



CABI News Bulletin Asia

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News and Stories

CABI wins Global Innovators Award at Better Cotton Conference 2024



CABI has won the Innovators Award 2024 at the annual Better Cotton Conference in Istanbul, gaining recognition for its contribution to supporting farmers in Pakistan, helping them to improve their economic, environmental and social well-being.

Better Cotton CEO, Alan McClay, presented the award to CABI during the annual conference which took place from 24-28 June. CABI's Global Director for Value Chains and Trade, Neil Willsher, collected the award on behalf of Dr Babar Bajwa, CABI's Senior Regional Director for Asia, for the work he has led with CABI's team in Punjab and Sindh Province over the past 10 years.

This prestigious award recognizes not only CABI, but also the many partners involved in the project implementation.

CABI is working with farmers at the field level in Punjab and Sindh, two major cotton growing regions in Pakistan. Through the project, small



CABI's Global Director for Value Chains and Trade, Neil Willsher, collects Global Innovators Award on behalf of Dr Babar Bajwa from Better Cotton CEO, Alan McClay (© Better Cotton).

holders are supported in sustainable cotton production practices. Innovations include looking at ways to better manage soil health, integrate modern water conservation technologies, and manage natural habitats through knowledge sharing and training.

The project also promotes women's empowerment through the development of

female entrepreneurship. Women's businesses developed under the project now help to generate sustainable incomes through goat farming, kitchen gardening, and sewing and tailoring.

Furthermore, female workers have been trained in better cotton picking, health and safety, female empowerment and prevention of child labour. The work has improved the lives of many women and their communities.

Innovating to address crop pests and boost cotton yields

The project is already delivering concrete results. CABI has enhanced the capacity of over 31,000 Better Cotton farmers, helping them to implement the Better Cotton Standard System. Farmers have learnt valuable skills to protect their cotton crops from harmful insect pests and diseases.

Training has covered critical practices such as increasing soil fertility using compost and routine observation and testing to provide the correct soil nutrients. Farmers also received training in biological control, specifically developing field reservoirs of beneficial insects – natural enemies that control crop pests. Farmers have learnt how to conserve natural habitats on farms and make better use of water resources, for example ridge sowing. The land focused on within the project totalled almost 89,000 hectares and produced almost 79,000 metric tonnes of better cotton lint.

An annual event to recognize achievements in Better Cotton production

Around 300 people attended the conference, including staff from the Better Cotton project and members from the textile value chain, from cotton ginners and producers to global brands and development partners such as CABI.

The event spanned three days, focusing on production, traceability, certification, climate change, gender equity and integrated landscape management approaches all with an underlying theme to improve livelihoods. The conference's work sessions included:



- Living income – what does effective farmer remuneration look like?
- Producers' organizations as partners and levers for change
- Harvesting hope, navigating daily challenges and social barriers as women farmers in Pakistan
- Do carbon markets make sense for smallholders?
- Accelerating gender actions and innovations
- Harvesting success – unveiling the role of standards for Regen Agri
- Traceability: what role can certification play?
- Introduction to first mile traceability in Pakistan (CABI & Reed)

While a global vision for change in cotton farming is essential, understanding local challenges and realities is equally crucial.

Another key takeaway was the focus on 'action over perfection'. Speakers highlighted the necessity of taking risks and not delaying efforts to accelerate impact in the cotton sector.

Involving farmers in policymaking was underscored to ensure policies have practical effects. Notably, the conference recognized increased participation from farmers and trainers. Gender equity was another focal point, with calls to integrate a 'gender lens' in all cotton industry activities to address the unique barriers women face.

Under the theme 'Pay more to get more', the conference advocated for increased investment to achieve greater impact. Participants shared success stories, collaborative efforts, and progress, expressing optimism for the industry's collective future.

CABI wins FAO Partnership Award 2024 in recognition of efforts towards sustainable development



CABI has won the **FAO Partnership Award 2024** in recognition and reward of its noteworthy and effective partnerships that contribute to achieving sustainable development around the world.

The **Food and Agriculture Organization of the United Nations (FAO)** bestowed the honour on CABI and the **Ulsan Metropolitan University** to mark strong partnerships and cooperation with governments, the private sector, civil society, and academia.

Both CABI and Ulsan Metropolitan University, in South Korea, successfully demonstrated their efforts related to the FAO's mandate which includes improving people's lives through the **Sustainable Development Goals (SDGs)**.

