PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

ISPP NEWSLETTER

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Editor: Daniel Hüberli (**email**)

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IN THIS ISSUE:

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

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12 May is International Day of Plant Health

IPPC SECRETARIAT, MAY 2025

Get ready for the International Day of Plant Health (IDPH) on 12 May 2025!

JOIN us in raising global awareness on the crucial role of plant health in food security, environmental protection and safe trade. With the theme, "The importance of plant health in One Health," we will put a spotlight on how healthy plants are necessary and critical to the health of humans, animals and the environment.

START preparing your IDPH activities now by using the Get Involved Guide available in six languages. For inspiration, see how countries all over the world observed IDPH in the past through these Impact Reports in 2023 and 2024.

GET young children curious and engaged with plant health through the Activity Book: Healthy Plants, Health Planet which is available in ten languages.

Watch out for more information and promotional materials that you can use in the coming weeks on the official campaign website.

For further information, send us an email at IDPH@fao.org.

When we protect plants, we protect life!

REVIEW OF THE 11TH PPPHI SYMPOSIUM: FOCUS ON BIOCONTROL

NOEMI MEẞMER, ISPP COUNCILLOR FOR THE GERMAN CROP PROTECTION SOCIETY, 31 MARCH 2025

On 18–19 February 2025, the 11th International Symposium on Plant Protection and Plant Health International (PPPHI) took place in Braunschweig, Germany. Under the theme "Scientific Innovations & Regulatory Challenges in Biocontrol," around 80 participants from 9 countries from research, regulatory authorities and industry gathered to discuss the current situation and future needs of biocontrol agents in plant protection.

The symposium featured an extensive program, covering recent scientific findings, regulatory challenges for biocontrol products, and how the risk potential for such products could be assessed. The key focus areas included research needs, the potential and limitations of microbial biocontrol agents, selectivity and efficacy of biological methods, and future perspectives for sustainable crop production.

The Program Committee and the Speakers of the PPPHI Symposium.

Christian Huyghe (INRAE, France) as keynote speaker provided insights into new scientific paradigms for efficient and sustainable plant protection, Marieke van Hulten (ctgb, Netherlands) shared experiences on the efficacy assessment of biological plant protection products in the registration process, Aymeric Berling (EU Commission) presented the role of the Common Agricultural Policy (CAP) in promoting biocontrol, and Vikas Kumar's talk on Artificial Intelligence in risk assessment introduced innovative approaches for the future regulation of biocontrol products. These were just a few of the very informative talks.

Discussions highlighted that biological plant protection is key to sustainable agriculture, but challenges remain in research, regulation, and practical implementation. Participants agreed that closer collaboration between science, industry, and regulatory bodies is essential to accelerate the integration of biocontrol products.

Two- days symposium, 13 leading talks on biocontrol. Shown here from left to right: Dr. João Pedro Saraiva (UFZ, DE), Dr. Jörg Wennmann (JKI, DE), Dr. José Carvalho (IBMA, IT), Domenico Deserio (EC DG Sante), Dr. Lucius Tamm, Agroscope, CH), and Dr. Christina Donat (e-nema, DE).

With valuable insights and new impulses, the symposium successfully concluded on 19 February 2025. The organisers—the German Society for Plant Protection and Plant Health (DPG) and the Julius Kühn Institute (JKI)—gave positive feedback and are already planning the next symposium in 2027.

The PPPHI symposium series was launched in 2005 and usually takes place every two years. The special feature of the event series is that current plant protection topics are also considered from the perspective of authorisation and regulation, thus creating a platform for exchange between science, industry and the legislative.

For more information on the symposium and available presentations, visit: ppphi.plant-protection.net.

The Symposium was well attended - 80 participants from 9 countries took part in the PPPHI.

HIDDEN SIGNALS IN WATER REVEAL DISEASE EARLY IN TOMATO PLANTS

THE HEBREW UNIVERSITY OF JERUSALEM NEWS, 14 APRIL 2025

Photo credit: Shani Friedman (Goldfarb).

A study led by PhD student Shani Friedman (Goldfarb), under the supervision of Prof. Menachem Moshelion from the Institute of Plant Sciences and Genetics in Agriculture at the Hebrew University of Jerusalem, has demonstrated a new approach to detect Fusarium wilt in tomatoes at its earliest stages, long before symptoms become visible. This research offers significant implications for plant science, providing breeders and scientists a robust method to improve early disease detection and deepen understanding of plant-pathogen interactions.

