



PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

ISPP NEWSLETTER

ISSUE 52 (4) APRIL 2022

Editor: Daniel Hüberli ([email](#))

Join the ISPP [mail list](#)

IN THIS ISSUE:

Fundraising Campaign for ISPP Resilience Bursary for Plant Pathologists

Webinar "Highlights on seedborne pathogens" - 29 April 2022, 4 pm CEST

The Jakob Eriksson Prize for Plant Pathology - Call for Nominations extended to 15 April 2022

Our Plants, Our Future - news from the British Society for Plant Pathology, March 2022

Summer School: Nanotechnology in Agriculture

Obituary of Dr John Ingram Pitt, 1937-2022

Long-read genome sequencing of bread wheat facilitates disease resistance gene cloning

May 12th as the International Day of Plant Health

A new noteworthy paper in Climate on kiwifruit bacterial canker disease modelling

The hardy wild grass that could save our bread

Indian Government has exempted SDN1 and SDN2 type of edited plants

Current Vacancies

Acknowledgements

Coming Events



INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

WWW.ISPPWEB.ORG

FUNDRAISING CAMPAIGN FOR ISPP RESILIENCE BURSARY FOR PLANT PATHOLOGISTS

Dear Colleagues,

National and regional conflicts around the world have unfortunately displaced many plant pathologists in the past and present, creating financial hardships. The International Society for Plant Pathology is establishing a “Resilience Bursary for Plant Pathologists” with immediate effect as per direction of the Executive Committee. The fund will be used to support emergency/refugee situations, specifically for plant pathologists.

The current urgent need is the plant pathologists from Ukraine, who are reaching Poland and other countries as refugees. It is urgent that ISPP support our fellow plant pathologist refugees and the vital work that they have been doing to reduce plant disease losses and assure food and fiber security in the region.

Thus, to begin, ISPP will provide \$6,000 for the Resilience Bursary for Plant Pathologists. We will initially liaise with the Polish Phytopathological Society, but we anticipate working with other societies on this effort.

In addition to this primary investment for the ISPP Resilience Bursary, we are requesting ISPP’s affiliate societies around the world and individual members to contribute to a fund-raising campaign to allow support of additional fellowships through this program.

Every \$ that you donate will be set specifically to support this cause and will be disbursed with careful immediate attention and verification. ISPP will establish a process for reviewing support requests.

In addition, the ISPP will collate information from scientists who have current collaborative projects with Ukrainian plant pathologists (or graduate students in plant pathology) to identify additional opportunities for support or linkages. This information will be kept confidential for privacy protection. Submit comments to resilience@isppweb.org.

If you have any suggestions, questions, or information that you would like to share about colleagues that may need help, please email us at: resilience@isppweb.org.

Credit card payment link for donation to the Fundraising Campaign for ISPP Resilience Bursary is below.

Funds can also be provided as a check or bank wire to ISPP. Please communicate with resilience@isppweb.org to get specific information. The donation will be considered a gift to this program and is tax deductible in the U.S.

Please share this with everyone whom you think would also be interested in supporting and contributing. ISPP is also seeking support from institutional partners.

Thank you!

Sincerely,

Jan E. Leach
ISPP President

EURO:



USD:



WEBINAR "HIGHLIGHTS ON SEEDBORNE PATHOGENS" - 29 APRIL 2022, 4 PM CEST

GIANFRANCO ROMANAZZI, ISPP SEED PATHOLOGY COMMITTEE CHAIR

Seedborne pathogen contamination is very important for seed quality because of damage that can be produced in the following crop, and even more for introduction of these pathogens into a new environment. The detection of seedborne pathogens is crucial, and setting up of diagnostic tools is one of the priorities of seed pathologists. The ISPP Seed Pathology Committee, in cooperation with International Seed Federation, International Seed Testing Association and Euphresco network, planned a webinar focusing on available knowledge on seedborne pathogens and will inform the audience about a starting project within Euphresco network that was proposed to share knowledge on and set up infested seed collections, that can be enlarged to further interested participants.