The Award was presented by the FAO's Director-General Dr Qu Dongyu to **Dr Janny Vos**, CABI's Partnerships Development Director, at a ceremony held at the FAO's Headquarters in Rome, Italy.

Improve the livelihoods of 500 million smallholder farmers

The accolade comes after **CABI, and the FAO, in October 2023 signed a Memorandum of Understanding (MoU)** to work together and improve the livelihoods of 500 million smallholder farmers while easing the global food crisis.

This partnership alone is seeing CABI and the FAO working more closely together to help strengthen plant production and protection for sustainable crop production systems. It is also helping to improve science and evidence-informed policy processes and science communication.

It builds upon CABI's work in collaboration with its **48-Member Countries**, donors and other partners, to help alleviate hunger, poverty, gender inequality, climate change, and diversity loss as outlined in its member-led **Medium-Term Strategy 2023-2025**.

One example of joint efforts between CABI and the FAO – to help smallholder farmers grow more and lose less to crop pests and diseases – is by supporting the **Southern African Development Community (SADC) Regional Agricultural Policy**.

This is aimed at tackling prioritised crop pests in its 16 Member countries through building the knowledge and capacity on pest risk analysis and phytosanitary measures necessary to help ensure greater food security.

Revolutionizing agrifood systems



Dr Janny Vos, CABI's Partnerships Development Director, speaking in acceptance of the FAO Partnership Award – photo ©FAO/Giulio Napolitano.

Dr Vos, in accepting the Award on behalf of CABI, said, "CABI is honoured to accept the FAO Partnerships Award which recognises the work of CABI and its Member Countries who play a key role in the creation and delivery of our mission and strategies in support of the Sustainable Development Goals.

“CABI has a century-long history of leveraging transformative partnerships in addressing the worsening global challenges that impact upon people and planet. Unfortunately, we are not on track to reduce hunger, poverty, gender inequality, climate change impacts and the loss of biodiversity.

“But there is hope, by sharing knowledge and expertise, we are stronger together in supporting smallholder farmers around the world so they can sustainably grow more food and lose less to crop pests and diseases despite the changing climate. As a result, their livelihoods are improved, and global food security is increased.”

The FAO Partnership Award 2024 was given to CABI during a special ceremony at the 175th session of the FAO Council.

Successful solutions and projects

Part of the criteria for the Award included demonstrating raised visibility of the problem of hunger and malnutrition, communicating complex agricultural and economic issues to the wider public, and promoted successful solutions and projects for improved food security and nutrition.

One global CABI-led project where CABI works in partnership in this regard is the [PlantwisePlus](#) programme. This initiative aims to reach 75 million smallholder farmers in 27 countries, providing them with access to the knowledge and skills they need to improve their production practices.

The work includes coordinating and strengthening systems for the detection and response to pest outbreaks, increasing awareness of, access to, and the use of affordable integrated pest management (IPM) solutions.

PlantwisePlus interventions include demand-led extension approaches contributing to improved plant health knowledge and management.

The introduction of plant clinic networks has led to increased yields and incomes, with plant

clinic users adopting recommendations in 90% of cases and increasing their yields by more than 20% and their incomes by an average of 32%.

PlantwisePlus also seeks to enhance knowledge and uptake of IPM practices through responsive digital advisory tools such as those within the [PlantwisePlus Toolkit](#). These include the [CABI BioProtection Portal](#) which provides information on locally registered biocontrol and biopesticide products to treat crop pests.



Dr Janny Vos, CABI's Partnerships Development Director, speaking in acceptance of the FAO Partnership Award – photo ©FAO/Giulio Napolitano.

Multistakeholder workshop further paves the way for the registration of biopesticides in Pakistan



CABI, together with the [Pakistani Government's Department for Plant Protection \(DPP\)](#), convened a training workshop to help further pave the way for the registration of biopesticides to sustainably tackle crop pests and diseases in Pakistan.

It is hoped that the rollout of the biopesticide registration guidance will promote the uptake of safer-to-use and more environmentally friendly biopesticides in the fight against crop pests and diseases which threaten livelihoods and food security.

By taking a more sustainable approach to crop pests and diseases, it is also anticipated that high levels of aflatoxins and pesticide residues exceeding the maximum residue levels (MRLs) affecting food produce, such as maize, chillies and groundnuts, will be addressed.