Fusarium wilt, caused by the soilborne fungus *Fusarium oxysporum* f. sp. *lycopersici*, is a devastating disease that results in substantial economic losses worldwide. Traditionally, the detection of plant diseases such as Fusarium wilt relies on visual assessments, which can often be subjective and inaccurate. By the time symptoms are visible, substantial damage has usually already occurred.

This study published in March 2025, however, takes a different approach, focusing on precise water-relation measurements using a high-throughput physiological phenotyping system. The research team employed advanced lysimeter technology to continuously monitor transpiration rates and biomass changes of tomato plants in a semi-controlled greenhouse environment. Remarkably, they observed a decrease in the plants' transpiration rates days to weeks before any visual symptoms appeared.

“This research demonstrates that water-related physiological traits like transpiration can act as sensitive, reliable early indicators of *Fusarium* infection,” explained Shani Friedman. “We were able to quantitatively measure how plants respond to the pathogen well before they exhibited the traditional visible symptoms of disease.”

The study's quantitative method not only detects disease early but also measures pathogen virulence and plant susceptibility. This gives researchers and farmers clear, numeric data to determine how aggressively a pathogen is affecting crops, and to assess how different tomato varieties resist or tolerate Fusarium wilt.

Dr. Shay Covo, a key collaborator from the Department of Plant Pathology and Microbiology, emphasised the broader relevance of the findings: “This quantitative approach opens new directions for studying plant–pathogen interactions. It enables us to understand better how pathogens influence plants at the early stages of the disease” Prof. Menachem Moshelion highlighted the potential of the methodology beyond tomato plants: “Our approach opens exciting possibilities not just for tomato plants, but for agricultural practices in general. Early detection through physiological monitoring can significantly reduce crop losses and enhance sustainable agricultural management.”

This innovative methodology has potential beyond tomatoes. The research team also successfully applied it to potato plants infected with late blight, demonstrating the versatility of their physiological monitoring system for other important plant diseases.

Solo or in Concert: SUMOylation in Pathogenic Fungi

A review by You-Jin Lim and Yong-Hwan Lee titled "Solo or in concert: SUMOylation in pathogenic fungi" was published on 1 April 2025 by *The Plant Pathology Journal* (vol. 41 (2), pages 140-152). The abstract is as follows:-

SUMOylation plays a pivotal role in DNA replication and repair, transcriptional stability, and stress response. Although SUMOylation is a conserved post-translational modification (PTM) in eukaryotes, the number, type, and function of SUMOylation-associated components vary among mammals, plants, and fungi. SUMOylation shares overlapping features with ubiquitination, another well-known PTM. However, comparative studies on the interplay between these two PTMs are largely limited to yeast among fungal species. Recently, the role of SUMOylation in pathogenicity and its potential for crosstalk with ubiquitination have gained attention in fungal pathogens. In this review, we summarize recent findings on the distinct components of SUMOylation across organisms and describe its critical functions in fungal pathogens. Furthermore, we propose new research directions for SUMOylation in fungal pathogens, both independently and in coordination with other PTMs. This review aims to illuminate the potential for advancing PTM crosstalk research in fungal systems.

Read paper.

A chemical radar allows bacteria to detect and kill predators

A paper by Shuaibing Zhang *et al.* titled "A chemical radar allows bacteria to detect and kill predators" was published on 1 May 2025 by *Cell* (vol. 188 (9), pages 2495-2504). The abstract is as follows:-

Amoebal predation exerts a strong evolutionary selection pressure on bacteria, thus driving the development of effective predator-defense strategies. However, little is known about the molecular interplay between bacteria and predators, particularly how bacteria can sense and kill their microbial predators. We show how the ubiquitous bacterium *Pseudomonas syringae* detects and kills the social amoeba *Polysphondylium pallidum*. Combining comparative genomics, molecular biology, and chemical analyses, we identified a chemical radar system. The system relies on *P. syringae* secreting the lipopeptide syringafactin, which is deacylated by the amoeba. The resulting peptides are sensed via the bacterial sensor protein chemical radar regulator (CraR) that activates genes for converting the predator-derived signal into the amoebicide pyrofactin. This system is widespread in *P. syringae* and enables bacteria to infect *A. thaliana* in the presence of amoebae. Our study advances the understanding of microbial sensing and opens new avenues for the discovery of natural products.