Webinar

"HIGHLIGHTS ON SEEDBORNE PATHOGENS"

29 April 2022, 4 pm CEST



ORGANISERS: ISPP Seed Pathology Committee, in cooperation with ISTA and ISF

MODERATOR: Gianfranco Romanazzi – ISPP Seed Pathology Committee Chair

WELCOME ADDRESS: Baldissera Giovani – Euphresco Coordinator

TALKS

Nicolas Denancé – GEVES and ISTA, France, and **Benedicte Lebas** - ISF
Seed pathway of pests: current knowledge, risk management and future challenges

Valerie Grimault and Justine Foucher - GEVES, France
Pest detection and identification in seeds: the importance of method validation and verification of proficiency of laboratories linked to the need of characterized seed lots. Example of an Euphresco project

To join the webinar and ask questions the registration link is <https://zoom.us/meeting/register/tJ0pd-6tqTsiGte46OOE2NT4AjiF07He0Q4d>. The webinar will be also delivered on the page (2) ISPP Seed Pathology Committee | Facebook



[ISPP Seed Pathology](https://www.ispp-seedpathology.org)



[ISPP Seed Pathology](https://www.facebook.com/isppseedpathology)



[ISPP Seed Pathology](https://twitter.com/isppseedpathology)



[ispp_seedpathology](https://www.instagram.com/ispp_seedpathology)

Interested people can register and connect at the link:

<https://zoom.us/meeting/register/tJ0pd-6tqTsiGte46OOE2NT4AjiF07He0Q4d>

THE JAKOB ERIKSSON PRIZE FOR PLANT PATHOLOGY - CALL FOR NOMINATIONS EXTENDED TO 15 APRIL 2022

JAKOB ERIKSSON PRIZE COMMISSION

The premier award for achievement in plant pathology, the [Jakob Eriksson Prize](#), was established in 1923 to honor the memory of Jakob Eriksson, a prominent Swedish mycologist and plant pathologist who died in 1931. He was also a dedicated internationalist who espoused the cause of international cooperation in plant pathology. The Prize will be awarded at the [International Congress of Plant Pathology](#) held in Lyon, France from 20-23 August 2023. The Royal Swedish Academy of Sciences administers the Jakob Eriksson Prize Fund which provides for a gold medal award at Congresses of the International Society for Plant Pathology.

Nominations are solicited for a candidate of distinction in recognition of research in mycology, in plant pathology, or in virus diseases, or of a particular publication dealing with such subjects, with the understanding that the work being recognised is of a distinct international value and merit.

The following rules apply to those making nominations:

- i. Nominators must provide a short statement (2 pages or 500 words) justifying the selection of the nominee plus a short CV maximum three pages, and a publication list of the most relevant papers/publications or reports – maximum 20 references. Do not send a detailed Curriculum Vitae. More detail than these requirements will be sought by the Commission if required.
- ii. Names of all nominees must be strictly confidential,
- iii. Individuals cannot nominate themselves and nominators should declare any professional affiliation with the nominee.
- iv. No correspondence concerning unsuccessful nominations will be entered into.

All nominations are to be sent to the Chair of the Prize Commission, in an email headed “Jakob Eriksson Prize Nomination 2023”. Send the email to ErikssonPrize@ISPPweb.org with a c.c. to the ISPP Business Manager (andrea.masino@unito.it). The call for nominations will now close on 15 April 2022.

Prize Selection

- i. The Jakob Eriksson Prize Commission, in consultation with the Executive of ISPP, will independently undertake the selection processes to enable a recommendation of the Jakob Eriksson Prize recipient at least one year before each International Congress of Plant Pathology.
- ii. The Chair of the Commission will advise the ISPP President of the Commission’s recommendation, and after appropriate deliberation, the President of the ISPP will invite the successful nominee to accept the award.

- iii. The Prize Ceremony
- iv. The participation of the Jakob Eriksson Prize recipient in the International Congress of Plant Pathology will be facilitated by the ISPP and the Congress Organisers. Normally this will include complementary Congress registration and attendance at Congress social functions, return economy travel to the Congress and some support for accommodation and reasonable expenses for the duration of the Congress.
- v. The Prize Ceremony will be planned by the ISPP in consultation with the Prize recipient, the Commission Chair and the Congress Organisers.
- vi. As part of the Prize Ceremony, the Prize recipient will also be invited to briefly present their work at the Congress as The Jakob Eriksson Oration with scope and coverage in a style suitable for a more general audience.

The Royal Swedish Academy of Sciences will provide the Jakob Eriksson gold medal.

Information about the selection process is available [here](#).

Jacob Eriksson Prize - 1993-2018

Past recipients of the Prize have included:

- 1993. 7th Recipient - Prof Dr Ir Ariena H.C. van Bruggen, Professor Biological Farming Systems at Wageningen University, at the 6th International Congress of Plant Pathology.
- 1998. 8th Recipient - Dr Richard Frederiksen, Professor of Plant Pathology at Texas A&M University, at the 7th International Congress of Plant Pathology in Edinburgh.
- 2003. 9th Recipient - Dr. Jaccov Katan of the Hebrew University, Jerusalem, at the 8th International Congress of Plant Pathology in Christchurch, New Zealand.
- 2008. 10th Recipient - Dr. Laurence V. Madden of the Ohio State University, at the 9th International Congress of Plant Pathology in Torino, Italy.
- 2013. 11th Recipient - Professor Jeffrey B. Jones of the University of Florida at the 10th International Congress of Plant Pathology in Beijing, China.
- 2018. 12th Recipient – Emeritus Professor Pierre JGM de Wit of the Laboratory of Phytopathology, Wageningen University, the Netherlands, at the 11th International Congress of Plant Pathology in Boston, USA.

