



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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INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

[WWW.ISPPWEB.ORG](http://WWW.ISPPWEB.ORG)

# INTERNATIONAL CONGRESS OF PLANT PATHOLOGY ICPP2023

MATHIAS CHOQUER AND NATHALIE POUSSEREAU, CO-CHAIRS OF ICPP2023

## ICPP2023

Over 1600 abstracts have been submitted to ICPP2023!

Notification to authors : April 14, 2023

Early bird rate ending : April 15, 2023

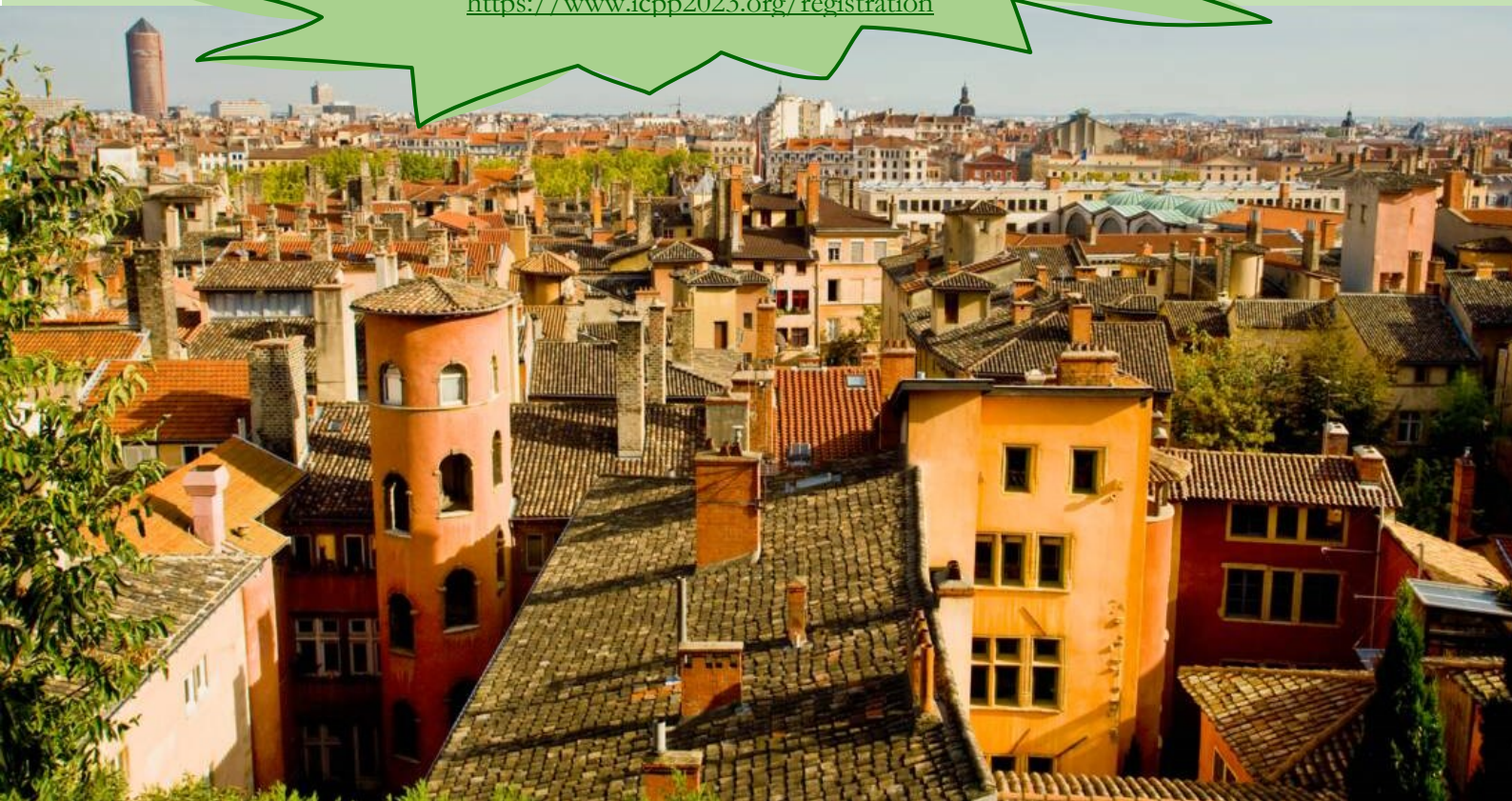
## SATELLITE EVENTS

Abstract submission deadline extended until March 15, 2023

Notification to authors : April 21, 2023

**REGISTER NOW TO BENEFIT FROM  
THE EARLY BIRD RATE!**

<https://www.icpp2023.org/registration>



**Travel through time in the "capital of Gaul »:** For those who are passionate about history, culture and heritage, Lyon is a privileged destination. With its 2000 years of history, Lyon is a city with a strong cultural heritage. From the Antiquity theaters to the Old Lyon of the Middle Ages, through the Renaissance and the modern era, there is something for everyone in France's third largest city, whose historic urban site has been a UNESCO World Heritage Site since 1998.