Read paper.

SCIENTISTS CLOSER TO ENGINEERING MORE RESILIENT FOOD CROPS

AUSTRALIAN NATIONAL UNIVERSITY NEWS, 9 MARCH 2025

The discovery of a powerful "weapon" used by many disease-causing fungi to infect and destroy major food crop staples, such as rice and corn, could offer new strategies to bolster global food security, according to researchers from The Australian National University (ANU) in collaboration with scientists in Germany and the United States.

Like humans, many fungi rely on plants as a food source. This impacts the yield of food crops. It's estimated farmers lose between 10 to 23 per cent of their crops to fungal disease every year.

The global research team discovered that an enzyme known as a 'NUDIX hydrolase' is used by many fungal pathogens as a weapon to cause disease in plants. The findings are published in *Science*. By uncovering the role this enzyme plays in infecting plants, the researchers believe they can engineer more resilient rice crops, as well as other fruit and vegetable crops, capable of safeguarding themselves against disease. The findings could help bolster food security in nations where rice and corn are major commodities. According to the US Department of Agriculture, rice is the primary staple food for more than half of the world's population.

"Much of our work focused on the pathogenic fungus *Magnaporthe oryzae*, which causes rice blast disease. Rice is a critically important food staple, and losses from rice blast could feed 60 million people each year," ANU Associate Professor Simon Williams said.

Lead author Dr Carl McCombe, who completed this work as part of his PhD at ANU, said the disease-causing enzyme can infiltrate plant cells and attack a key signalling molecule involved in the sensing of phosphate – a vital nutrient necessary for plant survival. He said the enzyme "hijacks" key molecular pathways and tricks the plant into thinking it has a shortage of phosphate, activating a starvation-like response in the plant. This allows the pathogen to evade the immune system's natural defence mechanisms and cause disease in the crop.

"In collaboration with colleagues at the Australian Nuclear Science and Technology Organisation, we were able to reveal the structure of the enzyme in detail using a technique called X-ray crystallography," Dr McCombe, who is now a postdoctoral researcher at the California Institute of Technology (Caltech), said. "Understanding what the enzyme looks like gave us critical insights into how it is used by pathogens to attack plants."

Associate Professor Williams, who led the ANU research team's contribution to this work, said in addition to engineering new crops with a turbocharged immune system, the research findings could also help scientists uncover new ways to deactivate the "hijacking effect" of the enzyme, similar to turning it on and off like a light switch.

"Our research also reveals that the NUDIX hydrolase is used as a 'weapon' by many different fungi, including ones that are responsible for causing anthracnose disease in fruit, vegetable and seed crops. These diseases impact crop production in foods such as mangoes, melons, corn and chickpeas – produce that Australians enjoy daily," he said. "This suggests our work also has implications to safeguard other important fruit and vegetable staples."

Associate Professor Williams said the findings offer a roadmap to develop new disease management strategies. "This could involve engineering the plant's immune system to detect the enzyme or block its function. This could help farmers protect their crops and secure global food supplies," he said.

SCIENTISTS UNCOVER NOVEL IMMUNE MECHANISM IN WHEAT TANDEM KINASE

EUREK ALERT, CHINESE ACADEMY OF SCIENCES HEADQUARTERS, 1 APRIL 2025

Wheat is grown over more land area than any other food crop. Among pathogen-driven threats to wheat, fungi top the list, causing billions of dollars of losses each year and posing a serious challenge to food security worldwide.

In an effort to combat this problem, a research team led by Prof. LIU Zhiyong from the Institute of Genetics and Developmental Biology of the Chinese Academy of Sciences, together with collaborators, has uncovered a novel immune mechanism by which tandem kinase proteins (TKPs) combat pathogen invasion in wheat.

TKPs are a recently discovered class of disease resistance proteins in wheat and barley. Characterized by two or more tandemly arranged kinase domains, these signaling proteins provide resistance against various fungal pathogens, including stripe rust, leaf rust, stem rust, powdery mildew, wheat blast, and smut. Their potential in breeding applications has garnered considerable attention.