OUR PLANTS, OUR FUTURE - NEWS FROM THE BRITISH SOCIETY FOR PLANT PATHOLOGY, MARCH 2022

ROSALIND NOBLE, POLICY AND PUBLICITY OFFICER, BSPP

Vibrant plans were made for the International Year of Plant Health 2020, but hopes were dashed by the COVID-19 lockdowns. [‘Our Plants, Our Future’](#) in London, was the British Society for Plant Pathology’s (BSPP’s) first planned conference of three major events for 2020. Despite these setbacks, we presented ‘Our Plants, Our Future’ at the BSPP Presidential conference in December 2021.

Hosted by Professor Nicola Spence (BSPP President 2020-21 and Defra, UK, Plant Health Chief), this was our first hybrid conference, with all presentations streamed live across the internet. Our partners for the conference, the European Foundation for Plant Pathology (EFPP) and international delegates who were unable to travel, were able to watch and participate in question-and-answer sessions online.



Professor Nicola Spence opens the BSPP Presidential meeting for 2020-21, in December 2021; ‘Our Plants, Our Future’, at the University of Birmingham (Photo credit: BSPP).

For the 160 delegates at the University of Birmingham conference centre, there was a celebratory atmosphere, enhanced by the anticipation of finally being able to meet colleagues in the same room, after long isolation. Sessions connected plant pathology research with policy action. Following on from the November COP26 summit in Glasgow, the Chief Scientific Officer for the UK government (Professor Gideon Henderson), opened the conference with a focus on sustainable plant and environmental management in the face of global change. A diverse range of pathology disciplines and plant-pathogen systems were represented over the three days, from modelling disease epidemics, to breeding new resistant cereal cultivars and developing biocontrol strategies.

Research highlights were complemented by talks on the importance of communicating plant health across the world: with fellow pathologists, to farmers and the general public. Careers sessions connected plant pathologists at the beginning of their careers with experts from a range of plant pathology sectors. All delegates enjoyed the fantastic poster sessions and presentations by early career researchers. We celebrated with our prize winners: Louise Johns, from the University of Bath, who won the J Colhoun prize, for a poster exploring zinc acquisition by the wheat head blight pathogen, *Fusarium graminearum*; and Tania Chancellor, from Rothamsted Research Institute, who won the PH Gregory prize for a presentation on the potential for a fungal endophyte in managing the “Take-All” of wheat pathogen, *Gaeumannomyces tritici*.

BSPP honorary member for 2021, Professor Jonathan Jones, took us on a zigging and zagging journey from plant-pathogen interactions, reaching the ultimate aim of creating new plants with such durable resistance that they become “non-hosts” of their typical pathogens. The winner of the RKS Wood prize for 2021, Professor Sophien Kamoun, ended the conference on a high with a presentation highlighting developments in plant immune resistance. Looking to the future of plant disease control, with a focus on plant NLR immune proteins and how new technology could facilitate more effective tools for protecting plant health.

We look forward to 2022 with optimism, embracing the advantages of hybrid meetings for reaching our international community and forging relationships with plant pathologists, old and new. Meeting monthly, we are continuing to host free, online meetings for plant pathologists to meet and discuss a range of themes in our [plant health club](#). Our President, Professor David Collinge (University of Copenhagen, Denmark), is hosting the 2022 conference: “[Microbial Lifestyles: from Symbionts to Pathogens](#)” from 4th to 7th September, at the University of Newcastle and online.



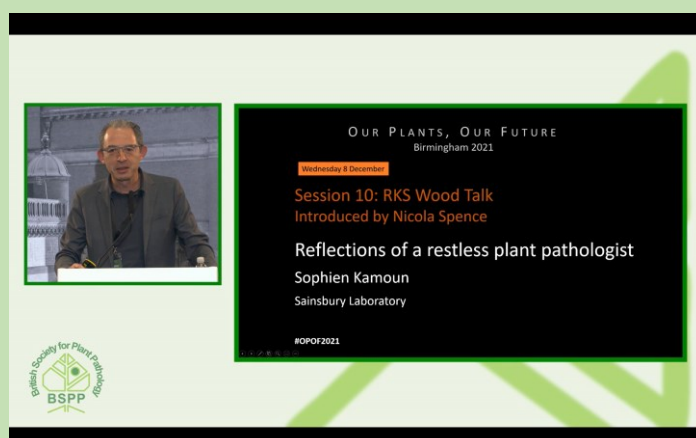
Top: Nicola Spence (left), BSPP President 2020-21, presents Louise Johns with the John Colhoun poster prize for 2021, with Gerard Clover (right);