The work falls under the [PlantwisePlus Pesticide Risk Reduction](#) pathway which recognizes the urgent need to increase the uptake of lower-risk plant protection products by farmers. It is focused on raising awareness of, access to, and use of affordable integrated pest management solutions.

Forty-four participants – including those from the [Ministry of National Food Security and Research](#), DPP, [CropLife Pakistan](#) and the [Pakistan Crop Protection Association](#) – took part in the four-day event on the ‘Registration of Biopesticides’ in Karachi.

Enhance the understanding and capacity of stakeholders

The workshop, which aimed to enhance the understanding and capacity of stakeholders involved in the biopesticide registration process in Pakistan, followed the approval in [November 2023 of a biopesticides registration guidance document](#).

The document stems from extensive consultations facilitated by CABI that included the DPP and a team of biopesticide experts from the [United States Department of Agriculture](#) (USDA) and the [Pakistan Agricultural Research Council](#) (PARC).

Agriculture is very important to Pakistan's economy and people. It is the largest sector, employing over 42% of the workforce and it contributes around 24% to the country's gross domestic product (GDP).

However, an increased demand for food to meet

Pakistan's growing population – predicted to nearly double to 403 million by 2050 – is challenged by low agricultural productivity due to losses caused by a range of crop pests and diseases.

There is an overreliance on pesticides to try and manage the scourge of crop pests and diseases in Pakistan with the market – currently valued at over \$300 million – expected to rise to \$500 million in the next five years.

More sustainable pest management solutions

Nevertheless, there has been, in recent years, a focus on food safety and ecosystem conservation that has driven efforts towards more sustainable pest management solutions. As such, the rise of biopesticides products has gained attraction globally.

At the latest workshop, participants learnt from Master Trainer, Mr Luis F. Suguiyama, a renowned regulatory expert from Ag Aligned Global, USA, invaluable insights into international best practices and regulatory frameworks for biopesticides.

[Dr Babar Bajwa](#), CABI's Senior Regional Director-Asia, spearheaded the workshop with [Dr Muhammad Tariq Khan](#), Director General, Department of Plant Protection, Ministry of National Food Security and Research, Government of Pakistan.

Dr Bajwa said, “The insights and learnings from this workshop will play an important role in shaping the future of biopesticide regulation in Pakistan.

“The collaboration between CABI, the DPP, and other stakeholders sets a strong foundation for ongoing efforts to enhance the regulatory framework and promote sustainable agricultural practices.”

Prosperous agricultural sector for Pakistan

[Mr Rana Tanveer Hussain](#), Federal Minister for National Food Security and Research, Government of Pakistan, in his closing remarks,

insisted on building the momentum generated during the workshop and continue working together to create a sustainable and prosperous agricultural sector for Pakistan.

The workshop was also attended by representatives from provincial government departments from agricultural extension services, research and plant protection, leading agricultural universities, and trial conducting agencies.



Empowering the next generation of scientists: CABI in Pakistan provides internships for agricultural students



CABI's centre in Pakistan is helping to foster the next generation of scientists interested in securing greater food security in the world by offering internships for agricultural students at its biological control laboratories in Rawalpindi.

Thirty-one entomology and plant pathology students from Pakistan's top agricultural universities are taking part in ongoing research projects, fieldwork, data analysis, and experimentation regarding potentially devastating crop pests and diseases.

Applying theoretical concepts to real-world scenarios

The collaboration between CABI and Pakistan's leading agricultural universities marks a significant step towards bridging the gap between academia and practical application in the agricultural sector.

By welcoming students into the research facilities, CABI provides them with a hands-on learning experience that complements their theoretical knowledge gained in classrooms.

This practical learning allows them to apply theoretical concepts to real-world scenarios, thereby enhancing their problem-solving skills and critical thinking abilities as well as technical knowledge, professional networking, and industry insights.

By having the chance to work alongside experienced researchers and experts in various fields of agriculture, the students gain exposure to cutting-edge research projects, innovative technologies, and sustainable agricultural practices.

This exposure not only broadens their understanding of the agricultural landscape but also inspires them to explore new avenues for research and development in Pakistan.



A student conducts her research at CABI's biological control laboratories in Rawalpindi.

One of the most valuable aspects of internships at CABI is the opportunity for networking and professional development.

