ISPP INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

ISPP NEWSLETTER

ISSUE 55 (9) SEPTEMBER 2025

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ICPP2028

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MYCOTOXINS: A SILENT RISK TO PLANTS, PEOPLE AND ANIMALS

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ONE HEALTH HIGHLIGHTS, 30 JULY 2025

In agrifood systems, there are threats to human, animal and plant health that can develop at any point along the food chain. Among these are mycotoxins – toxic chemicals produced by fungi that develop quietly but that can have a big impact on livelihoods and can disrupt trade.

The risk starts in the field. But so can the solution - through healthy crops, strong plant protection and good agricultural practices.

WHAT ARE MYCOTOXINS?

Mycotoxins are naturally produced by certain fungi, including *Aspergillus*, *Fusarium* and *Penicillium*, with several hundred different types identified to date. These fungi thrive mostly in warm, humid environments and can infect many crops like maize, wheat, sorghum, groundnuts, spices, dried fruits and tree nuts.

Once a crop is infected, the fungi can produce mycotoxins in the field, during harvest and transportation, or in storage. These toxins can survive many common food processing steps such as milling, baking, boiling, roasting or juicing - meaning they often remain in the final products.

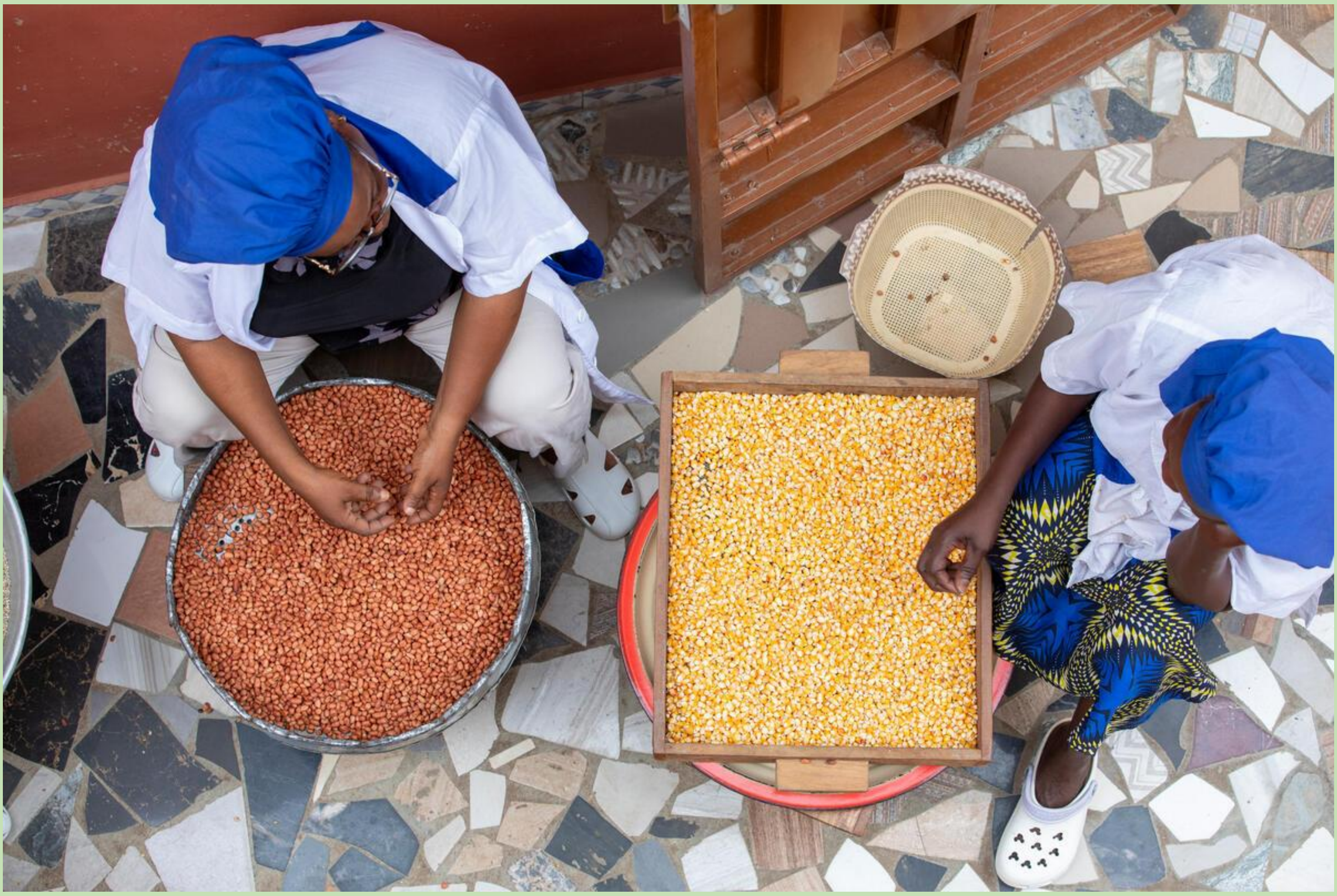
Contamination can occur at any point in the food chain. People may consume contaminated cereals, nuts, juices or foods. As these commodities move through local and international supply chains, the threat extends far beyond the field.