Middle: Nicola Spence (left), BSPP President 2020-21, presents the PH Gregory prize for best presentation to Tania Chancellor (centre), from Rothamsted Research, Harpenden, with Mike Shaw (right);

Below: 2021 RKS Wood winner, for excellence in the science of plant pathology, Sophien Kamoun (The Sainsbury Laboratory), provides the final presentation of the conference, with “Reflections of a restless plant pathologist”. As seen for viewers online, at BSPP’s first hybrid conference (Photo credit: BSPP).



BSPP Presidents; Nicola Spence from 2020-21 and David Collinge for 2022 (Photo credit: BSPP).



SUMMER SCHOOL: NANOTECHNOLOGY IN AGRICULTURE

Aim: This course was devised by the collaborations of University of Tuscia (DAFNE), University of Perugia (DSF) and University of Rome La Sapienza (SBAI) among the initiatives promoted by NanoInnovation Conference and Exhibition 2022. Modern Agriculture is nowadays facing many challenges in the complex scenario of climate change, global population rise and lack of resources. In this sense Nanotechnology represents a sustainable way to boost agri-food supply chains, by reducing emissions, lowering the amount of agrochemicals and giving innovative tools to manage crops. The course will give a deepened overlook on the potential use of nanotechnology in different fields of agri-food applications. 20 academic and industrial international experts will discuss seven session on topics such as application of nanotechnology in plant nutrition and protection, nanomaterials design and characterization, environmental and human safety.

Who: Nanotechnology in Agriculture is aimed at PhD students and Post Doc researchers. The course is limited to 50 participants. Preferences will be given on the base of registration date. At moment attendance is permitted only with green pass or equivalent Covid-free certification.

When: 30th June - 1st July 2022. Pre-registrations will open on 15th of March 2022.

Where: The first edition of the Summer School Nanotechnology in Agriculture is hosted by the Department of Agriculture and Forest Sciences (DAFNE) of University of Tuscia, Via S. Camillo de Lellis snc, 01100, in the beautiful landscape of Viterbo, a medieval city in northern Latium, just few kilometers far from Rome.

More information and registration: www.unitus.it/it/dipartimento/dafne/summer-school-/articolo/nanotechnology-in-agriculture

Scientific Patronage:

- Società Italiana di Patologia Vegetale – Italian Phytopathological Society
- Associazione Italiana per la Protezione delle Piante - Italian Association for Plant Protection
- Mediterranean Phytopathological Union
- Società Italiana di Agronomia - Italian Society of Agronomy
- Dottorato in Biologia Molecolare e dello Sviluppo - Phd in Cell And Developmental Biology



Scientific committee:

- Prof. Giorgio M. Balestra
- Prof. Stefano Giovagnoli
- Prof. Emidio Camaioni
- Prof. Marco Rossi

Organising Committee:

- Prof. Giorgio M. Balestra
- Dr. Daniele Schiavi
- Prof. Luciana Dini
- Dr. Cristina Gippa

OBITUARY OF DR JOHN INGRAM PITT, 1937-2022

EXCERPT FROM BRITISH MYCOLOGICAL SOCIETY, 28 MARCH 2022

Dr John Pitt has passed away after a battle with lymphoma for a number of months. John was probably the most eminent scientist in the Food Mycology area, an expert on *Penicillium* taxonomy and pioneered research on spoilage moulds in a range of foodstuffs, much of his work in collaboration with Dr Ailsa Hocking. He also mentored many PhD students who have benefited from his expertise over many decades. Indeed, he was still working until very recently on the 4th Edition of his book on “Fungi and Food Spoilage” which will be published this year.



Dr Pitt was born on a small farm at Wamberal, on the Central Coast of NSW. He grew up on a farm and thus had significant knowledge of fruit and vegetable crops although was not interested in continuing in the family tradition. He attended primary school at Erina Heights, NSW, and then Gosford High School. After matriculation, he moved to Sydney in search of work. He was fortunate to obtain a job with CSIRO Division of Food Preservation and Transport. He was not to know then that this would result in a lifelong career in applied science. John joined CSIRO on the 1st March, 1954, just before his 17th birthday, as a Junior Technical Assistant. He slowly moved up through all the research grades, becoming a Chief Research Scientist in 1992, at the age of 55. He was probably one of the only CSIRO staff members to achieve this feat from being a technical assistant. He pioneered work on the ecology of spoilage moulds in extreme environments, especially dried fruits/foodstuffs. He published numerous papers related to the ecology of spoilage moulds, especially *Penicillium* and *Aspergillus* species.