The current study, which was published in Science on March 27, expands the understanding of TKP functionality. It establishes a new paradigm for cooperation between TKPs and nucleotide-binding leucine-rich repeat (NLR) proteins—a type of immune receptor protein—in disease resistance. Specifically, the researchers discovered that an atypical NLR protein, WTN1 (Wheat Tandem NBD 1), partners with the TKP WTK3 to detect pathogen effectors and initiate immune responses, thereby conferring resistance to multiple fungal diseases in wheat.

With this discovery, the study bridges a critical gap in understanding immune regulatory pathways and offers a foundation for engineering crop varieties with broad-spectrum pathogen resistance.

Previously, the research team successfully cloned the broad-spectrum powdery mildew resistance genes Pm24 (WTK3) and Pm36 (WTK7-TM), both of which encode novel TKPs derived from Chinese wheat landrace and wild emmer wheat, respectively. However, key questions remained regarding how these resistance proteins recognize pathogen effectors, what functional roles their kinase domains play, and which immune pathways they activate.

To address these questions, the researchers screened ethyl methanesulfonate (EMS)-induced susceptible mutants of Pm24 (WTK3) and identified WTN1 as a pivotal component of the WTK3-mediated disease resistance pathway. Genetic analyses and genome editing demonstrated that WTN1 is essential for WTK3-mediated immunity against wheat powdery mildew. The WTK3-WTN1 pair operates via a sensor-executor cooperative model, with WTK3 not only conferring resistance to powdery mildew but also recognizing the wheat blast effector PWT4, thus extending its resistance potential.

Using a multidisciplinary approach—including plant immunology, biochemical assays, electrophysiological experiments, and evolutionary analysis—the researchers uncovered a finely coordinated relationship between WTK3 and WTN1. Their findings indicate that WTK3 consists of two critical functional modules: the pseudo-kinase fragment (PKF) and the first kinase domain (Kin I), which recognize pathogen effectors, and the second kinase domain (Kin II), which interacts with WTN1 to form a robust "defense team." Upon pathogen detection, the WTK3-WTN1 complex activates an ion channel, facilitating calcium ion (Ca^{2+}) influx and inducing hypersensitive responses and programmed cell death to curb infection.

Beyond its scientific impact, this study offers significant agricultural value. Pm24 (WTK3) originates from Chinese wheat landraces and has been successfully introduced into high-yield wheat varieties through backcrossing and marker-assisted breeding. These newly developed high-yielding disease-resistant germplasms have been freely distributed to domestic breeding institutions, addressing the scarcity of broad-spectrum powdery mildew resistance genes in China's key wheat-producing regions.

Moreover, this breakthrough paves the way for establishing genetic barriers against wheat blast and supports sustainable agricultural development and industry advancements.

CIRCADIAN CLOCK IS CRITICAL FOR FUNGAL PATHOGENESIS BY REGULATING ZINC STARVATION RESPONSE AND SECONDARY METABOLISM

A paper by Qiaojia Lu *et al.* titled “Circadian clock is critical for fungal pathogenesis by regulating zinc starvation response and secondary metabolis” was published on 28 March 2025 by *Science Advances* (vol. 11 (13), eads1341). The abstract is as follows:-

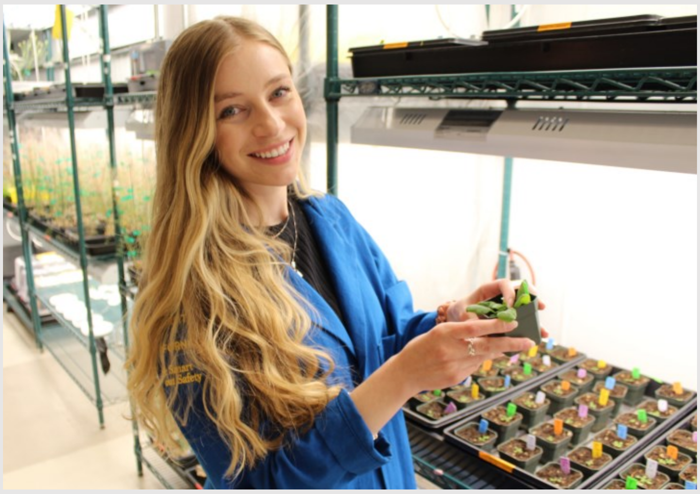
Circadian clocks are known to modulate host immune responses to pathogen infections, yet their role in influencing pathogen pathogenesis remains unclear. Here, we investigated the role of circadian clocks in regulating the pathogenesis of the fungal pathogen *Fusarium oxysporum*, which has multiple genes homologous to the *Neurospora crassa frq* due to gene duplication events, with Fofrq1 being the primary circadian clock gene. The pathogenesis of *F. oxysporum* in plants is controlled by its circadian clock, with infections causing severe disease symptoms at dawn. Notably, disruption of clock genes dramatically reduces fungal pathogenicity. Circadian clocks regulate the rhythmic expression of several transcription factors, including FoZafA, which enables the pathogen to adapt to zinc starvation within the plant, and FoCzf1, which governs the production of the toxin fusaric acid. Together, our findings highlight the critical roles of circadian clocks in *F. oxysporum* pathogenicity by regulating zinc starvation response and secondary metabolite production.