## ICPP2023 KEYNOTE SESSION ON: INVASIVE AND EMERGING PLANT DISEASES

**Tuesday 22 August 2023**  
**8:30 - 10:00 am**  
**Amphitheater 3000**  
**Lyon Convention Centre**



Chair: Nico Horn  
EPPO, european and mediterranean plant  
protection organization, France



Chair: Philippe Reignault  
ANSES - French agency for food environmental  
& occupational health & safety, France



Speaker: Maria Lodovica Gullino  
University of Torino, Italy  
Title: Emerging diseases in the vegetable  
sector: challenges and perspectives (with  
Giovanna Gilardi and Massimo Pugliese as  
co-authors)



Speaker: Hernán A. Burbano  
University College London, UK  
Title: Pandemic clonal lineages of the  
blast fungus



Speaker: Roel Potting  
Nederlandse Voedsel- en Warenautoriteit  
(NVWA), The Netherlands  
Title: Risk assessment and management of pests  
and diseases in the EU: past and present

The number of threats to plant health and the impact of plant diseases is currently increasing for all types of ecosystems: agroecosystems, forests, natural and even urban environments. These threats encompass all taxa of pests and pathogens, from viroids to nematodes. Insects can also contribute to new epidemics of plant diseases as they may be vectors of emerging diseases. The following factors greatly contribute to the increase of emerging plant diseases: greater volume and diversity of plant products traded and moved globally, climate change, and to a lesser extent new agricultural practices. Emerging diseases may result in outbreaks either in regions where pathogens were not present so far or the incidence of pathogens may increase unexpectedly when already present in the area. In both cases, these emerging pathogens may cause devastating effects. This session will allow the participants to share up to date information and views on emerging pathogens both at the scientific and regulatory level. The most recent research regarding detection, identification and monitoring of emerging pathogens, as well as epidemiological features leading to their establishment and spread will be addressed. Information and literature scanning as well as risk assessment are key issues in preparing strategies for potential outbreaks. Our ability to manage outbreaks of emerging diseases is determined by efficient epidemiological surveillance programmes, and contingency plans to be able to act early, quickly and effectively. It is therefore important to monitor changes in diseases status in other regions and monitor changes in pathogen populations and disease appearance within a region. All these actions (research, risk assessment, diagnostics and surveillance) have to be performed in various regulatory contexts. Overall, the aim is to reduce plant health risks by preventing outbreaks, and responding rapidly on appearance of emerging diseases, and thereby protecting the environment and ensuring food security.

## **ICPP2023 KEYNOTE SESSION ON: A GLOBAL PLANT HEALTH ASSESSMENT (GPHA) OF THE STATE OF PLANT HEALTH AND ITS IMPACT ON ECOSYSTEM SERVICES**

**Tuesday 22 August 2023**  
**4:30 - 6:00 pm**  
**Amphitheater 3000**  
**Lyon Convention Centre**



Chair: Neil McRoberts  
UC Davis, USA



Chair: Pascal Frey  
INRAe, national research institute for  
Agriculture, Food and the Environment, France



Speaker: Federica Bové  
Università Cattolica del Sacro Cuore, Italy  
Title: State and evolution of plant health globally  
across Plant Systems and Ecoregions



Speaker: Sonam Sah  
GB Pant University of Agriculture &  
Technology, India  
Title: Impacts of plant health on services  
rendered by Plant Systems in Ecoregions



Speaker: Manjari Singh  
GB Pant University of Agriculture &  
Technology, India  
Title: Synthesis and implications of the  
findings from the GPHA

The session presents results from ISPP's Global Plant Health Assessment (GPHA), initiated with the International Year of Plant Health. The GPHA involves some 100 volunteers; it addresses Plant Systems from agricultural to natural systems: cereals (rice, wheat, maize), roots, tubers and bananas, peri-urban horticulture and household gardens, forests (managed softwood, oaks, eucalypts, and amazon forests), and urban forests. Plant Systems are considered in different world ecoregions: Southeast, South, and East Asia, Europe, Sub-Saharan Africa, North, Central, and South America, and Australia. A total of 26 systems (i.e., Plant System x Ecoregion) have been assessed with respect to (1) the state and evolution of plant health, and (2) the state and evolution of ecosystem services rendered by the Plant Systems, as affected by disease. Three broad categories of services are considered; Provisioning (food, fibre, material), Regulating (climate regulation, pollution reduction, and protection of biodiversity, soils, and water), and Cultural (spiritual, cultural, re-creational). The status of these systems was assessed on a 5-point scale from "bad" to "excellent", while the evolution of their status was assessed according to three categories: "improving", "stable", or "declining". All assessments are science- and publication-based. The first talk of the session will report GPHA results of the assessments from the standpoints of plant health status and evolution. The second talk will report GPHA results from the standpoint of impacts of disease on ecosystem services. The third talk will discuss outcomes from the findings of the GPHA with respect to plant disease management, food security, biodiversity, climate change, pathogen invasions, plant system resilience to diseases, and some initial thoughts for recommendations. This third talk especially highlights cross-cutting issues, challenging questions, and future research needs and directions generated by the GPHA. These questions will be further discussed in the Roundtable Session which will follow this Keynote Session.