While working he was able to attend the fledgling University of New South Wales part-time, to complete his higher education, studying Food Technology. He was able to complete this degree in 8 years. His fascination with science resulted in him undertaking an MSc qualifying course at UNSW, and then a part-time MSc, entitled “Microbiological Problems in Prune Preservation”. This cemented his interest in the world of fungi. He subsequently carried out a full time PhD at the University of California, Davis, studying yeast taxonomy, and a postdoctoral year at the USDA Northern Regional Research Center, Peoria, Illinois (NRRL), under Dr Clifford Hesseltine. This is where he became really fascinated in *Penicillium* taxonomy and the occurrence of mycotoxins in food chains. After this period he returned to CSIRO.

He established the FRR fungal culture collection at CSIRO, now a major collection specialising in fungi of importance in food and industrial applications. This collection became the basis for his text book “The Genus *Penicillium* and its teleomorphic States *Eupenicillium* and *Talaromyces*” (Academic Press, 1980). Later the 1st edition of “Fungi and Food Spoilage” (Academic Press, 1985) co-authored with his long-time colleague, Dr Ailsa Hocking, who joined him in CSIRO in 1974. Now the 4th Edition of this major text book is about to be published. This is used world-wide to educate graduate and post-graduate students and scientists about the importance of spoilage moulds, mycotoxins and their control. This research area has become even more important in the context of climate change and the food security and safety agendas.

In the 1970s to 1990s, Drs Pitt and Hocking carried out pioneering work on methods for isolating and identifying food-borne fungi, and on their physiology and ecology, with emphasis on species able to grow under extreme water stress. i.e., those that caused spoilage of dried, partially dried, or inadequately dried foods. Extensive studies were also carried out for the Australian Centre for International Agricultural Research (ACIAR) on the fungi occurring on dried Indonesian fish, and the fungi and mycotoxins that occur in all major Southeast Asian food commodities. He was involved in the establishment of many International Commissions including (1) International Commission on Microbiological Specifications for Foods (ICMSF), (2) International Commission for Food Mycology (ICFM), International Commission for *Penicillium* and *Aspergillus* (ICPA), WHO Food-borne Disease Burden Epidemiology Reference Group (FERG) and Joint FAO/WHO Expert Committee on Food Additives and Contaminants.

The work on food mycology was complimented with mycotoxin research and the possible methods for minimising aflatoxins in peanuts. He addressed the serious problem with aflatoxins in Australian peanuts, and was able to use the ecological approaches to develop biocontrol by competitive exclusion of toxigenic strains of the producer species, *Aspergillus flavus* and *A. parasiticus*, with non-toxicogenic strains. This approach has become of world-wide interest with several commercial products now available. He believed that biocontrol when combined with other approaches would be beneficial in reducing the exposure to such mycotoxins in both food and feed durable chains.

He completed 65 years of service to CSIRO in March, 2019. He authored, co-authored, edited or co-edited 20 books, and published 250+ research papers and book chapters, 70 of them published since he officially retired in 2002. He was awarded many Honours during his life.

LONG-READ GENOME SEQUENCING OF BREAD WHEAT FACILITATES DISEASE RESISTANCE GENE CLONING

A paper by Naveenkumar Athiyannan *et al.* titled “Long-read genome sequencing of bread wheat facilitates disease resistance gene cloning” was published on 14 March 2022 by *Nature Genetics* (vol. 54, pages 227–231). The abstract is as follows:-

The cloning of agronomically important genes from large, complex crop genomes remains challenging. Here we generate a 14.7 gigabase chromosome-scale assembly of the South African bread wheat (*Triticum aestivum*) cultivar Karioga by combining high-fidelity long reads, optical mapping and chromosome conformation capture. The resulting assembly is an order of magnitude more contiguous than previous wheat assemblies. Karioga shows durable resistance

to the devastating fungal stripe rust disease¹. We identified the race-specific disease resistance gene *Yr27*, which encodes an intracellular immune receptor, to be a major contributor to this resistance. *Yr27* is allelic to the leaf rust resistance gene *Lr13*; the *Yr27* and *Lr13* proteins show 97% sequence identity. Our results demonstrate the feasibility of generating chromosome-scale wheat assemblies to clone genes, and exemplify that highly similar alleles of a single-copy gene can confer resistance to different pathogens, which might provide a basis for engineering *Yr27* alleles with multiple recognition specificities in the future.