Interns interact with professionals from diverse backgrounds, including researchers, scientists, policymakers, and industry experts.

These interactions not only broaden their professional network but also provide insights into potential career paths and opportunities in the agricultural sector.



The interns present their research to Dr. Babar Bajwa at CABI's offices in Rawalpindi.

During a discussion with the interns, Dr. Babar Bajwa, Senior Regional Director, Asia, emphasized the availability of CABI's online resources, which can significantly contribute to their understanding of agriculture and empower them to make informed decisions in the field.

Feedback from the students

Positive feedback has been received from the students. One student highlighted that prior to the internship, she lacked the basic skills for laboratory work but finished the programme with the necessary knowledge that also included computer skills for data recording and further professional development.

Another female student emphasized how she learnt practical skills in biological control in a professional and supportive environment conducive for inclusive learning, feeling encouraged to advise other female students to consider the internship.

Innovation and growth in the agricultural sector Dr. Bajwa, said, "Internships at CABI offer

students a unique opportunity to contribute meaningfully to the advancement of agricultural research and development in Pakistan.

"By fostering collaboration, we are offering students exposure to innovative research, and hands-on learning experiences, facilitating networking and professional development, and promoting sustainable agriculture.

"CABI is helping to nurture the next generation of leaders who will drive innovation and growth in the agricultural sector."

The students, of which 21 are men and 10 women, are from the [University of Agriculture Faisalabad](#), [Pir Mehr Ali Shah Arid Agriculture University Rawalpindi](#), [University of Karachi](#), and the [University of Poonch Rawalakot](#), Azad Kashmir.

Gender diversity in the internship programme is encouraged and an inclusive environment is provided. By incorporating gender perspectives into the internship programme, a more equitable and inclusive agriculture sector can be promoted.

CABI's visit to the Philippines serves to further strengthen partnerships for greater food security in the region



CABI has attended [The Asia and the Pacific Food Security Forum 2024](#) – organised by the [Asian Development Bank \(ADB\)](#) – as part of its visit to the Philippines and mission to further strengthen partnerships for greater food security in the region.

The Forum featured more than 1,500 on site and online participants from ADB members, development partners and the private sector to discuss solutions to help ease the food crisis in the region and enhance the resilience of its food systems.

Dr Qiaoqiao Zhang, Director of Memberships, and Dr Feng Zhang, Regional Director, East and South-East Asia, after the Forum, updated partners on CABI's work to support the Philippines in transforming its agri-food system.

High-level strategic briefing

This included a high-level strategic briefing with CABI's National Implementing Agency, the Bureau of Agricultural Research (BAR), the Department of Agriculture (DA-BAR), as well as some national and international partners in the Philippines.

The CABI team was welcomed by CABI Liaison Officer, Dr Junel B. Soriano (Director, DA-BAR) and his team. Dr Soriano updated the CABI team on the current remits, focuses and programmes of BAR.

Being a key agency managing and deploying government funding for agriculture research, Dr Soriano said there are great potentials for further strengthening partnership between DA-BAR/Philippines and CABI.

This is particularly relevant, he said, in developing and implementing some key programmes addressing the DA's goal of economic recovery, food security, and poverty alleviation.

During the meeting, the CABI delegation highlighted the objectives of [CABI's Medium-Term Strategy 2023-2025](#), its key expertise, membership benefits and activities in the Philippines and wider Asia Pacific region.

Examples of this included CABI's work with the [Philippine Rice Research Institute](#) (PhilRice) to mitigate the impacts of the fall armyworm (*Spodoptera frugiperda*) on rice production with

free identification and diagnostic services for the pest and its parasitoids.

Key areas for deepening collaboration between the Philippines and CABI were identified as pesticide risk reduction, including the [CABI BioProtection Portal](#), nature-based solution for sustainable and safer production, transboundary pest management and value chain.

CABI has been an official observer to ADB's annual meetings as well as project implementing partners for decades. It has also implemented many ADB projects since the 1990s, including 11 projects since 2019.

These have included the projects '[Strengthening food security post COVID-19 and locust attacks](#)' as well as working with Olam International Limited to help create an inclusive, sustainable and connected coffee value chain.

Partnership has made significant contributions

Dr Qiaoqiao Zhang said, "The Philippines has been a valued CABI Member Country for more than 30 years. This partnership has made significant contributions to the sustainable development of agriculture, environment protection and knowledge management and dissemination in the Philippines.