## **ICPP2023 KEYNOTE SESSION ON: CURRENT TOPICS IN MOLECULAR PLANT-MICROBE INTERACTIONS**

**Wednesday 23 August 2023**  
**8:30 - 10:00 am**  
**Amphitheater 3000**  
**Lyon Convention Centre**



Chair: Jan E. Leach  
Colorado State University, USA



Chair: Sophien Kamoun  
The Sainsbury Laboratory, UK



Speaker: Kenichi Tsuda  
Huazhong Agricultural University (China)  
Title: Regulation of bacterial growth and behavior by plant immunity



Speaker: Saskia Hogenhout  
John Innes centre, UK  
Title: Factors that influence the distribution of vector-borne parasites.



Speaker: Sheng Yang He  
Duke University, USA  
Title: Impact of climate on plant-pathogen/microbiome interactions

Plants are impacted by various factors, including other organisms of diverse taxa and environmental factors. These interactions can have a significant effect on plant health and productivity. In recent years, there has been an increasing focus on understanding these complex interactions in order to identify ways to control parasitic interactions and promote mutualistic ones. This session will examine three types of interactions with plants, including biotic interactions, which involve microbes and their vectors, and abiotic interactions, which involve factors such as temperature, moisture, and nutrients. The session will also explore the ways in which plant responses can impact pathogen behavior and the potential consequences of these interactions on plant health.



## ICPP2023 KEYNOTE SESSION ON: NEW DEVELOPMENTS IN PLANT DISEASE MANAGEMENT

Wednesday 23 August 2023

2:00 - 3:30 pm

Amphitheater 3000

Lyon Convention Centre



Chair: Jochen Kleemann  
Bayer AG, Germany



Chair: Mathews Paret  
University of Florida, USA



Speaker: David Hodson  
CIMMYT - International Maize and Wheat  
Improvement Center, Mexico  
Title: Disease early warning and advisory  
systems – the case of wheat rusts



Speaker: Lava Kumar  
IITA- International Institute of  
Tropical Agriculture, Nigeria  
Title: Advances in plant virus disease  
management in sub-Saharan Africa –  
the case of bunch top disease



Speaker: Helen Brabham  
2Blades Foundation, UK  
Title: NLRseek™: High-throughput  
discovery pipeline for functional  
resistance genes

This keynote session aims to showcase, and stimulate discussion on, recent technological advances for crop disease management as part of integrated approaches and sustainable solutions for growers, with a key objective to optimize productivity from the finite amount of land available to agriculture. We would like to showcase recent advances in the area of crop disease management, such as precision farming technologies like remote sensing and (early) pathogen diagnosis, vector control, geographic information systems (GIS), and machine learning-driven decision support systems, as well as the development of more effective disease-resistant crop varieties through genetic engineering and selection.



12<sup>th</sup> INTERNATIONAL CONGRESS OF PLANT PATHOLOGY

The International Society for Plant Pathology & the French Phytopathological Society

20-25 August, France



## INTERESTED IN GETTING INDIGENOUS RIGHTS RIGHT?

HANAREIA EHAU-TAUMAUNU, NARI WILLIAMS AND ROBIN MACDIARMID

Many of us may have the desire to do the right thing for and with Indigenous peoples and biology but may be unsure of how this is best achieved. We are holding a Round Table session at ICPP 2023 in Lyon to discuss the underpinning issues and opportunities when engaging with and impacting on Indigenous/First nations' people and their rights. The purpose of the Round Table is to initiate the discussion and establish a network of interested people and form a Subject Matter Committee within ISPP that can develop guidelines and resources for both Indigenous/First Nations' people and plant pathologists.

The aims of the Round Table discussion:

1. To understand Indigenous/First Nations' perspective regarding research e.g., when engaging with communities, native organisms, cultural/sacred sites, and/or relevant data.
2. To socialise the guidelines adopted by the Australasian Plant Pathology Society that include Indigenous self-determination; consent and ethics; cultural competence and safety; equity and benefit-sharing; and responsibility and accountability.

The Round Table discussion follows on from the presentation 'The intersection of social media and indigenous rights in plant pathology' by Dr Hanareia Ehou-Taumaunu, an emerging Māori plant pathologist, within the 'APP-titude for Social Media in Plant Disease Research' session at ICPP2023. The facilitated Round Table discussion will be a safe environment to share views, especially with respect to minority voices. Within a panel we will provide opportunities for several presentations and inputs from Indigenous plant pathology researchers from across the world to set the scene for a facilitated round table discussion about indigenous rights, participation and leadership in plant pathology. By example, we will share the experience from the Australasian Plant Pathology Society that amended its constitution and provided guidelines to assist researchers ([Guiding research principles for researchers when engaging with Indigenous Peoples.pdf \(appsnet.org\)](#)). To date panellist include Indigenous/First Nations' researchers Dr Hanareia Ehou-Taumaunu and Mr Alby Marsh from Aotearoa New Zealand.

We call for interested Indigenous plant pathology researchers from across the world to join the Round Table as a panellist by emailing [Hanareia.Ehou-Taumaunu@plantandfood.co.nz](mailto:Hanareia.Ehou-Taumaunu@plantandfood.co.nz).

We warmly invite you to attend the 'APP-titude for Social Media in Plant Disease Research' and the 'Getting rights right: A round table exploration of Indigenous rights and plant pathology' sessions at ICPP 2023.