[Read paper.](#)

MAY 12TH AS THE INTERNATIONAL DAY OF PLANT HEALTH

NAPPO SECRETARIAT, 30 MARCH 2022

The United Nations General Assembly recently adopted the resolution to proclaim 12th May as the International Day of Plant Health (IDPH). This important legacy of the International Year of Plant Health 2020 compels the North American Plant Protection Organization (NAPPO) and International Plant Protection Convention (IPPC) communities to continue their efforts towards increasing public awareness of plant health as well as fostering the implementation of International and Regional Standards for Phytosanitary Measures to protect plant resources and facilitate safe trade.

We look forward to celebrating this important day with everyone.

A NEW NOTEWORTHY PAPER IN CLIMATE ON KIWIFRUIT BACTERIAL CANKER DISEASE MODELLING

ARIENA VAN BRUGGEN

The potential global climate suitability of Kiwifruit bacterial canker disease (*Pseudomonas syringae* pv. *actinidiae* (Psa)) using three modelling approaches: CLIMEX, Maxent and Multi-model Framework

by Hossein A. Narouei-Khandan, Susan P. Worner, Suvi L.H. Villjanen, Ariena H.C van Bruggen, Giorgio M. Balestra, and Eirian E. Jones (in New Zealand, USA and Italy) III

Outbreaks of kiwifruit bacterial canker (*Pseudomonas syringae* pv. *actinidiae* or Psa) have caused huge economic losses to two major kiwifruit producing countries, Italy and New Zealand. The disease was also found in some areas in East and Southeast Asia and Europe, but not yet in North America, most of South America and Africa. The potential distribution of Psa has been assessed in four previous studies using Species Distribution Modeling approaches, but these models mostly focused on the potential distribution of Psa at a local or regional scale, relying on a single modeling approach or one type of models such as correlative models. In a recent new study, however, potential risk areas of Psa were evaluated on a global scale using three modelling methods (MaxEnt, CLIMEX and a Multi-Model Framework, including Support Vector Machines or SVM). The model results were combined into a consensus model to identify potential hotspots worldwide. The consensus model had the highest sensitivity and lowest false negative rate.

All models agreed with respect to the climate suitability of areas where Psa is currently present and identified novel areas where Psa has not established yet, such as the USA, Iran, Northwestern Europe and South Africa (where kiwifruit plantations have been established recently). The SVM model predicted several areas worldwide to be more suitable compared to MaxEnt and CLIMEX. Annual mean temperature and annual precipitation contributed most to the prediction. The probability of Psa establishment was greatest between 5°C and 20°C. Although precipitation contributes to Psa spread, excessive rain (>1200 mm/y) constrains Psa establishment. These results are particularly valuable indicators for countries where Psa is currently reported from limited localities only and for countries in the Americas and Africa where Psa has not been reported yet

[Read paper.](#)

THE HARDY WILD GRASS THAT COULD SAVE OUR BREAD

JOHN INNES CENTRE PRESS RELEASE, 25 MARCH 2022

An obscure species of wild grass contains “blockbuster” disease resistance that can be cross bred into wheat to give immunity against one of the deadliest crop pathogens. A collaborative international team of researchers identified the stem rust resistance gene from the wild goat grass species *Aegilops sharonensis*. The research team led by the John Innes Centre, The Sainsbury Laboratory, and the University of Minnesota used bioinformatic advances to develop the first accurate genome map of *Aegilops sharonensis*. The genetic potential of this hardy relative of wheat found in Israel and southern Lebanon has been largely unexplored.

Using the genetic map and a search tool technique called Mutant Hunter the team scanned the genome for mutations looking for ones which were different in plants that were immune to stem rust, a disease which has troubled farmers for millennia. This search identified a candidate gene, which the researchers thought was responsible for protecting plants. Using molecular tweezers, they isolated the gene of interest and transferred it into a susceptible plant, where it conferred strong protection against all tested strains of the wheat stem rust fungus, *Puccinia graminis* f. sp. *tritici*.

Dr Brande Wulff, a wheat researcher at King Abdullah University of Science and Technology (KAUST), formerly a group leader at the John Innes Centre and one of the authors of the study said: “We now have this blockbuster gene that confers amazing immunity. If I were stem rust, I would be shaking in my spore.”

“It has been an arduous research journey lasting many years, but we have now found this gene that confers broad-spectrum resistance. We have yet to come across an isolate of the pathogen which can overcome the gene,” added John Innes Centre researcher Dr Guotai Yu, first author of the study.

In this study which appears in [*Nature Communications*](#), experiments showed that the Sr62 gene encodes a molecule called a tandem protein kinase. Ongoing studies are looking at how this gene functions so researchers can biologically engineer the mechanism to be more efficient.

