
A REVIEW OF ECOLOGICAL INSECT PEST MANAGEMENT AND  
BIODIVERSITY CONSERVATION

Abstract

The Green Revolution expanded global rice production but introduced systemic environmental vulnerabilities by eroding biodiversity and natural pest regulation. This critical review examines the strategic transition from pesticide-intensive cultivation to nature-based solutions (NbS) that prioritize ecological resilience. We synthesize diverse strategies, including ecological engineering, microbial tools, and integrated rice-animal farming, to demonstrate their collective efficacy in maintaining stable yields.

Environmental manipulation through flowering strips supports a robust natural enemy complex, including the mirid bug (*Cyrtorhinus lividipennis* (Reuter)) and the egg parasitoid wasp. Furthermore, we evaluate the pivotal role of botanical insecticides from the neem tree (*Azadirachta indica* A. Juss.) and the sugar apple (*Annona squamosa* L.), alongside soil amendments like biochar, to induce systemic host resistance via silicon-mediated defenses.

Crucially, we highlight how microbial biopesticides, including the entomopathogens Bt (*Bacillus thuringiensis* Berliner), green muscardine fungus (*Metarhizium anisopliae* (Metschn.) Sorokin), and specialized granuloviruses, work in synergy with animal co-cultures involving the domestic duck (*Anas platyrhynchos domesticus* L.) and the common carp. Together, these synchronized interventions establish multi-layered barriers against major pests like the brown planthopper and the yellow stemborer.

By aligning cultural, biochemical, and biological practices, these solutions foster functional biodiversity and self-regulating mechanisms, providing a resilient framework for the long-term sustainability of global rice agriculture amidst shifting climatic challenges.

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NPMA LAUNCHES COLLEGE WORKFORCE INITIATIVE TO ATTRACT FUTURE PEST MANAGEMENT PROFESSIONALS

The National Pest Management Association (NPMA) has launched a new workforce development initiative aimed at introducing college students to career opportunities in the professional pest management industry. The program seeks to strengthen the industry's talent pipeline by partnering with colleges and universities to raise awareness of the diverse career paths available in pest management.

The initiative will connect students with pest management companies through career fairs, campus outreach, educational programs, internships, and networking opportunities, providing firsthand exposure to careers in technical services, operations, sales, research, business management, and public health. NPMA hopes the program will help address the industry's growing workforce needs while encouraging the next generation of skilled professionals to enter the sector.

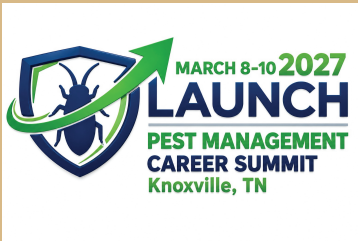


IMAGE CREDIT: NPMA

According to NPMA, the initiative reflects the association's long-term commitment to workforce development and ensuring a sustainable future for the pest management profession. By engaging students early in their academic careers, the program aims to build stronger connections between higher education institutions and the pest management industry, supporting innovation, professional growth, and continued excellence across the sector.





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