Read paper.

TRIGGERING PARASITIC PLANT 'SUICIDE' TO HELP FARMERS

UC RIVERSIDE NEWS, 20 MARCH 2025

Parasitic weeds are ruthless freeloaders, stealing nutrients from crops and devastating harvests. But what if farmers could trick these invaders into self-destructing? Scientists at UC Riverside think they've found a way.



UCR student Annalise Kane, co-first author of the study (Photo credit: Claudia Sepulveda, UCR).

Across sub-Saharan Africa and parts of Asia, places already struggling with food insecurity, entire fields of staples like rice and sorghum can be lost to a group of insidious weeds that drain crops of their nutrients before they can grow. Farmers battle these parasites with few effective tools, but UCR researchers may be able to turn the weeds' own biology against them.

This trick is detailed in the journal *Science*, and at its heart lies a class of hormones called strigolactones—unassuming chemicals that play dual roles. Internally, they help control growth and the plants' response to stresses like insufficient water. Externally, they do something that is unusual for plant hormones.

“Most of the time, plant hormones do not radiate externally—they aren't exuded. But these do,” said UCR plant biologist and paper co-author David Nelson. “Plants use strigolactones to attract fungi in the soil that have a beneficial relationship with plant roots.”

Unfortunately for farmers, parasitic weeds have learned to hijack the strigolactone signals, using them as an invitation to invade. Once the weeds sense the presence of strigolactones, they germinate and latch on to a crop's roots, draining them of essential nutrients. “These weeds are waiting for a signal to wake up. We can give them that signal at the wrong time—when there's no food for them—so they sprout and die,” Nelson said.

To understand strigolactone production, the research team led by Yanran Li, formerly at UCR and now at UC San Diego, developed an innovative system using bacteria and yeast. By engineering *E. coli* and yeast cells to function like tiny chemical factories, they recreated the biological steps necessary to produce these hormones. This breakthrough allows researchers to study strigolactone synthesis in a controlled environment and potentially produce large amounts of these valuable chemicals.