"Many of ADB's [Member Countries](#) are also CABI's Member Countries. As such, CABI has been actively exploring ways of deepening collaboration with the ADB, which has been playing a leadership role in the region in addressing the issues of food insecurity, like malnutrition and transforming the entire agri-food system."

In 2022, ADB announced a thorough plan to provide at least \$14 billion in financing by 2025 to support its developing member countries so that they can transform their agri-food systems and address the underlying causes of food insecurity.

As part of the CABI visit, the team explored further collaboration with counterparts at PhilRice's Central Experiment Station, and

the [Fertilizer and Pesticides Authority \(FPA\)](#), Philippines, and [International Rice Research Institute \(IRRI\)](#).

They were received by Dr Eduardo Jimmy Qualang (Deputy Executive Director) and his teams at PhilRice, Mme Julieta Lansangan (Executive Director) and her team at FPA, and Dr Ajay Kohli, Interim Director General and his teams at IRRI. Constructive discussions on further collaboration were held and priority areas identified.

CABI has also been working in partnership with USDA-FAS and the FPA to strengthen agriculture and trade in the Philippines particularly in respect of compliance with Maximum Residue Limits (MRLs) on crops.



Dr Feng Zhang and Dr Qiaoqiao Zhang examine the work being conducted at PhilRice on fall armyworm.

Working towards greater harmonization and collaboration on regulatory systems in [Association of Southeast Asian Nations \(ASEAN\)](#) countries will ensure that MRLs on crops, for instance, are based on scientific principles and international standards for the promotion of plant protection products.

Collaboration enhanced in recent years

CABI's International Development and research activities in the country are coordinated and managed by CABI's centre in Malaysia which is led by Dr Feng Zhang in his role as CABI's Regional Director for East and South-East Asia.

Dr Feng Zhang said, "Our collaboration with the Philippines has been enhanced in recent years.

For example, CABI supported the Philippines on the detection, prevention, and management of fall armyworm in maize and rice.

"A pest alert was issued in July 2023, in collaboration with CABI, to help smallholder farmers identify and implement management practices to help reduce crop losses. As a technical advisor to DA-PhilRice, CABI's work includes capacity building, early preparedness and mitigation measures including biological control."

Philippines also benefited from work by SciDev.Net

The Philippines has also benefited from work carried out by [SciDev.Net](#), the world's leading source of reliable and authoritative news, views and analysis about science and technology for global development, which is part of CABI.

SciDev.Net has a team based in the Philippines who have carried out training on science writing and publication with the [Philippines Press Institute](#). This has included coverage of agriculture-related stories with IRRI and several other trainings and focus group discussions through the [Australian Agency for International Development \(AusAID\)](#).

"Discussions continue between SciDev.Net and other stakeholders in the Philippines on potential news coverage collaborations. It is believed that built on these collaborations, there are good prospects for further strengthening the partnerships between the Philippines and CABI," Mr Joel Adriano, Regional Coordinator for Asia-Pacific, SciDev.Net, said.



The CABI team with Dr Ajay Kohli (third from left), Interim Director General of IRRI during their high-level briefing.

PlantwisePlus News & Stories

Government approved document provides firm guidelines for the operation of Nepal's plant clinics nationwide



The Ministry of Agriculture and Livestock Development (MoALD) in Nepal has approved a document which provides comprehensive guidelines and procedures for the operation of PlantwisePlus plant clinics nationwide.

Establishment of the Plant Clinic Programme Operations Procedure marks a significant milestone in the plant health sector of Nepal, aiming to streamline and enhance the plant clinic programme that has been serving farmers since 2008.

CABI and the Government of Nepal officially started implementing the Plantwise programme – to help smallholder farmers grow more and lose less to crop pests and diseases – after signing the Plantwise Partnership agreement in December 2013.

Crucial role in assisting farmers

Since its inception, the plant clinic programme in Nepal has played a crucial role in assisting farmers by diagnosing crop issues and providing

management recommendations to help increase their livelihoods and local and food security.

But the lack of federal-level policy and legal frameworks has led to varying practices and standards across different provinces and local levels. This has hindered the programme's overall effectiveness and consistency.

The newly approved Plant Clinic Programme Operations Procedure addresses the long-standing issue of lacking a uniform nation-level policy and legal frameworks to help provinces prepare physical and financial plans for the country's plant clinics.