# ELEVENTH UPDATE ON ISPP RESILIENCE BURSARY FOR PLANT PATHOLOGISTS

ALEX SHEVCHENKO AND GREG JOHNSON



**Protected from bombing 2023 - The monument to Taras Shevchenko across from the Taras Shevchenko National University of Kyiv Red Building. Shevchenko was a Ukrainian poet, writer, artist, public and political figure, as well as folklorist and ethnographer (photo Alex Shevchenko).**

As we finalise this update it is one year since the 2022 invasion of Ukraine by Russia, and there seems to be no immediate end in sight for the conflict. In the last 9 months ISPP Resilience Bursaries have supported 10 Ukraine scientists who have taken temporary refuge in Poland. During February the ISPP agreed that Bursary funds could also be used to support short term stays by Ukraine scientists in Poland and other places, to enable exchanges without jeopardising the continuity of their teaching and research responsibilities in Ukraine Institutions. Ongoing support for the ISPP Resilience Bursary will be critical to enable an adequate response Please consider donating ([donate here](#)). Enquiries can be directed to [resilience@isppweb.org](mailto:resilience@isppweb.org).



On 7 February 2023, a severe earthquake struck parts of Türkiye and Syria, and some of the plant pathologists located there lost their lives and or their homes. As this issue goes to press, we are exploring options to support our colleagues in these regions.



**The Red Building, Taras Shevchenko National University of Kyiv (photo Alex Shevchenko).**

This month we bring a message from one of our colleagues, Alex Shevchenko, Senior Research Fellow, in the Virology Department, ESC 'Institute of Biology and Medicine' of Taras Shevchenko National University of Kyiv. Alex has been our main point of contact with the Ukraine plant pathology community since the conflict began and he and his family remain in Kyiv. He is involved in studying emerging plant viral diseases and the risks they pose in Ukraine, while the broader spectrum of department activities also includes other plant virology and bacteriophage research as well.

## ALEX SHEVCHENKO – A MESSAGE FROM UKRAINE



Alex Shevchenko, with Prof. Irena Budzanivska, Head of the Virology Department, ESC 'Institute of Biology and Medicine', Taras Shevchenko National University of Kyiv (Photo Virology Department).

Dear Friends

A year has passed since the most recent invasion of Ukraine by Russia commenced. It was not an easy year for all of us. Neither was it peaceful, nor enjoyable nor safe. Still, as always, as Spring approaches we are full of hope for a better life in the coming year. Let the darkness evaporate under the light, and the good overcome the evil! I wish you all the best in 2023 – may it eventually bring some good news, confidence for the future, and safety and prosperity to our homes!

By this time, many different bodies have provided and continue providing valuable financial aid to Ukraine and Ukrainian professionals to support refugees seeking safe place to work. In this context, Ukrainian plant pathologists would like to express their gratitude for ensuring proper work possibilities allowing to pursue their professional career in such circumstances.

Of course, we deeply appreciate the engagement and partnership from the ISPP and the Polish Phytopathological Society, as well as the Society and individual donors to the ISPP Resilience Bursary for Plant Pathologists Fund. This has provided much needed and timely support for our colleagues and their families who have taken refuge in Poland and will build long term connections for future collaboration and deeper integration of Ukrainian scientists into the EU research environment.

At the 12th International Congress of Plant Pathology (ICPP2023) in Lyon there will be a special concurrent session *Impact of war and conflicts in plant pathology research and food safety of countries*. The session will include presentations on the impacts of war on Ukraine as well as papers covering other conflicts. Please join us for this special session!

Good Wishes from Ukraine to you, your families, and friends!

## **X INTERNATIONAL CONFERENCE “BIORESOURCES AND VIRUSES” (10TH ICBV), KYIV, UKRAINE, 11-13 SEPTEMBER 2023**



We are happy to confirm that no matter what the X International Conference “Bioresources and Viruses” (10th ICBV) will be held in Kyiv, 11-13 September 2023. This triennial conference was conceived in 1994. “Bioresources and Viruses” is a prominent conference hosted in Eastern Europe covering actual problems of medical, veterinary and plant virology, virus ecology, evolution, and biosafety. The conference is widely known abroad and regularly attracts scientists from Western and Eastern Europe, Great Britain, USA, Asia and Africa. This conference remains a solid platform for students and PhD students to present the outcomes of their research.

Our brand-new conference website is still being developed! <https://icbv.knu.ua/> This will be the site for the updates, registration, abstract submission, etc., so please follow it and mark the dates in your calendar!

On behalf of the Organizing Committee, I am inviting you to come and take part – we will be happy to see you (or connect virtually) in 2023! If you would like to receive future updates on the Conference, please email us at [vir.biomed@knu.ua](mailto:vir.biomed@knu.ua) with the Message Subject 10th ICBV (Plant Virology).