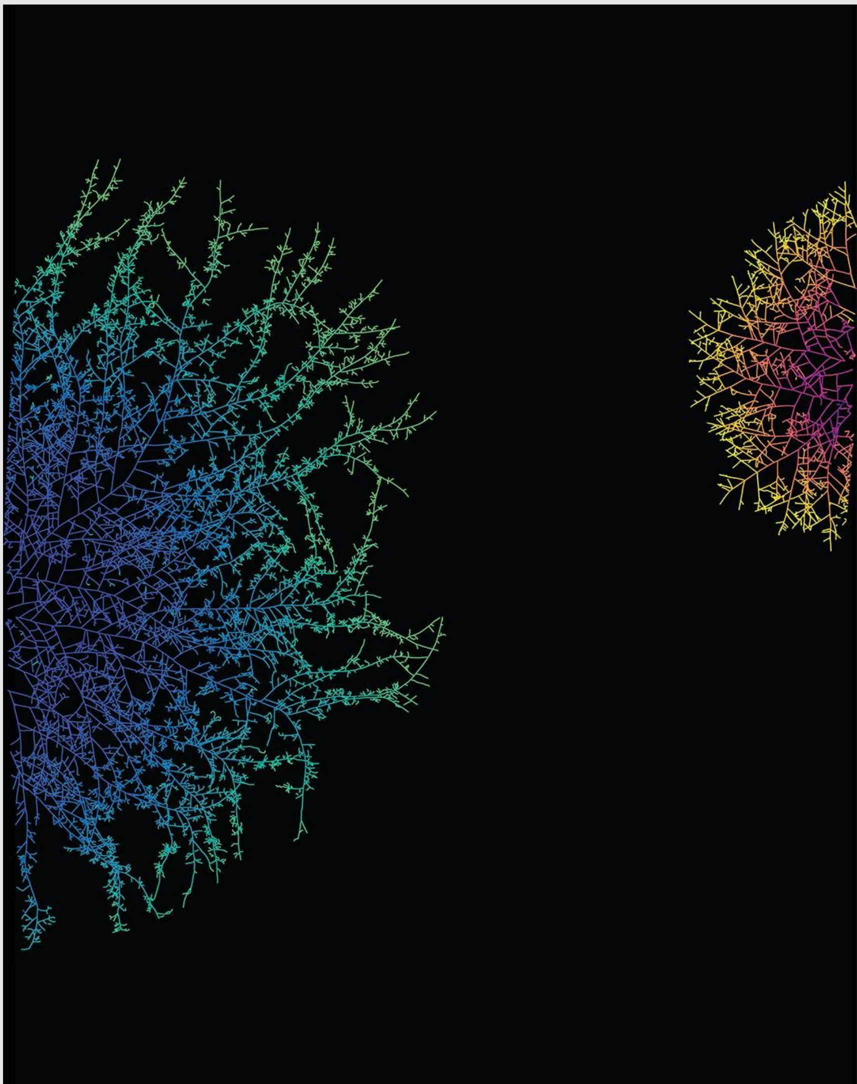
The researchers also studied the enzymes responsible for producing strigolactones, identifying a metabolic branch point that may have been crucial in the evolution of these hormones from internal regulators to external signals. “This is a powerful system for investigating plant enzymes,” Nelson said. “It enables us to characterise genes that have never been studied before and manipulate them to see how they affect the type of strigolactones being made.”

Beyond agriculture, strigolactones hold promise for medical and environmental applications. Some studies suggest they could be used as anti-cancer or anti-viral agents, and there is interest in their potential role in combating citrus greening disease, which is doing large-scale damage to citrus crops in Florida.

RESEARCH REVEALS THE UNDERGROUND 'TRAFFIC' BETWEEN FUNGI AND PLANTS

SCOTT LYON, PRINCETON UNIVERSITY NEWS, 25 MARCH 2025

For as long as plants have lived on land, fungi have sustained them. Beneath every giant sequoia, every wheat stalk, every black-eyed Susan, hidden webs of filigreed mycelia permeate the plants' roots and tie them into the surrounding soil. The fungi's hollow tendrils forage for nutrients, and they transport those nutrients to the plants' roots in exchange for carbon, in the form of sugars and fats.



Growing tips pull an expanding wave of nutrient-absorbing mycelium. Here, color represents age, with brighter colors at the younger edges (Photo credit: Corentin Bisot, VU Amsterdam).

Our entire planetary ecosystem would cease to exist as we know it without this complex relationship. And yet the slow pace of growth and the subterranean environs make these organisms and their partnerships stubbornly hard to study.

Now an international team from multiple institutions including Princeton University has devised a way to watch these mycorrhizal fungi in stunning detail, revealing key mechanisms that have enabled them to solve extraordinary problems for roughly half a billion years.

"Under the ground, there are all these things happening that no one ever thinks much about because they don't see them," said Howard Stone, Princeton's Neil A. Omenn '68 University Professor of Mechanical and Aerospace Engineering and one of the study's authors.

Over the course of several years, a team of 28 researchers from the Netherlands, France and the United States pieced together a picture of "not only how the architecture of these networks gets created, but also the fluid motions that are happening inside these long tubes, that are about one-tenth the diameter of the human hair," Stone said.

The closer one looks at these hairlike tubes, the more puzzling they become. The fluids carrying sugars and fats and those carrying phosphorous and nitrogen flow in two different directions within the same space, for one thing. And while these flows are largely consistent over the long run, in places they speed up and slow down, change directions, and solve all kinds of dynamic problems in ways that confound and inspire in equal measure.

The paper's senior authors include evolutionary biologist Toby Kiers of Vrije Universiteit Amsterdam and the Society for the Protection of Underground Networks (SPUN); biophysicist Thomas Shimizu, a group leader at the AMOLF Institute in Amsterdam; and biologist Merlin Sheldrake of VU Amsterdam and SPUN.

The study, published in February in the journal *Nature*, spelled out three main findings.