Dr Debraj Adhikari, Senior Plant Protection Officer, PQPMC, Nepal, said, "Nepal's agricultural extension system faces significant challenges in reach and connectivity, with gaps in the timely dissemination of standardized, unified information on plant health and pest detection.

"The approval of the Operations Procedure

comes now at the very right moment as a much-needed step in streamlining the plant clinic activities – including stakeholder engagement, data management and training – across all seven provinces in Nepal.”

Operating as effectively and efficiently as possible

The document promotes the idea of a national pest list as well as promoting safe pesticide use, enhancing plant doctors’ technical capacity through training, and uniform financial approvals across different levels of plant clinic operations.

It also aims to establish monitoring and evaluation officers for quality control and data management to make sure that the plant clinics across Nepal are operating as effectively and as efficiently as possible for the benefit of smallholder farmers.

The policy establishes two levels of committees as Central Plant Clinic Operation and Regulation Technical Working Group and the Provincial Plant Clinic Technical Task Force.

These seek to provide policy opinions and suggestions to the ministry about the programme related to plant clinics and to solve the technical problems related to the effective implementation of this programme.

Monitoring and Evaluation

The policy emphasizes the importance of monitoring and evaluation to ensure the program’s effectiveness and quality. The Ministry, along with central and provincial agriculture offices, will oversee the programme’s implementation and send regular reports to the Plant Quarantine and Pesticide Management Center.

Additionally, authorized personnel will be assigned as plant clinic monitoring and evaluation officers to ensure adherence to the guidelines and continuous improvement of the programme.

Dr Mahesh H M, CABI’s Crop Health Advisor and Country Coordinator for Nepal, said, “Overall, the approval of the Plant Clinic Programme Operation Procedure by MoALD is a significant step towards strengthening Nepal’s agricultural sector.

“By providing a clear and comprehensive framework for the operation of plant clinics, this policy aims to enhance the support provided to farmers, promote sustainable pest management practices, and ultimately contribute to the overall development and security of the country’s agriculture.”

Mr Madhav Bhatta, Plant Protection Officer, PQPMC, Nepal, stressed that as Nepal moves forward with this initiative, the collaborative efforts of all stakeholders will be crucial in achieving the desired outcomes and ensuring the long-term success of the plant clinic programme.

Also published recently:

- [Horizon scanning for emerging pests and diseases in Pakistan](#)
- [Improving plant health in Papua New Guinea with plant doctor training](#)
- [PlantwisePlus develops agro-input dealer training scheme in Bangladesh](#)
- [How does parthenium weed impact maize crop production?](#)
- [India update: Pest Risk Analysis workshop](#)
- [Nepal National Forum stresses collaborative actions for strengthening plant clinics](#)
- [PlantwisePlus digital tools to benefit the next generation of agricultural experts in Nepal](#)
- [Empowering women in agriculture: the digital leap in Bangladesh](#)
- [CABI-led PlantwisePlus training to help increase livelihoods and greater food security in Papua New Guinea](#)

Meetings and Events

Upcoming meetings and events CABI colleagues will be attending:

- **Management of Tomato Leafminer; Global perspectives and solutions for Vietnam** | Online | 6 August | CABI is co-organizing this webinar with the Vietnam Academy of Agricultural Sciences and Plant Protection Department.
- **9th International Agriculture Congress 2024** | Malaysia | 3-5 September | CABI's Regional Director, East & South-East Asia, Dr Feng Zhang, will be a plenary speaker at the event.
- **CABI and ASEAN member state engagement** | Indonesia | 9-12 September | In collaboration with the USDA, CABI is organizing an official engagement to promote the alignment of MRL standard-setting bodies.