The research team plans to employ the new gene as part of a stack of genes – bred into commonly used wheat varieties – using genetic modification technology. They predict more resistance genes will be identified in and cloned from populations of *Aegilops sharonensis* and other wild grasses using their methods of gene discovery and deployment.

Aegilops sharonensis is known to possess many traits of agricultural importance such as resistance to major diseases including rusts. However, its long generation time, tough seed coat, and difficulties of crossing it with wheat cultivars have made it less tractable than other species of wild grasses being mined for useful genetic traits.

This makes the findings in this study even more valuable, explains Professor Brian Steffenson from the University of Minnesota and co-author of the study: “Given the great difficulties in crossing *Aegilops sharonensis* to wheat, we were fairly certain that the rust resistance genes discovered in the wild species would be novel.” *Aegilops sharonensis* has a very narrow habitat range along the coastal plain of the Mediterranean Sea. Professor Steffenson adds: “It is therefore timely and important that efforts were made to collect and characterize accessions of this species before they are lost to urbanisation. It is our hope that the resistance gene cloned in this research will, when combined with other genes, confer long-lasting resistance in wheat varieties, thereby reducing the threat of the stem rust disease”

The study highlights recent developments in Latin America where GM (Genetically Modified) wheat engineered for drought tolerance has been approved – potentially paving the way for GM traits to be bred into wheat more widely in the face of the climate crisis.

The search for resistance against stem rust has become more urgent as epidemics of the disease are becoming more frequent and climate change threatens to further increase its spread.

“Pathogens like stem rust, already reduce the yield of wheat by 21 per cent. Not only is the grain itself lost or damaged by the pathogen, but also the energy that goes into production – an equivalent of 420 billion kilowatts – enough to power 300 million homes in the developing world is wasted. If we can intervene with genetics, by recruiting the resistance found in this wild-wispy looking grass then that would be an amazing contribution to agriculture and climate change,” said Dr Wulff.

INDIAN GOVERNMENT HAS EXEMPTED SDN1 AND SDN2 TYPE OF EDITED PLANTS

EXCERPT FROM ARTICLE BY ZIA HAQ, [HINDUSTAN TIMES](#), 31 MARCH 2022

The changes, approved by the Union Ministry of Environment and Forest on 30th March 2022, follow recommendations from the department of biotechnology and the department of agriculture, research and education. “SDN1 and SDN2 genome-edited products free from exogenous introduced DNA be exempted from biosafety assessment in pursuance of rule 20 of the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically engineered Organisms or Cells Rules 1989,” the new rule, issued through an office memorandum, states.

One scientist working with GM technologies said the changes will exempt two categories of genome-edited products — in which genes are tweaked but not inserted from another organism — from being treated as transgenic products.

“SDN1 and SDN2 types of genome editing are currently being used in Indian labs for breeding new crops, and imparting traits including resistance to diseases and drought,” said Bhagirath Choudhary of the South Asia Biotechnology Centre, which advocates GM technologies.



CURRENT VACANCIES

ASSISTANT PROFESSOR IN PLANT-INSECT-MICROBE INTERACTIONS

Applicants are invited for a tenure-track faculty position at the rank of Assistant Professor in the broad area of interactions between and among insects, microbes and/or plants. Candidates are sought whose research will lead to a better understanding of the nature of these interactions and how they impact natural, urban or agricultural ecosystems. The position is 60% research, 30% teaching and 10% service and will be in the merging **Departments of Plant Pathology & Microbiology and Entomology at Iowa State University**. For more information and applications, visit the link https://isu.wd1.myworkdayjobs.com/IowaStateJobs/job/Ames-IA/Assistant-Professor-in-Insect-Microbe-Plant-Interactions_R7638. Review of applicants will begin on **4 April 2022**.

The **Department of Plant Pathology at the University of Nebraska-Lincoln** is seeking a Molecular Plant-Microbial Interactions Pathologist at the rank of Assistant or Associate Professor. This 9-month (academic year), tenure-leading appointment will lead an integrated research and teaching program that meets the needs of agricultural producers in Nebraska, the US, and globally, and connects with regional and national crop pathology programs and colleagues with an emphasis on understanding molecular microbial-host plant interactions, where “microbe” indicates bacterial, fungal, or oomycete pathogen(s). The apportionment for this position is 80% research and 20% teaching and is located in Lincoln, Nebraska. To ensure consideration, please submit all application materials before the review date of **15 April 2022**. Further details about the position and how to apply are available in the [PDF](#).

ACKNOWLEDGEMENTS

Thanks to Grahame Jackson, Greg Johnson, and Jan Leach for contributions.