# INTERNATIONAL SUMMER SCHOOL OF PLANT DISEASE EPIDEMIOLOGY HELD AT THE UNIVERSITY OF PRETORIA, SOUTH AFRICA, 16-20 JANUARY 2023

LAETITIA WILLOCQUET, ON BEHALF OF THE ORGANISERS AND INSTRUCTORS OF  
ISSPDE-2023

World's essential agricultural systems are facing renewed and major sustainability challenges. While plant disease epidemiology can provide critical contributions to ensure food security and food safety, this topic is not often taught in graduate or post-graduate curricula. This educational gap results in a dramatic shortage of trained scientists in botanical epidemiology. International Summer Schools in Plant Disease Epidemiology (ISSPDE) have been organised in order to address this critical need. The ISSPDE aim to offer exposure to concepts and methods in plant disease epidemiology, and to their implementation in the design of sustainable disease management strategies.

The second ISSPDE was held at the University of Pretoria on 16-20 January 2023. The Summer School was hosted by the Department of Plant and Soil Sciences, Plant Pathology Division, where it was organised by Lise Korsten, David Linvingstone Nsibo, and Thabang Msimango.

The ISSPDE-2023 was attended by 40 participants from South Africa and other countries from sub-Saharan Africa. Participants were MSc and PhD students as well as Post-Docs and faculty from U. Pretoria.

The ISSPDE-2023 was organised in a hybrid form, with instructors physically present at U. Pretoria, and instructors interacting remotely with participants via video conferences.

Instructors of ISSPDE-2023 are plant disease epidemiologists with experience in research and education in various parts of the world. Instructors present at U. Pretoria were: Serge Savary (UC Davis, USA; GBPUAT, India), Manjari Singh (GBPUAT, India), and Laetitia Willocquet (INRAE, France; GBPUAT, India). Instructors with remote communication were: Paul Esker (Penn State U., USA), Neil McRoberts (UC Davis, USA), and Vittorio Rossi (Università Cattolica del Sacro Cuore, Italy).

The program of ISSPDE-2023 included the following topics:

- Importance of plant diseases and of plant disease epidemiology
- Pathogen detection, disease measurements and sampling
- Methodology of epidemiological research
- Introduction to epidemiology and R
- Temporal disease progress
- Spatial disease distribution and spread
- Use of weather data for agrometeorology and prediction of plant disease epidemics
- Yield losses assessment and modelling
- Epidemiology and host plant resistance
- Combining plant disease, crop and fungicide models for disease management
- Decision making

Further details can be found on the [ISSPDE website](#).

In particular, the PDFs of the ISSPDE classes can be freely downloaded on the ISSPDE website by the interested reader.



## CALL FOR NOMINATIONS FOR ISPP FELLOWS 2023

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### JAN LEACH, ISPP PRESIDENT

At the 2023 International Congress of Plant Pathology (ICPP) in Lyon, France, the International Society for Plant Pathology (ISPP) intends to recognise the outstanding contributions of individuals to plant pathology, the aims of the ISPP, or both as Fellows of the ISPP. A call for nominations is now open. Nominations will close on 15<sup>th</sup> May 2023. Nominations should be sent with name and contact details of the nominee and the nominator. The nominator should state the rationale for the nomination by outlining in 500-700 words (Helvetica 9 point single-spaced text) how the individual nominated has made an outstanding contribution to plant pathology, the aims of ISPP, or both. A more detailed CV may also be sent with the nomination. Individuals cannot nominate themselves.

Nominations (and enquiries) should be sent to the ISPP President, Dr Jan Leach ([Jan.Leach@colostate.edu](mailto:Jan.Leach@colostate.edu)) with the subject heading "ISPP Fellow Nomination". Nominations and deliberations of the Fellow's Selection panel will remain confidential.

ISPP Fellows elected by Council:

- 1988 in Kyoto:- Arthur Kelman dec.; RKS Wood dec.
- 1998 in Edinburgh:- Johannes Dekker dec.; Chiu Wei Fan dec.
- 2008 in Torino:- Chuji Hiruki dec.; Wenhua Tang; Peter Scott; Brian Deverall dec.; James Cook; Charles Delp.
- 2013 in Beijing:- Richard Falloon; Richard Strange dec.; Yaacov Katan.
- 2018 in Boston:- Gloria Abad, Thomas Evans, M. Lodovica Gullino, Michel Heath, You Liang Peng, Dov Prusky, Mauritz Ramstedt, Paul Teng, Shinji Tsuyumu, Peter Williamson.

## ISPP COUNCIL 2023-2028

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ISPP Member Societies and Nominating Bodies are reminded of the need to review and to submit to the Council the name(s) of their appointee(s) for the ISPP Council 2023-2028.

Societies can send the names and email address of their Councillors to the ISPP Business Manager ([business.manager@isppweb.org](mailto:business.manager@isppweb.org) always copying to [andrea.masino@unito.it](mailto:andrea.masino@unito.it))

During March the ISPP will be conducting an email ballot of Councillors about changes to the ISPP Statutes and Rules of Procedure.

The ISPP Council meeting at ICPP2023 in Lyon France will be convened on Tuesday 22 August 2023. The draft Agenda for the Council Meeting will be posted in April.

## REMINDER – PLEASE COMPLETE OUR SURVEY ON PLANT PATHOLOGY IN THE SOCIAL MEDIA AGE

GREG JOHNSON AND ANDREA MASINO

So far we have received 220 + responses. Help us to get over 1000 by urging your friends and colleagues to complete the survey!

