PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

ISPP NEWSLETTER

ISSUE 49 (10) OCTOBER 2019

Editor: Daniel Hüberli (**email**)

Join the ISPP **mail list**

The International Society for Plant Pathology promotes the world-wide development of plant pathology and the dissemination of knowledge about plant diseases and plant health management

IN THIS ISSUE:

ISPP ENDORSES MICROBIOLOGISTS' CLIMATE CHANGE WARNING

RICK CAVICCHIOLI, UNIVERSITY OF UNIVERSITY OF NEW SOUTH WALES, AUSTRALIA

The International Society for Plant Pathology (ISPP) has endorsed the Consensus Statement Scientists' warning to humanity: microorganisms and climate change. The Microbiologists' Warning aims to raise awareness of the microbial world and make a call to action for microbiologists to become increasingly engaged in, and microbial research to become increasingly infused into, the frameworks for addressing climate change.

The motivation for the Microbiologists' Warning comes from the Alliance of World Scientists and the Scientists' Warning Movement that was initiated by Bill Ripple (Oregon State University) to alert humanity to the impacts of human activities on global climate and the environment. In 1992, the Union of Concerned Scientists alerted humanity to the threat of climate change and the need for sustainability with 1,700 scientists signing the first Warning. Twenty-five years later (2017) more than 15,000 scientists signed the Second Warning; currently 21,000+ scientists have signed, and the website is still taking signatures. At the heart of the Warning is a call to governments and institutions to shift policy away from economic growth and towards a conservation economy that will stop environmental destruction and enable human activities to achieve a sustainable future. A film, The Second Warning, is currently being made that aims to document scientists' advocacy for humanity to replace 'business as usual' and take action to achieve the survival of all species by averting the continuing environmental and climate change crisis. Linked to the Second Warning is also a series of focused Scientists' Warning articles (currently 50), including our Microbiologists' Warning.

To grow the Microbiologists' Warning, signatories are encouraged to work with their professional societies to write additional article(s) addressing specific aspects of microorganisms and climate change related to members' expertise, and particularly emphasising issues of national relevance.

"CLIMATE CHANGE AND FARMING PRACTICES CAN EXACERBATE THE IMPACT OF PLANT PATHOGENS THEREBY RISKING GLOBAL CROP PROTECTION AND FOOD SECURITY."

Photo credit: Brajesh Singh, Western Sydney University

The ability of science and society to address climate change will be considerably empowered by microbiologists, by agencies demonstrably incorporating microorganisms into their 'thinking', and by broadly enhancing microbial literacy in society.

Microbiologists can also contribute to efforts as world scientists' warning of a climate emergency and by looking to engage in a variety of ways to act on our own warnings to humanity.

Sign the petition after reading Scientists' warning to humanity: microorganisms and climate change.

OBITUARY OF ANTHONY JOHNSTON, DIRECTOR CMI 1968–1983

DAVID SMITH, DIRECTOR BIOLOGICAL RESOURCES, CABI, 12 SEPTEMBER 2019

It was sad to hear of the passing of Anthony Johnston, a plant pathologist and former Director of the Commonwealth Mycological Institute (CMI). He is fondly remembered by his colleagues, some of whom are still working at CAB International (originally CAB – Commonwealth Agricultural Bureaux) which was the parent organisation of the Institute.

In the booklet CMI - the first sixty years (1920-1980) his profile provides an insight into his education, and contribution to the field of plant pathology and tropical agriculture. After a post graduate year at the Imperial College of Tropical Agriculture in Trinidad, he went to Malaya in 1946 as a Plant Pathologist in the Department of Agriculture, later to become Senior Plant Pathologist. He worked mainly on fungal and bacterial diseases of a wide range of tropical crops, particularly rice, tea, pineapple and palms. In 1958 he became FAO Regional Plant Protection Specialist for the UN at the FAO Regional Office in Bangkok, Thailand and travelled widely advising on plant quarantine, plant protection and carrying out plant disease surveys. He joined CMI in 1965 as assistant Director and took over from Geoffrey Ainsworth as Director in 1968. He was instrumental in the changeover from manual to computerised production of abstract journals and setting up a computer database with an on-line retrieval service. Among his CMI publications were CMI in the Development of Mycology and Plant Pathology, Current Trends in Plant Pathology, Lucknow University Botany Department, India; the Plant Pathologist's Pocket Book; Preservation methods in the CMI culture collection. Physiology of micro-organisms. Today and Tomorrow's Printers and Publishers, New Delhi, India: 1977 pp.1-10 ref.8; A bibliography of lists of plant diseases and fungi. 2. Asia. CABI Publishing, Wallingford, UK: Review of Plant Pathology 1982 Vol.61 No.11 pp.519-525

He spoke of his first visit to CMI in early 1946, then again in 1954 in his reminiscences in the book IMI Retrospect and Prospect and had fond memories of the warm welcome he received. His abiding memory of 1968 was the flooding of the Thames at Kew, with water surging into the grounds of CMI and young female staff, technicians and clericals wading through cold water to build a bridge out of tables planks and stools so that he and other staff could cross Ferry Lane without getting wet. When he took over as Director the staff had been enlarged to nine Scientific Information Officers, eight Mycologists and a Bacteriologist.