"First, the fungi favor opportunities in the future over gains in the short term," Shimizu said in a video released by the researchers.

He said the fungi develop specialized growing tips that act as pathfinders, exploring new territory and pulling with them a massive network of "intricate, lacelike mycelium that is just dense enough to forage for phosphorous.

"That's the commodity they can exchange for more carbon," he added.

The networks are both expansive and efficient. They are responsible for storing around 13 billion tons of carbon dioxide every year, more than a third of global annual fossil fuel emissions, according to the researchers. The fungi use that carbon to grow and to weave structure into the soils, preventing erosion.

Kiers, the chief scientist and executive director at SPUN, said the study's second finding is the most interesting: that the nutrient-rich fluids inside the hyphae move in two directions at the same time.

"We know that two-way traffic is more efficient than one-way traffic, but it can also be prone to congestion," she said.

SCIENTISTS DECODE CITRUS GREENING RESISTANCE AND DEVELOP AI-ASSISTED TREATMENT

EUREK ALERT, CHINESE ACADEMY OF SCIENCES HEADQUARTERS, 10 APRIL 2025

In a groundbreaking study published in *Science*, a research team led by Prof. YE Jian from the Institute of Microbiology of the Chinese Academy of Sciences has identified the first mechanism of citrus resistance to citrus greening disease, or huanglongbing (HLB).

Utilising artificial intelligence (AI), the team has also developed antimicrobial peptides that offer a promising therapeutic approach to combat the disease. This discovery addresses a long-standing challenge in the agricultural community—the absence of naturally occurring HLB-resistant genes in citrus.

Citrus greening disease is one of the most destructive plant diseases in modern agriculture, causing billions of dollars in losses annually. The disease, primarily triggered by the bacterium *Candidatus Liberibacter asiaticus* (CLas), is spread by the Asian citrus psyllid (*Diaphorina citri*). With no known cure, HLB has devastated millions of acres of citrus crops across 50 countries in Asia, Africa, the Americas, and Europe, making it a "100-year disease" due to its profound impact and the difficulty of eradication. All commercial citrus varieties are susceptible, and once infected, trees typically perish within a few years.

To address this issue, the researchers identified a key resistance pathway involving the transcription factor MYC2 and its interacting E3 ligase, PUB21. By examining citrus species and their distant relatives in the Rutaceae family, they discovered PUB21 paralogs in *Bergera koenigii* (curry leaf plant) and *Zanthoxylum bungeanum* (Sichuan pepper plant). These paralogs encode a dominant-negative form of PUB21 (PUB21DN), featuring a crucial mutation at residue 39 that suppresses PUB21 activity. This suppression stabilises the MYC2 protein and significantly enhances defense pathways and antibacterial metabolites production, conferring immunity to HLB. Transgenic citrus plants engineered to overexpress PUB21DN demonstrated increased resistance to the disease.

Building on these natural resistance mechanisms, the researchers used AI-driven screening technology to stabilise MYC2 by inhibiting PUB21 activity. Through this approach, they identified a group of anti-proteolysis peptides (APPs), including APP3-14, which showed promising results in both greenhouse and field trials. APP3-14 not only effectively controlled the HLB-causing pathogen CLas but also disrupted disease transmission, achieving a up to 80% control efficiency in a single season.

This breakthrough offers a dual benefit: the development of druggable peptides for eco-friendly bio-pesticides and a novel strategy to combat uncultivable pathogens through targeted protein stabilisation. Beyond HLB, this strategy could help address other plant diseases caused by difficult-to-culture pathogens, such as maize rust fungus and *Xylella fastidiosa*, which leads to Olive Quick Decline Syndrome (OQDS). By targeting pathogen effectors and stabilising host immune proteins, this study paves the way for innovative disease resistance solutions in various crops, offering new hope for global agricultural sustainability.

CURRENT VACANCIES

Assistant Professor, Department Plant Pathology, Washington State University (Position # R-13240)

The successful candidate will be part of a dynamic research and extension team comprising WSU and USDA scientists over several academic units based in Pullman and the Research and Extension Centers in Prosser and Mount Vernon, WA. Washington is the second largest producer of processing potatoes in the United States and has substantial table and seed potato production. The successful candidate is expected to participate in transdisciplinary teams, collaborate with faculty at WSU as well as with state, federal, and industry scientists in the region and beyond. Potential research areas may include, but are not limited to, the etiology, ecology, epidemiology, diagnostics, population biology, and management of pathogens relevant to processing, table, and seed potato production in Washington, with a primary focus on fungal, oomycete, and bacterial diseases. The candidate will develop an integrated extension program that engages with diverse stakeholders in the Pacific Northwest potato industry. The successful candidate is expected to acquire competitive grant funding from national, regional, state, and industry sources.