Focussing on social media offered by plant pathology societies and plant pathologists, a session at [ICPP2023](#) - *APP-titude for Social Media in Plant Disease Research* will consider the use and engagement with social media by plant pathologists and considers how to improve social media relevance.

The survey will help us gain insights for the plant pathology societies and plant pathologists who use, or are considering use of, social media so they might reach their audiences more effectively.

At ICPP2023 and in our report via the ISPP newsletter, survey findings will be summarised under

- (a) topics most important to social media readership
- (b) platforms respondents use to access plant pathology related topics and inspiration
- (c) scientific societies and other sources of plant pathology information and
- (d) the demographic profiles of users and non-users.

Finally, we will hope to identify opportunities for improving social media use to enhance science outreach, career prospects and well-being of plant pathologists.

Participants in the survey are asked to provide an email address to help avoid duplicate responses or SPAM but this information will remain confidential to ISPP. The Green Button opposite has the link to the survey.

**Number of Responses by Country or Region**  
(As at 24 February 2023)

Country or Region	# Responses
Japan	31
France	31
Italy	17
Vietnam	16
Thailand	15
Serbia	14
United Kingdom	12
Australia	12
Poland	12
Portugal	11
Ukraine	9
South Korea	7
India	4
United States of America	4
Two each: Spain, Uruguay, Bangladesh, Singapore, Bosnia and Herzegovina, South Africa, Pakistan,	14
One Each: Fiji, Belgium, Austria, Lebanon, Tunisia, Germany, Israel, Argentina, Croatia, Taiwan, Mexico, Nepal	12
<b>Grand Total</b>	<b>221</b>

**PARTICIPATE IN THE  
SURVEY!**



## IRON INCREASES PLANT RESISTANCE AGAINST RICE BLAST FUNGUS

CENTRE FOR RESEARCH IN AGRICULTURAL GENOMICS NEWS, 17 FEBRUARY 2023

Rice (*Oryza sativa* L) is the world's most widely used cereal for human consumption and the second most produced in the world after maize. However, rice production is seriously threatened by rice blast, a fungal disease that has been reported in more than 80 countries on all continents, including the growing areas of almost all rice-producing regions in Spain (Andalusia, Extremadura, Catalonia, Valencia, etc.).

A study recently published in the *Rice* journal and led by Blanca San Segundo, CSIC researcher at CRAG, has revealed that exposing rice plants to moderately high levels of iron increases resistance to infection by the pathogenic fungus *Magnaporthe oryzae*, the agent causing rice blast, the most common disease in this crop and responsible for large production losses worldwide.

Iron is an essential nutrient for plant growth and development. Although it is an abundant element in most agricultural soils, its availability to crops might be low. Depending on the soil characteristics, iron is found in its insoluble or soluble form, and therefore the plant can absorb it more or less effectively. In addition, both a deficiency and an excess of iron can become toxic to the plant. Thus, the precise control of the amount of iron as well as its bioavailability turn out to be crucial for the correct growth and productivity of the crops.

Using RNA sequencing methods, which enables the analysis of expression levels of different genes, the research team has detected the activation of several genes related to plant defenses when rice has been treated with iron for a short period of time. In addition, the presence of iron increases the expression of genes related to the generation of phytoalexins, molecules with antifungal activity which are able to inhibit the growth of *Magnaporthe oryzae*. Thus, it has been possible to demonstrate that a moderate treatment with iron activates the innate immune system of rice.

This work reveals that, under infection conditions, in the leaves of plants treated with iron, an accumulation of both reactive oxygen species (ROS) and iron is observed in specific and very localised regions of the infected leaf, which correspond to the pathogen entry points. This triggers a process of programmed cell death in the plant cells, known as ferroptosis, which limits the progression of the fungus in the infected tissue and therefore the infection is controlled by the plant itself.

“The cell suicide response or ferroptosis has been described in rice varieties resistant to infection by *M. oryzae* (incompatible interactions). However, it is the first time that this response has been observed in rice plants that are susceptible to infection by this fungus as a result of iron treatment. Iron has a function that enhances the immune response in the rice plant,” says Blanca San Segundo, the leading researcher of the study.

Previous studies by the same group already pointed out that nutrients could play a key role in the resistance or susceptibility to infection by this fungus. The same research team published in 2020 that excess of phosphate, as a consequence of the excessive use of phosphate fertilisers, has the opposite effect since it makes rice more susceptible to infection by the same fungus.

Understanding the relationship between the supply of nutrients (macronutrients and micronutrients) and the defense response of the plant against pathogens can be very useful when designing new protection strategies against blast disease and hence minimize the associated economic losses. In addition, this knowledge will contribute to establish more sustainable practices for growing rice by reducing the use of agrochemicals (fertilisers and pesticides).

## **INTERNATIONAL PLANT HEALTH CONFERENCE'S REPORT NOW PUBLISHED**

### **INTERNATIONAL PLANT PROTECTION CONVENTION NEWS, 6 FEBRUARY 2023**

The world's leading authorities on plant health came together for the world's first-ever International Plant Health Conference (IPHC), co-organised by FAO, the Secretariat of the International Plant Protection Convention (IPPC) and the Department of Environment, Food and Rural Affairs (DEFRA) of the United Kingdom.