WHAT MAKES THEM DANGEROUS?

Mycotoxins represent a threat to plant health, as they develop in plant products, to animal health, when they contaminate animal feed, and to human health when humans eat infected plant- or animal-source foods. They are a threat to both food safety and food security.

When animals consume contaminated feed, they may experience reduced growth, reproductive problems, or suppressed immune function. In humans, even at very low levels, exposure to some mycotoxins has been linked to fertility issues, weakened immunity, stunted growth in children, and even cancer.

Aflatoxins are among the most potent natural carcinogens and commonly appear in maize and nuts. In livestock, aflatoxin B1 is of particular concern as it can metabolize into aflatoxin M1, which passes into milk, meaning this poses a food safety risk, especially for infants and young children who consume milk as a staple. Similarly, ergot poisoning, also known as ergotism, is a long and well-known health concern. The causal fungus (*Claviceps spp.*) replaces cereal grains with hard, dark sclerotia that contain alkaloids (e.g. ergotamine, ergocristine, ergocornine). In animals and humans, these compounds trigger vasoconstriction, gastrointestinal distress and neurological issues, while severe cases can progress to gangrene or death. Although in current times its impact in food chains is limited, it is still an important issue in the livestock sector in places where disease control is constrained both in plant and animal health.



From healthy plants to safer food

The fungi that produce mycotoxins can especially take hold when crops are stressed by climatic conditions, plant pests, poor handling or storage conditions. Healthy plants are less vulnerable, which is why prevention starts in the field, with practices that strengthen crops and reduce opportunities for fungal growth at all stages of the value chain.

However, not all fungal infections lead to mycotoxin production. This depends on several factors such as crop stress, fungal genotype, and environmental conditions.

FAO promotes good agricultural practices that can help reduce stress factors throughout the production and post-harvest processes. By ensuring proper soil health, sustainable agronomic practices, timely harvesting, careful drying, and safe storage farmers can limit factors that fungi need to grow and produce toxins.

Integrated pest management (IPM) works alongside good agricultural practices by lowering plant pest risks - a major trigger for fungal infections. Through early warning, crop monitoring and the use of natural predators or bioagents, IPM helps maintain plant health and reduces entry points for contamination.

Some countries use a biological control method involving non-toxigenic strains of Aspergillus flavus - fungi that do not produce aflatoxins. When applied to crops, these harmless strains compete with the toxic ones for space and nutrients, effectively reducing the chances of aflatoxin contamination in the field. This method, known as competitive exclusion, has been proven to significantly lower aflatoxin levels in crops like maize and groundnuts, especially in warm and moist climates where the risk is highest.

Together with post-harvest solutions, which are essential, taking steps to strengthen plant health offers a holistic, preventive approach to tackle mycotoxin risks. Guidance on practices to prevent or reduce mycotoxin contamination is provided in codes of practice adopted by the Codex Alimentarius Commission.