COMING EVENTS

IOBC-WPRS PR-IR 2022: Priming the Future for Healthy Plants

4 April - 7 April, 2022

Sheffield, UK

Website: www.sheffield.ac.uk/sustainable-food/home/events/priming-future-healthy-plants-event-home

16th Congress of the Mediterranean Phytopathological Union

4 April - 8 April, 2022

Limassol, Cyprus

Website: cyprusconferences.org/mpu2022

BSPP Plant Health Club: Creating publication quality images

26 April 2022, 12:30 pm - 1:30 pm BST

Free, online networking meeting for early career plant pathologists

Website: www.bspp.org.uk/conferences/bspp-plant-health-club-creating-publication-quality-microscopy-images/

7th International Congress of Nematology

1 May - 6 May, 2022

Antibes Juan-les-Pins, France

Website: www.alphavisa.com/icn/2020/index.php

BSPP Plant Health Club: Biosecurity at RHS Events

10 May 2022, 12:30 pm - 1:30 pm BST

Free, online networking meeting for early career plant pathologists

Website: www.bspp.org.uk/conferences/bspp-plant-health-club-biosecurity-at-rhs-events/

International Symposium on Cereal Leaf Blights

11 May - 13 May, 2022

Gammarth, Tunisia

Website: www.isclb2022.com/

New CONNECTIONS: plant pathology, entomology and the road ahead

28 June - 30 June, 2022

ONLINE and FREE

Website: www.connectedvirus.net/new-connections-conference/

Nanotechnology in Agriculture

30 June - 1 July, 2022

University of Tuscia, Viterbo, Italy

Contact: nanoagrischool22@unitus.it

Website: www.unitus.it/it/dipartimento/dafne/summer-school/articolo/nanotechnology-in-agriculture

4th International *Erwinia* Workshop

2 July - 3 July, 2022

Assisi, Italy

Website: www.icppb2020.com

14th International Conference on Plant Pathogenic Bacteria

3 July - 8 July, 2022

Assisi, Italy

Website: www.icppb2020.com

12th International Workshop on Grapevine Trunk Diseases (ICGTD12)

11 July - 15 July, 2022

Mikulov, Czech Republic

Website: ucanr.edu/sites/ICGTD/Workshops_559/

11th Australasian Soilborne Diseases Symposium

2 August - 5 August, 2022

Cairns, Queensland, Australia

Website: asds2022.w.yrd.currinda.com

APS Plant Health 2022

6 August - 10 August, 2022

Pittsburgh, Pennsylvania, USA

Website: www.apsnet.org/meetings/annual/PH2022

Annual Oomycete Molecular Genetics Meeting

22 August - 25 August, 2022

Mendel University, Brno, Czech Republic

Website: omgn.org/

16th International Cereal Rusts and Powdery Mildews Conference

31 August - 2 September, 2022

University of Cambridge, UK

Website: www.niab.com/international-cereal-rusts-and-powdery-mildews-conference-2022

BSPP2022 – Microbial lifestyles: from symbionts to pathogens

5 September - 7 September, 2022

Newcastle University, UK

Website: www.bspp.org.uk/conferences/bspp2022/

International Phytobiomes Conference 2022

13 September - 15 September, 2022

Denver, Colorado, USA

Website: phytobiomesconference.org

1st International Plant Health Conference

21 September - 23 September, 2022

London, UK

Website: www.ippc.int/en/news/press-release-the-first-international-plant-health-conference/

8th International Cereal Nematodes Symposium

26 September - 29 September, 2022

Abant, Turkey

Website: www.cimmyt.org/events/8th-international-cereal-nematodes-symposium-icns/

13th Arab Congress of Plant Protection

16 October - 21 October, 2022

Le Royal Hotel, Hammamat, Tunisia

Contact: Dr. Asma Jajar, Chairperson of Organising Committee info@acpp-aspp.com

Website: acpp-aspp.com 13th International Congress on Plant Biotechnology and Agriculture

12 June - 16 June, 2023

Cayo Guillermo, Cuba

Website: bioveg.bioplantas.cu

12th International Congress of Plant Pathology (ICPP2023)

20 August - 25 August, 2023

Lyon, France

Website: www.icpp2023.org

XX International Plant Protection Congress

1 July - 5 July, 2024

Athens, Greece

Website: www.ippcathens2024.gr

9th ISHS International Postharvest Symposium

11 November – 15 November, 2024

Rotorua, New Zealand

Website: scienceevents.co.nz/postharvest2024





ICPP
2023

ONE HEALTH
for all plants,
crops and trees



20-25 August, France



www.icpp2023.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@isppweb.org

**SUBSCRIBE
OUR NEWSLETTER**