Teaching duties include a graduate level course in epidemiology and management of plant diseases and contributions to a team-taught introductory plant pathology course. The person filling this position is expected to serve as an effective mentor to both undergraduate and graduate students, and to serve as major advisor and committee member for students working toward M.S. and Ph.D. degrees. The successful candidate will also be expected to contribute to student recruitment and retention, and participate in departmental, university, and professional service activities. The successful applicant will be expected to conduct a program of research and effective engagement consistent with the mission of the WSU CAHNRS Office of Research (https://cahnrs.wsu.edu/research/). The person will also contribute to WSU's strategic focus on diversity, equity, and inclusion.

This is an 11-month appointment for the first three years, then a 9-month appointment thereafter. The candidate may supplement their salary for the additional month(s).

Deadline: Application screening will begin on 21 April 2025.

More information on job and submit application.

ACKNOWLEDGEMENTS

Thanks to Grahame Jackson, Greg Johnson, and Noemi Meßmer for contributions.

COMING EVENTS

International Symposium on Plant Pathogenic Sclerotiniaceae - BotryScleroMoni 2025. Joint meetings of XIX International *Botrytis* Symposium, XVII International *Sclerotinia* Workshop, and II International *Monilinia* Workshop
25 May – 30 May, 2025
Thessaloniki, Greece
Website: botryscleromoni.com

Australasian Plant Pathology Society Conference
26 May – 28 May, 2025
International Convention Centre at Darling Harbour, Sydney, Australia
Website: www.apps2025.org

14th Conference of the European Foundation for Plant Pathology (EFPP)
2 June – 5 June, 2025
Uppsala, Sweden
Website: www.efpp2025.com

XVII Working Group "Biological and integrated control of plant pathogens." From single microbes to microbiome targeting One Health.
11 June – 14 June, 2025
University of Torino, Torino, Italy
Contacts: Davide Spadaro and Monica Mezzalama
Email: iobc2025@symposium.it
Website: www.iobctorino2025.org

17th International Cereal Rusts and Powdery Mildews Conference
15 June – 20 June, 2025
Vancouver, Canada
Website: icrpmc2025.ca

International summer school: "Plant Pathogenomics for Sustainable Future Food"
23 June – 27 June, 2025
Bologna, Italy
Website: www.2p4s2f.com

17th Congress of the Mediterranean Phytopathological Union - New phytopathology frontiers of research and education for plant health and food safety
7 July – 10 July, 2025
Ciheam-Bari, Italy
Contact and Email: Anna Maria D'Onghia
mpu2025@iamb.it
Website: www.mpunion.org

13th International Workshop on Grapevine Trunk Diseases
21 July – 25 July, 2025
Ensenada, Baja California, México
Contact and Email: Rufina Hernández
13iwgtd@cicese.mx
Website: 13iwgtd.cicese.mx

Plant Health 2025
2 August – 5 August, 2025
Honolulu, Hawaii
Website:
www.apsnet.org/meetings/annual/PH2025/Pages/default.aspx

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

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

13th International Congress of Plant Pathology 2028
19 August – 25 August, 2028
Gold Coast, Queensland, Australia
Website: www.icpp2028.org

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

WWW.ISPPWEB.ORG

The ISPP List is an e-mail list server which broadcasts messages and announcements to its subscribers. Its goal is to facilitate communication among members of the International Society for Plant Pathology and its Associated Societies. Advertised vacancies in plant pathology and ISPP Newsletter alerts are also sent to members of the ISPP List.

In accordance with the guidelines and recommendations established by the new EU General Data Protection Regulation 679/2016 (GDPR), the International Society for Plant Pathology has created a Privacy Information Notice containing all the information you need to know about how we collect, use and protect your personal data.

This policy explains when and why we collect personal information about our users, how we use it, the conditions under which we may disclose it to third parties, how we keep it safe and secure and your rights and choices in relation to your personal information.

Should you need further information please contact business.manager@issppweb.org

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