GLOBAL STANDARDS FOR A GLOBAL PROBLEM

To help countries manage risks of mycotoxins, protect consumers health and ensure fair practices in trade, the Codex Alimentarius Commission ("Codex") sets internationally agreed food safety and quality standards that, when implemented, can support the prevention and/or reduction, of mycotoxin contamination in food and feed.

Codex sets recommended maximum levels for mycotoxins in major commodities, based on the scientific risk assessments provided by the Joint FAO/WHO Expert Committee on Food Additives (JECFA). These assessments form the scientific basis for Codex maximum levels for contaminants such as mycotoxins.

In addition to these levels, Codex develops codes of practice which are a set of good practices that, among other things, guide producers and regulators in reducing contamination and facilitating compliance with maximum levels. These documents outline good agricultural practices and good manufacturing practices such as how to prevent fungal infection in the field, during harvest, and in storage. They are an essential tool for countries building food safety systems or facing resource constraints.

All maximum levels for mycotoxins are consolidated in the General standard for contaminants and toxins in food and feed (CXS 193-1995). Codex standards form the technical backbone of food regulation in many countries and support countries in meeting their obligations under the Agreement on Sanitary and Phytosanitary Measures of the World Trade Organization (WTO/SPS Agreement) as Codex standards are recognized as benchmark standards for harmonization of food safety regulations under this Agreement, hence facilitating trade. They also offer a shared scientific foundation for training, testing and surveillance across borders.

Climate change and growing causes of risk

The fungi producing mycotoxins are influenced by environmental factors, and climate change is reshaping the risk landscape. Rising temperatures, increased rainfall, and more frequent cycles of drought and humidity can expand fungal ranges and intensify outbreaks.

At the same time, heavy reliance and inappropriate use of certain fungicides can contribute to antimicrobial resistance (AMR) in plants, particularly resistance to azole fungicides. This is a growing concern, as some azoles are also used in human medicine. This is why FAO supports countries in implementing early warning systems for such threats and promoting sustainable alternatives to manage plant pests and diseases. The goal is not just to reduce contamination, but to prevent their formation through the food and feed chains with the aim of protecting the health of humans, animals and the environment.

A ONE HEALTH APPROACH TO PREVENTION

The spread of fungi and fungal infections in plants is not contained within borders, and neither is the food safety risk from mycotoxins. These contaminants develop in plants, but they impact on the health of people, animals and ecosystems. A One Health response to this threat is needed, connecting plant protection, veterinary care, food safety and environmental stewardship into a coordinated response.

When crops are protected, so is the health of people, animals, and the planet - making plant health a powerful, essential force behind safe food.

PLANET FUNGI – A PHOTOGRAPHER'S FORAY. NEW BOOK

Catherine Marciniak, Stephen Axford, and Tom May (2025). Planet Fungi – A Photographer's Foray. CABI. 320 pp.

Fungi are nature's great networkers, weaving connections, driving transformation and thriving in the most unexpected places. Planet Fungi: A Photographer's Foray is a feast for the eyes, with stunning imagery and pioneering explorations that reveal the intricacies of fungal biology and their ecological significance.

It was a chance encounter in the forest with a purple mushroom that completely changed photographer Stephen Axford's view of the world. He became obsessed with documenting the largely unexplored kingdom of fungi and, alongside his partner, Catherine Marciniak, capturing the beauty and diversity of fungi in some of the most remote regions on Earth. There are an estimated 2-5 million species of fungi found all over the world, yet with only around 155,000 described so far, there is so much left to discover.

From glowing mushrooms in ancient forests to bizarre, alien-like forms, these extraordinary organisms will challenge how you see the natural world.

Find out more here.

STUDY OFFERS NEW INSIGHT INTO MIXED VIRUS INTERACTIONS IN PLANTS

PENN STATE NEWS, 13 AUGUST 2025

Similar to humans, plants can become infected with more than one virus at a time, opening the door for more severe infections and new disease variants. But these mixed infections are often under-studied and poorly understood.

New research led by researchers at Penn State examined what happens when two common viruses — tomato spotted wilt orthotospovirus (TSWV) and impatiens necrotic spot orthotospovirus (INSV) — infect the same plant.