More than 500 policymakers, academics and experts from more than 74 countries convened on 21-23 September 2022 at the Queen Elizabeth II Conference Centre in London to address current and future plant health challenges, including food security, the impacts of climate change, environmental protection, facilitating safe trade, and new pest and disease pathways, such as e-commerce.

Protecting plant health is critical in achieving the United Nations Sustainable Development Goals (SDGs). Healthy plants contribute to achieving food security for all (SDG 2 Zero Hunger) and promote responsible food consumption and production (SDG 12). Protecting plants helps protect biodiversity and the environment from the impact of plant pests (SDG 13 and 15), and facilitates safe trade, in turn providing decent job opportunities and boosting economic growth (SDG 8).

More than 120 speakers across 20 sessions and delegates shared knowledge and discussed global scientific, technical and regulatory issues, alongside actions to tackle these existential threats to our society, economy and environment. More than 1350 viewers followed the conference via webcast during different sessions. A total of 55 research posters were presented, including 30 from early career researchers.

The International Plant Health Conference supports the delivery of the IPPC Strategic Framework 2020-2030.

The conference report can be downloaded through this [link](#).



## ESTABLISHMENT OF A METHOD TO COLLECT ROOT EXUDATES FROM OLIVE PLANTS AND ITS VALIDATION BY DETERMINING THE EFFECT OF ROOT EXUDATES AGAINST *VERTICILLIUM DAHLIAE*

A paper by Ana López-Moral *et al.* titled “Establishment of a method to collect root exudates from olive plants and its validation by determining the effect of root exudates against *Verticillium dahliae*” was published on 16 November 2022 by *Plant and Soil* (vol. 483, pp 625-642). The abstract is as follows:-

The aim of this study was to establish a method to collect root exudates from olive plants. The method was validated by determining the effect of root exudates on the viability of *Verticillium dahliae* conidia and microsclerotia.

Three collection media (deionized distilled water, 0.01 M CaSO<sub>4</sub> solution, Hoagland nutrient solution) and four collection periods (2, 4, 6, 12 h) were assessed to identify the most appropriate combination for root exudate collection in olive plants ('Picual'). To validate the method, root exudates were collected from olive cultivars with different susceptibilities to *V. dahliae* ['Frantoio' (resistant); 'Arbequina' (moderately susceptible), and 'Picual' (highly susceptible)] and treated or not treated with two microorganisms (*Bacillus amyloliquefaciens* PAB-024; *Aureobasidium pullulans* AP08) or two phosphite salts (Naturfos®; Phoscuprico®). The effect of root exudates on the germination of *V. dahliae* conidia and microsclerotia was evaluated *in vitro*. The dissolved organic carbon in the root exudates was estimated.

A 0.01 M CaSO<sub>4</sub> solution and 4 h were confirmed to be the preferred medium and timing combination to collect root exudates from olive. Root exudates from 'Arbequina' and 'Picual' significantly induced conidia and microsclerotia germination in comparison with the control without exudates. AP08 was the most effective treatment to enhance the effectiveness of root exudates in decreasing conidia and microsclerotia viability. Root exudates from 'Picual' or 'Frantoio' treated with AP08 showed the highest levels of organic carbon.

The collection method for root exudates developed herein was useful to assess the effect of root exudates from olive plants and the olive-*V. dahliae* interaction.

[Read paper.](#)



## NEW TOMATO BRED TO NATURALLY RESIST PESTS AND CURB DISEASE

KRISHNA RAMANUJAN, CORNELL CHRONICLE, 18 JANUARY 2023

A Cornell researcher has completed a decades-long program to develop new varieties of tomato that naturally resist pests and limit transfer of viral disease by insects. Martha Mutschler-Chu, a plant breeder and geneticist who leads the program, recently deposited an initial set of insect-resistant tomato research lines in the U.S. Department of Agriculture germplasm system and the Tomato Genetics Resource Center at University of California-Davis, which will be available for anyone to access the plants for research.

This spring, Mutschler-Chu will complete development of a new set of 20 elite lines, which will then be made available to any interested seed company, which may breed the pest resistant traits into commercial varieties. Breeding new varieties could take seed companies up to five years before they start selling new insect resistant varieties.

For growers, these benefits will offer less crop loss and fruit damage, while also eliminating or reducing pesticide use and protecting the environment.

Pest resistance in these tomatoes was adapted from a wild tomato native to Peru, *Solanum pennellii*. The Andean tomato has little hairs called trichomes that excrete droplets of sugar compounds, called acylsugars, which repulse insects. In this way, the plants safely and naturally deter a wide variety of insects, preventing them from feeding, eating leaves and transferring viruses, or laying eggs, where larvae might damage plants.

“The new lines combine better quality plants and fruit with high acylsugars levels, a combination seed companies need to transmit the acylsugar trait into commercial varieties,” said Mutschler-Chu, professor emeritus in the School of Integrative Plant Science, Plant Breeding and Genetics Section, part of the College of Agriculture and Life Sciences.

In field and laboratory tests of the initial research lines, plant scientists from Cornell and seven other university partners found that the right levels and form of acylsugars controlled western flower thrips that spread spotted wilt virus, and sweet potato whiteflies, which transmit yellow leaf curl virus. As a result, significantly fewer plants were infected with these devastating diseases and, in field trials, those infections occurred late in the season.