Recent Publications

- [CABI in Review 2023](#). CABI
- Chen, M., Yin, C., Lin, T., Liu, H., Wang, Z., Jiang, P., **Ali, S.**, Tang, Q. & Jin, X. 2024. [Integration of Unmanned Aerial Vehicle Spectral and Textural Features for Accurate Above-Ground Biomass Estimation in Cotton](#). *Agronomy*, 14, 1313.
- Haider, M.W., Nafees, M., Iqbal, R. Ali. S., **Asad, H.U.**, Azeem, F., Gaafar, A.R.Z., Elshikh, M.S., Rizwana, H., Elsalahy, H.H. and Elshamly, A. 2024. [Rejuvenating potato growth and yield in challenging semiarid and saline sandy Cholistan: harnessing PGPB-coated N and P application strategies](#). *BMC Plant Biology* 24, 386.
- Naderi, R., Ali, K., **Rehman, A.**, Rasmann, S. and **Weyl, P.** 2024. [Estimating the impact on maize production by the weed *Parthenium hysterophorus* in Pakistan](#). *CABI Agriculture and Bioscience* 5, 14.
- Sher, A., **Nawaz, A.**, Ul-Allah, S. Sattar, A., Ijaz, M., Qayyum, A. and Manaf, A. 2024. [Foliar application of 5-aminolevulinic acid improves the salt tolerance in sunflower \(*Helianthus annuus* L.\) by enhancing the morphological attributes and antioxidant defense mechanism](#). *Acta Physiologiae Plantarum*, 46, 24.
- Haider, M. W., Nafees, M., Valipour, M., Asad, H. U., Marc, R. A. (2024) Chapter 10. [Ultraviolet \(UV\) Light Technology for Postharvest Fruits and Vegetables](#). In: Ali, S., Mir, S. A., Dar, B.N., Ejaz, S. (Eds). *Sustainable Postharvest Technologies for Fruits and Vegetables*. CRC Press.
- **Fazlullah, Farooq, M., Rashid, K.; Zada, N.** 2024. Dietary impacts on *Corcyra cephalonica* rearing: Insights for mass production. In 8th International Conference on Sustainable Livelihoods: Climate Smart Agriculture for Food Safety. Page 105. 03-04 July 2024. University of Poonch Rawalakot Azad Jammu & Kashmir Pakistan.
- Madni U., **Fazlullah, Farooq, M.**, Bahar, G Anjam, H., Iftikhar, Z., **Rashid, K.** 2024. Synergistic effects of *Azadirachta indica* and *Telenomus remus* against *Spodoptera frugiperda* control. In 8th International Conference on Sustainable Livelihoods: Climate Smart Agriculture for Food Safety. Page 104. 03-04 July 2024. University of Poonch Rawalakot Azad Jammu & Kashmir Pakistan.

Products and Resources

CABI supports study, practice and professional development through our array of publishing products, research services and support tools.

	Product	More information
Core Database and ebooks	CAB Abstracts <ul style="list-style-type: none"> ■ www.cabdirect.org 	https://www.cabi.org/publishing-products/cab-abstracts/
	Global Health <ul style="list-style-type: none"> ■ www.cabdirect.org 	https://www.cabi.org/publishing-products/global-health/
	Global Health Practitioner Interface <ul style="list-style-type: none"> ■ www.cabdirect.org/globalhealth 	https://www.cabi.org/publishing-products/global-health/
	CAB eBooks <ul style="list-style-type: none"> ■ www.cabi.org/cabebooks 	https://www.cabi.org/publishing-products/ebooks/
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	Nutrition and Food Sciences <ul style="list-style-type: none"> ■ https://www.cabi.org/nutrition 	https://www.cabi.org/publishing-products/nutrition-and-food-sciences-database/
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	Crop Protection Compendium <ul style="list-style-type: none"> ■ www.cabi.org/cpc 	https://www.cabi.org/publishing-products/crop-protection-compendium/
	Forestry Compendium <ul style="list-style-type: none"> ■ www.cabi.org/fc 	https://www.cabi.org/publishing-products/forestry-compendium/
	Horticulture Compendium <ul style="list-style-type: none"> ■ www.cabi.org/hc 	https://www.cabi.org/publishing-products/horticulture-compendium/
	Invasive Species Compendium <ul style="list-style-type: none"> ■ www.cabi.org/isc 	https://www.cabi.org/publishing-products/invasive-species-compendium/
Full Text	CAB Reviews <ul style="list-style-type: none"> ■ www.cabi.org/cabreviews/ 	https://www.cabi.org/publishing-products/cab-reviews/
	Distribution Maps of Plant Pests <ul style="list-style-type: none"> ■ www.cabi.org/dmpp 	https://www.cabi.org/publishing-products/distribution-maps-of-plant-pests/
	Distribution Maps of Plant Diseases <ul style="list-style-type: none"> ■ www.cabi.org/dmpd 	https://www.cabi.org/publishing-products/distribution-maps-of-plant-diseases/
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