The study, published in the journal *Viruses*, found that when plants were infected with both viruses, TSWV levels were much lower than when plants were infected with TSWV alone. These levels were also lower than INSV in mixed infected plants, suggesting an antagonistic relationship between the two viruses.

Cristina Rosa, professor of plant virology in the College of Agricultural Sciences, said that while preliminary, the findings provide a better understanding of these viruses that could help lead to better disease control in the future.

"Ours is the first study that looked at these mixed infections," she said. "The knowledge generated here could eventually be used in management of plant viruses transmitted by vectors if the plant pathways identified in this study can be manipulated to help in control disease in plants. Theoretically this approach could result in economic benefits for growers."

While TSWV and INSV were historically thought to be the same species, Rosa said, they are now considered separate viruses. However, they do have similarities at the genomic and ecological level. They both infect a wide range of plants, cause symptoms such as necrosis and are mainly spread by tiny insects called thrips. Thrips feed by puncturing the plant and sucking out its internal fluids, often causing visible damage and spreading disease.

The two viruses also exist in overlapping parts of the world, making co-infections in plants theoretically common. Rosa said these mixed infections are important because every time a plant is infected with two viruses at the same time, it increases the risk for the viruses to exchange genetic segments and make new reassortant viruses.

Still, recombinations of TSWV and INSV have not been found, which Rosa said could be due to several reasons.

A previous study in Rosa's lab found that not only can thrips tell which viruses a plant is infected with, but they actually prefer to lay their eggs in plants infected with both TSWV and INSV. But even though the first instar thrips grow up acquiring both of these viruses, they don't transmit them equally when they get older — the thrips favor one virus over the other.

Since thrips are the main vector of the viruses, Rosa said this could be one reason recombinations have not been found, because while both viruses can infect the thrips at the same, the insects only pass one along to new plants. Another reason, she added, could be how the viruses affect each other in the plant host.

“When two microbes infect the same organism, you can have two outcomes: they either help or hurt each other,” Rosa said. “That’s important for the result of the infection, because if the viruses have a synergistic interaction, you would see a more severe disease. But if they are antagonistic, one virus could decrease the fitness of the other and you could have a reduced severity of the disease.”

Having already studied the viruses’ interactions in thrips, Rosa and her co-authors decided to study how they behave in plants and examine whether the result of coinfection is due to direct virus-virus interactions or indirectly via the plant. The team infected three groups of "*Nicotiana benthamiana*" or benthi plants — a close relative of tobacco — with different combinations of the viruses at different times: one group with TSWV, one with INSV and one with both, in synchronous as well as sequential times.

The team then was able to measure the different amounts of the viruses in the plants and compare between single and mixed infections. They also performed an analysis using small RNA sequencing — a lab method used to read and measure all the RNA molecules in a sample to see which genes are active, which helps the researchers better understand the molecules that carry instructions from DNA to the plants' cells to make proteins.

After analyzing the data, the researchers found that there was a lower number of co-infected plants than plants infected with a single virus. The amount of TSWV in the co-infected plants was also lower than in the plants with only one of the viruses.

Taken together, Rosa said this suggests an antagonistic relationship between the viruses, with ISNV being favored by the plant.

“When we looked at small RNA sequencing, we found that there were similar levels of ISNV small RNAs in both single and mixed infections,” she said. “So ISNV seems to be processed the same during the two types of infections, while the TSWV was processed differently. Basically, we have a much lower level of TSWV small RNAs in mixed infections compared to single infections.”

Rosa said the research team also looked at micro RNA profiles in the different infections and found that once again, ISNV profiles were similar in both single and mixed infections, while TSWV profiles were different, indicating that TSWV is processed in a different way than INSV.

In the future, the researchers said, additional studies could help identify the mechanisms behind these interactions.

HIDDEN IMPACTS OF SPRAYING: NEW STUDY EXPLORES EFFECTS OF FUNGICIDE USE ON CORN HEALTH AND MICROBIOME

AMERICAN PHYTOPATHOLOGICAL SOCIETY NEWS, 21 AUGUST 2025

Corn is one of the most valuable cash crops globally, with annual grain production in the United States alone valued at nearly $80 billion. Fungicides are widely used to protect crops and promote yield, but new research published in *Phytobiomes Journal* suggests we may be overlooking a hidden cost: the loss of beneficial fungi essential to plant health.