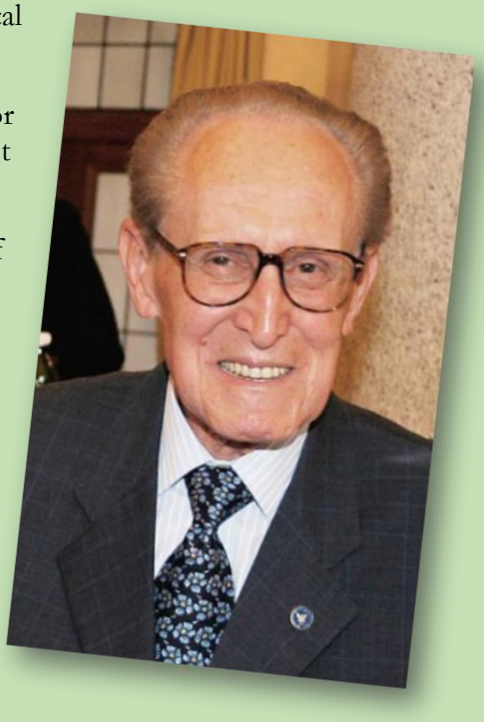
By the time he became Director, the old Colonial Pool of Plant Pathologists which was based at CMI had already dried up. However, this was soon to be replaced by a Plant Pathology Liaison unit funded on a contract basis by the then Overseas Development Ministry. Mr Johnston's close links with the many UK plant pathologists then working overseas, many of whom often visited CMI, and with the Ministry helped to secure this. He took a keen interest in our monthly briefings with him and helped to secure further contracts until 1979 when the unit was put on a more permanent footing and additional research activities and associated contracts obtained. Thus, he played a seminal role in the initiation of what was to become a major source of funding for the Institute.

Agnes Onions recalled when CMI were examining strains of Rank Hovis (at the time) fungal protein project to produce "Quorn" that they were fascinated to see bubbling fermenters, computer monitoring and the whole manufacture. They were offered burgers to sample, Johnston smiled and said "Ladies first".

By 1968, accommodation at CMI was very cramped but in 1975 a new building was completed to house the culture collection. He was instrumental in ensuring that a teaching laboratory was made available to continue and to expand CMI's teaching of mycology and plant pathology. He retired on 27 June 1983 after three years as Assistant Director and nearly 15 years as Director. Just before he retired, a second edition of the Plant Pathologist's Pocket Book was published and he planned to continue his wide interests in tropical plant pathology.

In his reminiscences in the book IMI Retrospect and Prospect, Principal Mycologist Martin Ellis recalls that Mr Johnston was a very experienced tropical plant pathologist who did much to advance the interests of plant pathologists. He went on to say "He was a very pleasant man to work with and his wife was very good at entertaining." His old colleagues retain fond memories and feel privileged to have worked with him and to have known him.

OBITUARY OF PROFESSOR ANTONIO GRANITI, 1926-2019



We are really very sorry to communicate to the whole phytopathological community that Prof Graniti passed away suddenly on 11 September 2019.

Prof Graniti was an eminent scientist, Professor – and later Emeritus professor - in plant pathology at the University of Bari, and member of the most prestigious academy in Italy, the Lincei Academy.

Prof Antonio Graniti has always been very much involved in the life of scientific societies.

He has been a most important reference person for the Mediterranean Phytopathological Union (MPU), for which he served as President for many years, deeply believing in the role of the Union in fostering co-operation and collaboration among plant pathologists working in the region.

Prof Graniti worked hard in the MPU journal, *Phytopathologia Mediterranea*, of which he was first Assistant Editor, and later, for many years, Editor in Chief with Prof Canova. He contributed significantly to strengthening the interest in phytopathology in one of the most critical areas of the Mediterranean basin by sharing knowledge as well as by networking with national plant pathology societies.

In 1992, Prof Graniti was one of the founders, together with Professor Canova and Prof. Alghisi, of the Italian Society for Plant Pathology (SIPaV).

All of us that have been honoured to collaborate with him send our heartfelt condolence to his family and to the whole plant pathology community for this big loss.

The MPU and SIPaV Presidents and Boards, and the whole Editorial board of Phytopathologia Mediterranea

SPECIAL ISSUE ON GRAPEVINE TRUNK DISEASES

JOSÉ RAMÓN ÚRBEZ TORRES

A special issue on Grapevine Trunk Diseases is scheduled for publication in *Phytopathologia Mediterranea* as has been done before after each International Workshop. We are still finalising the deadline for manuscripts' submission but the issue is expected to be published next year in the April or August volume.