The new elite lines, soon to be available to seed companies, have had most of the wild genes from *S. pennellii* that promote agronomically undesirable traits removed from their genomes. Mutschler-Chu retained critical acylsugar genes while removing many other wild genes that caused negative traits such as excess branches, small fruit and an off-flavor. While initial research lines contained about 12% wild *S. pennellii* DNA, the newest lines are down to approximately 2.5% wild DNA.

In broader terms, the work practically demonstrates a process for incorporating a valuable trait, based on a safe natural compound, controlled by numerous genes, and that is effective against viruses and multiple pests, a strategy that could also benefit other crops, Mutschler-Chu said.



Martha Mutschler-Chu, professor emeritus in the School of Integrative Plant Science, Plant Breeding and Genetics Section, checks tomato plants in Guterman Greenhouses. (Photo credit: Jason Koski, Cornell University).

## CURRENT VACANCIES

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### Professor and Chair - Department of Plant Pathology, University of Florida

The [Institute of Food and Agricultural Sciences](#) is committed to creating an environment of inclusive excellence that affirms diversity across a variety of dimensions, including ability, class, ethnicity/race, gender identity and expression. Inclusive excellence is the active process of including and respecting everyone as we strive for excellence and equitable outcomes in all we do at the University of Florida. We particularly welcome applicants who can contribute to such an environment through their scholarship, teaching, mentoring, and professional service. We strongly encourage historically underrepresented groups to apply.

For more information, and to apply, please visit: <https://explore.jobs.ufl.edu/en-us/job/524899>.

For full consideration, candidates should apply and submit materials by 1 February 2023. The position will remain open until a viable applicant pool is determined.

### Assistant Professor of Plant Pathology (Potato Pathology) - Washington State University, Position # 128780

The Department of Plant Pathology at Washington State University (WSU) is recruiting a full-time (12 months), tenure-track position in plant pathology at the rank of Assistant Professor. The successful candidate will: 1) develop a nationally and internationally recognized research program leading to enhanced management of diseases of potatoes grown in Washington State and the Pacific Northwest; 2) develop an extension program relevant to Washington potato production; 3) contribute to the teaching mission of the department and the College of Agricultural, Human, and Natural Resource Sciences (CAHNRS); 4) provide service contributions to the department, college, and university; and 5) contribute to WSU's commitment to diversity, equity, and inclusive excellence. More info about the position and further instructions in the [PDF](#).

Submit the application online (<https://hrs.wsu.edu/jobs/>). Screening begins on 8 March 2023.

## ACKNOWLEDGEMENTS

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## COMING EVENTS

### 3<sup>rd</sup> Global Soil Biodiversity Conference

13 March - 15 March, 2023

Dublin, Ireland

Website: [gsb2023.org](http://gsb2023.org)

### 68<sup>th</sup> Annual Conference on Soilborne Plant Pathogens and the 53<sup>rd</sup> Annual Statewide California Nematology Workshop

28 March - 30 March, 2023

California, USA

Website: [soilfungus.wsu.edu](http://soilfungus.wsu.edu)

### 13<sup>th</sup> International Congress on Plant Biotechnology and Agriculture

12 June - 16 June, 2023

Cayo Guillermo, Cuba

Website: [bioveg.bioplasmas.cu](http://bioveg.bioplasmas.cu)

### International Fusarium Laboratory Workshop

18 June - 23 June, 2023

Bari, Italy

Website: [fusarium2023.ispacnr.it/](http://fusarium2023.ispacnr.it/)

### Plant Health 2023 – APS Annual Meeting

12 August - 16 August, 2023

Denver, Colorado, USA

Website:

[www.apsnet.org/meetings/annual/Pages/default.aspx](http://www.apsnet.org/meetings/annual/Pages/default.aspx)

### 12<sup>th</sup> International Congress of Plant Pathology (ICPP2023)

20 August - 25 August, 2023

Lyon, France

Website: [www.icpp2023.org](http://www.icpp2023.org)

### Plant Pathology 2023

5 September - 8 September, 2023

Birmingham, UK

Website: [www.bspp.org.uk/conferences/plant-pathology-2023/](http://www.bspp.org.uk/conferences/plant-pathology-2023/)

### X International Conference “Bioresources and Viruses”

11 September - 13 September, 2023

Kyiv, Ukraine

Website: [icbv.knu.ua](http://icbv.knu.ua)

### 24<sup>th</sup> Australasian Plant Pathology Society Conference

20 November - 24 November, 2023

Adelaide, South Australia

Website: [eventstudio.eventsair.com/apps2023/](http://eventstudio.eventsair.com/apps2023/)

### XX International Plant Protection Congress

1 July - 5 July, 2024

Athens, Greece

Website: [www.ippcathens2024.gr](http://www.ippcathens2024.gr)

### 9<sup>th</sup> ISHS International Postharvest Symposium

11 November – 15 November, 2024

Rotorua, New Zealand

Website: [scienceevents.co.nz/postharvest2024](http://scienceevents.co.nz/postharvest2024)







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[www.icpp2023.org](http://www.icpp2023.org)



## INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

[WWW.ISPPWEB.ORG](http://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.

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