A research team led by Briana Whitaker, a research microbiologist, and Joseph Opoku, a research plant pathologist, with the USDA Agricultural Research Service, in collaboration with Nathan Kleczewski (Syngenta Biologicals), investigated how foliar fungicides influence the foliar fungal endophyte community—the fungi that live within corn leaf tissue without causing disease.

The study, conducted at two agricultural research sites in the midwestern United States, used culture-based techniques to identify and quantify the fungi living within corn leaves. Researchers applied a systemic, multi-mode-of-action fungicide to assess its impact. The results? While the overall presence of culturable fungi didn't change significantly, the composition of the fungal community did—especially in terms of diversity and abundance of specific fungal species. Interestingly, these effects varied by location, emphasizing the influence of environmental conditions on microbiome responses.

"This research presents an opportunity to reassess our crop management strategies—shifting the emphasis from just managing disease to also promoting the beneficial components of the plant microbiome," Whitaker said. "Ultimately, the potential to implement more sustainable agricultural practices that not only safeguard crops but also enhance resilience is highly promising."

This research is among the first to investigate how foliar fungicides affect the corn fungal microbiome—an area that has been largely overlooked despite the crop's global importance. The findings could have broad implications for plant pathology, agronomy, ecology, and integrated pest management, encouraging a shift toward crop strategies that both protect against pathogens and support beneficial microbes.

As agriculture faces increasing pressure from climate variability, emerging pathogens, and the need for resilient cropping systems, the corn microbiome may represent an untapped resource. "This work could lead to a transformative approach in agriculture," Whitaker added, "where the synergy between plants and their microbiomes is acknowledged and utilized for long-term success." With continued research, these beneficial fungal communities could play a central role in the next generation of precision agriculture.

Biological control of Pratylenchus and its impact on rhizosphere microbiome interactions

A review by Mayanna Karlla Lima Costa *et al.* titled "Biological control of *Pratylenchus* and its impact on rhizosphere microbiome interactions" was published in November 2025 by *Physiological and Molecular Plant Pathology* (vol. 140, paper 102871). The abstract is as follows:-

Root-lesion nematodes (Pratylenchus) are among the most damaging plant-parasitic nematodes, severely affecting crop productivity worldwide. As chemical control becomes increasingly restricted, biological control strategies have emerged as sustainable alternatives. This review synthesizes recent advances in the biocontrol of *Pratylenchus*, with a focus on key antagonistic microorganisms and the functional role of the rhizosphere microbiome. We highlight how beneficial bacteria and fungi suppress nematodes through egg parasitism, nematicidal metabolites, and the activation of systemic plant defenses. This review emphasizes the ecological interactions between introduced biocontrol agents and native microbial communities, showing how these interactions shape efficacy under field conditions. Notably, field results remain inconsistent compared to greenhouse trials, underscoring the influence of edaphoclimatic variability and native microbiota. Emerging approaches now focus on locally adapted microbial consortia and the management of soil microbiomes through organic amendments, reduced tillage, and crop diversification. These practices foster suppressive microbiomes that can enhance the resilience and success of biocontrol. Finally, we discuss how high-throughput sequencing and systems-level microbiome analysis are improving our understanding of these complex interactions, paving the way for predictive and ecologically sound nematode management strategies.

Read paper.

Climate change impacts on plant pathogens, food security and paths forward

A review by Brajesh K. Singh *et al.* titled "Climate change impacts on plant pathogens, food security and paths forward" was published in May 2023 by N*ature Reviews Microbiology* (vol. 21, pages 640–656). The abstract is as follows:-

Plant disease outbreaks pose significant risks to global food security and environmental sustainability worldwide, and result in the loss of primary productivity and biodiversity that negatively impact the environmental and socio-economic conditions of affected regions. Climate change further increases outbreak risks by altering pathogen evolution and host–pathogen interactions and facilitating the emergence of new pathogenic strains. Pathogen range can shift, increasing the spread of plant diseases in new areas. In this Review, we examine how plant disease pressures are likely to change under future climate scenarios and how these changes will relate to plant productivity in natural and agricultural ecosystems. We explore current and future impacts of climate change on pathogen biogeography, disease incidence and severity, and their effects on natural ecosystems, agriculture and food production. We propose that amendment of the current conceptual framework and incorporation of eco-evolutionary theories into research could improve our mechanistic understanding and prediction of pathogen spread in future climates, to mitigate the future risk of disease outbreaks. We highlight the need for a science–policy interface that works closely with relevant intergovernmental organizations to provide effective monitoring and management of plant disease under future climate scenarios, to ensure long-term food and nutrient security and sustainability of natural ecosystems.

Read paper.

160 MILLION YEARS AGO, THIS FUNGUS PIERCED TREES LIKE A MICROSCOPIC SPEAR

SCIENCE DAILY, 8 JUNE 2025

Blue-stain fungi constitute a distinctive group of wood-colonizing fungi which lack the ability to decompose wood lignocellulose, yet are capable of causing significant wood discoloration. Though these fungi are generally nonfatal to their hosts, they often accelerate tree mortality when associated with wood-boring insects.

Molecular phylogenetic analyses suggest that blue-stain fungi should be an old fungal group, which might originate during the Late Paleozoic or early Mesozoic. However, hardly anything is known about the geological occurrences of blue-stain fungi. “Not until 2022, the first credible fossil record of blue-stain fungi was reported from the Cretaceous in South Africa with an age of approximately 80 million years,” says Dr. Ning Tian from Shenyang Normal University in Shenyang, China.

A Chinese research team led by Dr. Ning Tian and Dr. Yongdong Wang (Nanjing Institute of Geology and Palaenology, CAS) found well-preserved fossil fungal hyphae preserved within a Jurassic petrified wood from northeastern China, dated 160 million years ago. Microscopic examination reveals the fossil hyphae are dark in color, which is indicative of pigmentation, a hallmark of contemporary blue-stain fungi which results in the discoloration of woods. Of interest, when penetrating the wood cell wall, the hyphae commonly form a very specialized structure called “penetration peg”. That is to say when pushing through the wood’s cell walls, the hyphae commonly slim down in size, making it easier to pierce through the tough barrier. The discovery of the penetration peg enables the team to ensure that the fossil fungus that they found belongs to the blue-stain fungi. “Unlike wood-decay fungi, which degrade wood cell walls through enzymatic secretion, the blue-stain fungi lack the enzymatic capacity to decompose wood structures. Instead, their hyphae mechanically breach wood cell walls via the penetration pegs.” Dr. Tian says.

“The finding of Jurassic blue-stain fungi from China, represents the second report of the blue-stain fangi and the earliest fossil record of this fungal group in the world, pushes back the earliest known fossil record of this fungal group by approximately 80 million years, providing crucial fossil evidence for further understanding the origin and early evolution of blue-stain fungi. Additionally, it offers fresh insights into understanding the ecological relationships between the blue-stain fungi, plants, and insects during the Jurassic period,” says Dr. Wang. The bark beetle subfamily Scolytinae is considered as one of the major spore dispersal agents for extant blue-stain. However, both molecular biological and fossil evidence proposed that the origin time of Scolytinae dates back no earlier than the Early Cretaceous. Given the Jurassic age of present fossil fungus, it is hypothesised that its spore dispersal vector was not Scolytinae but rather other wood-colonizing insects prevalent during that period.

DROUGHT-FIGHTING SOIL BACTERIA HELPING WHEAT BEAT THE HEAT

WESTERN SYDNEY UNIVERSITY NEWS, 30 MAY 2025

Western Sydney University researchers have discovered that drought affected wheat plants are able to call on eco-friendly soil bacteria to survive, helping keep crops healthy, boost yields, and provide pathways to develop extreme weather resistant crops.

The study, published in Cell Host & Microbe revealed that when wheat faces drought, it produces natural compounds called 4-oxoproline around its roots, which sends out chemical signals to attract specialised friendly soil bacteria including *Streptomyces* and *Leifsonia* species.

The drought fighting soil microbes then produce beneficial compounds including osmolytes, plant hormones, and nutrient solubilisers that enhance the ability of the plant to resist drought and continue to grow.

When the research team reintroduced the helpful microbes to wheat plants in dry soils, the plants grew bigger, stayed healthier, and produced more grain, even in the next generation of crops.

Lead author Dr Jiayu Li, from Western Sydney University's Hawkesbury Institute for the Environment, said that the findings of this study reveal how plants and microbes work as a team to survive stressful conditions such as drought, making sustainable and climate-smart farming a viable option.

"Our research will provide scientists and farmers a new platform to harness natural plant compounds and soil microbes as bio-based tools to protect crops from drought, mitigating the impact of drought on agricultural productivity," said Dr Li.

"It also provides new pathways for targeted plant breeding for climate change and extreme weather resistant crops, as these microbes even pass on 'drought memory,' helping the next crop cycle perform better in dry soils."

The plant friendly microbes, discovered by researchers from Western Sydney University's Hawkesbury Institute for the Environment, act as "probiotics" for crops and provide a natural way to protect plants from drought.

Senior author, Distinguished Professor Brajesh Singh said the drought-fighting bacteria and their products will help farmers to protect their crops and survive drought, while boosting yields.

"The frequency and intensity of drought stress is escalating under climate change, which poses a significant threat to global primary productivity and sustainability," said Distinguished Professor Singh.

"The study shows that these plant-microbe partnerships can create lasting benefits for farming in dry environments, helping to tackle drought and the substantial lasting impacts on food security and environmental health."

Drought is one of the biggest challenges facing global agriculture, threatening food security worldwide. The World Health Organization (WHO) estimates 55 million people globally are affected by drought each year, with water scarcity impacting 40 per cent of the world's population.

Western Sydney University has been named number one in the world for its social, economic, and environmental impact in the Times Higher Education (THE) University Impact Rankings three years in a row.

EFFECTORS OF PLANTS PATHOGENIC FUNGI AND FUNGAL LIKE MICROBES: A COMPREHENSIVE REVIEW ON MECHANISMS, ROLES, AND HOST INTERACTIONS

A review by Kainat *et al.* titled "Effectors of plants pathogenic fungi and fungal like microbes: a comprehensive review on mechanisms, roles, and host interactions" was published on 29 July 2025 by *Front. Plant Sci.* (vol. 16). The abstract is as follows:-

Plant ecosystems face primary threats from biological invasions in combination with microbial pathogens whose main threats derive from fungal pathogens. Fungi are essential in maintaining ecological balance by decomposing wood and eliminating weakened trees, but pathogenic fungi can cause devastating effects. This review summarizes the effects of forest pathogenic fungal effectors by evaluating their types, functions, and unique characteristics, along with their impact on host immune response mechanisms. Pathogens attack plants through specific infection strategies that involve effectors to suppress host defense responses and metabolic activities. Plants falling victim to fungal effectors through their interaction with pathogens lose control of key cellular processes that allow the infection to develop. Effectors are categorized into apoplastic and cytoplasmic types, which influence plant immunity through alterations in immune responses. The infection entry process involves microorganisms that release protein effectors as structural and functional modifiers for target cells. The diversity of effectors jointly with their evolutionary processes depends on multiple factors encompassing amino acid content and foundational genomic zones together with interaction period with hosts. Effectors further manipulate phytohormone pathways such as jasmonic acid, ethylene, and salicylic acid to suppress immunity, promote pathogen survival, and establish parasitic compatibility. However, fungal effectors are central to pathogenesis, as they critically redefine plant-pathogen interactions by targeting host defense mechanism, enabling colonization, and driving diseases development. The review evaluates fungal effectors as dual agents which disrupt plant immunity while serving as research tools to study host biology. Exploring effector-mediated mechanisms helps researchers better understand fungal pathogenicity characteristics alongside plant host defense mechanisms. Future inquiries should examine pathway plasticity in effectors across taxonomic domains to better understand fungal pathogenesis in forest ecosystems worldwide.

Read paper.

CURRENT VACANCIES

Professor and Chair in Cereal Rust, The University of Sydney

The University is seeking to appoint a Professor and Chair in Cereal Rust to lead a world-class research program focused on the management, genetics, and epidemiology of cereal rust diseases. This is a strategic role aimed at strengthening Australia's response to plant pathogens that threaten global food security, with a particular focus on rust diseases affecting wheat and other cereal crops. The research program has a 100-year history of excellence in research and training and the successful applicant will bring innovative ideas and skills to enhance our leadership and impact.

The position will be on the University's Camden Campus. This role follows a standard 40:40:20 workload model — that is, 40% research, 40% teaching (also referred to as 'education' or 'learning and teaching'), and 20% service and leadership. However, the University is open to considering a research-focused appointment during the initial phase, allowing the successful candidate to establish and accelerate their research program.

The successful applicant will bring extensive international expertise in host-pathogen interactions, biosecurity, and disease risk management, with a focus on food security, environmental sustainability and resilience. The successful applicant will have a PhD in a relevant field, a track record of excellence in research publications and successful applications for research funding, in building successful teams (including successful supervision of Higher Degree by Research Students) and demonstrating clear leadership in the field. They will have a track record of success in teaching, research and publication commensurate with an international leader in the field of plant pathology and host/pathogen genetics. The successful applicant will have research interests that complement and/or enrich the existing strengths and expertise in the School of Life and Environmental Sciences (SOLES) including plant breeding, digital agriculture, molecular plant biology, and plant development science. They should have a strong track-record of successful collaboration nationally and internationally and articulate a vision for potential collaboration within SOLES, across the University of Sydney and beyond. They will have excellent written, oral and interpersonal communication and time management skills.

Deadline: Application close 25 September 2025.

Apply using the link at the top of the page.

More information on job.

ACKNOWLEDGEMENTS

Thanks to Grahame Jackson and Greg Johnson for contributions.

COMING EVENTS

Plant Pathology 2025
9 September – 11 September, 2025
Nottingham, UK
Contact and email: Richard Oliver
meetings@bspp.org.uk
Website: www.bspp.org.uk/conference-info-plant-pathology-2025-ppath2025-and-early-careers-plant-pathology-2025-ecpp2025/

Conference of the IOBC/WPRS Working Group "Integrated Protection in Viticulture"
13 October – 15 October, 2025
Mikulov, Czech Republic
Website: event.fourwaves.com/ipvc/pages

14th Arab Congress of Plant Protection Sciences
3 November – 7 November, 2025
Algeria city, Algeria
Contact and Email: info@acpp-aspp.com
Website: acpp-aspp.com

Plant-Parasitic Nematode Identification Course
12 December – 19 December, 2025
Clemson, South Carolina
Contact Email: ckhanal@clemson.edu
Website: www.clemson.edu/cafls/nematology

Plant and Animal Genome Conference (PAG 33)
9 January – 14 January, 2026
San Diego California, USA
Website: https://intlpag.org/PAG33/

8th International Bacterial Wilt Symposium (IBWS)
22 March – 26 March, 2026
Wageningen, the Netherlands
Website: event.wur.nl/ibws2026

21st Reinhardsbrunn Symposium 2026 – Modern Fungicides and Antifungal Compounds
19 April – 23 April, 2026
Friedrichroda, Germany
Website: event.wur.nl/ibws2026

25th Annual Fusarium Laboratory Workshop
21 June – 26 June, 2026
Manhattan, Kansas, USA
Contact: John Leslie jfl@ksu.edu

International Plant Protection Congress
Dates not announced yet, 2027
Christchurch, New Zealand
Website: www.plantprotection.org

International Congress of Plant Pathology 2028
19 August – 25 August, 2028
Gold Coast, Queensland, Australia
Website: reinhardsbrunn-symposium.de/de/


ICPP2028
13th
International
Congress of
Plant Pathology
19-25 August, Gold Coast Convention & Exhibition Centre, Queensland, Australia

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

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