If you wish to contribute by sending your manuscript (reviews and/or research papers) to be published in this special issue please send an abstract before 31st October to José Ramón Úrbez Torres (joseramon.urbeztorres@canada.ca) and please CC in the e-mail Florence Fontaine (florence.fontaine@univ-reims.fr) and Laura Mugnai (laura.mugnai@unifi.it).

CALL FOR EDITOR-IN-CHIEF OF THE JOURNAL OF PLANT PATHOLOGY

MARIA LODOVICA GULLINO

The Italian Society of Plant Pathology (SIPaV) SIPaV seeks expressions of interest from scientists interested in the honorary position of Editor-in-Chief of the *Journal of Plant Pathology*, published jointly by SPRINGER and SIPaV. The appointee is expected to commence early in 2020 as Editor-in-Chief of the *Journal of Plant Pathology* commencing with volume 102. The Editor-in-Chief will be initially appointed for a three year term.

Editor-in-Chief responsibilities

The Editor-in-Chief has the responsibility for the international reputation and profile of the Journal with respect to its competitors in the international marketplace. Overall measures of this success include the number and quality of submissions, number and geographical location of subscriptions, citations and Impact Factor, web usage and the financial position of the Journal.

Journal of Plant Pathology is owned by the SIPaV. The Journal's policies are determined by the Editor-in-Chief in consultation with the SIPaV Board and the Publisher (SPRINGER). The Editor-in-Chief chairs the Editorial Board and takes a leading role in determining the publishing strategy for the Journal. The Editor-in-Chief leads the Editorial Board to attract and select content for the Journal. The Editor-in-Chief has the ultimate responsibility for the acceptance of papers into the Journal. The Editor-in-Chief will have editorial support from the Publisher and a Deputy Editor, selected by the Editor in Chief and the SIPaV board.

Specific responsibilities of the Editor-in-Chief are:

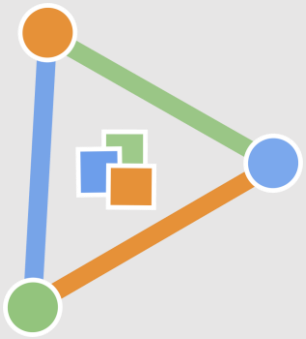
1. Defining the Journal's direction, scope and policy to ensure it is appropriately aligned to the market (upon agreement with the SIPaV Board and the Publisher).
2. Promoting the Journal and implementing strategies for increasing quality submissions, including review articles.
3. Delegating peer review of papers to Senior Editors as appropriate.
4. Responding to authors in a courteous, timely and efficient manner.
5. Acting as a final arbiter on any disputes between authors and the Senior Editors.
6. Guarantee a sufficient number of accepted manuscripts to fill issues and maintain publication schedules.
7. Providing advice to the Journal Publisher during preparation of the Journal's annual publishing and marketing plans.
8. In liaison with SIPaV Board, establishing and maintaining links with Partners and relevant Scientific Societies.
9. Monitoring publication standards and providing feedback to the SIPaV and the Journal Publisher.
10. Overseeing the selection of Senior and Associate Editors to join the Editorial Board as required.

The "Search Committee" will be composed by three SIPaV members and by one representative of SPRINGER. Any potential candidates will be excluded from involvement in the "Search Committee".

Expressions of interest will close on 15 November 2019. For further information, please contact the SIPaV President, Maria Lodovica Gullino e-mail: marialodovica.gullino@unito.it

ARE WE PATHOLOGISTS EMBRACING OPEN AND REPRODUCIBLE RESEARCH PRACTICES?

ADAM H. SPARKS, UNIVERSITY OF SOUTHERN QUEENSLAND, AUSTRALIA



The adoption of open science practices has been highlighted as essential to promote accessibility, transparency and reproducibility in science. Documenting, storing and sharing of protocols, raw data and computational code are essential steps towards reproducible research. Plant pathology is strongly founded on observational and experimental approaches where the collection of data enables us to understand and analyze plant disease phenomena. However, adoption of these practices has been considered slow in many fields and the current status of our discipline has not been evaluated.

The Open Plant Pathology (OPP - https://openplantpathology.org/) community invites you to participate in a survey to provide us with data on the status of reproducible research practices among plant pathologists, including organisational procedures, data management, analytical workflows and sharing of scientific information. Participation is voluntary and no name or any identifying information will be collected. The data collected will be used by OPP leaders in presentations, blog posts or opinion pieces. You are encouraged to participate and help us to identify areas that we need to focus our attention to improve and disseminate reproducible research practices in our field. If you're interested to participate please follow this link: http://shorturl.at/ILOU2.

READY-TO-EAT SALAD CROPS: A PLANT PATHOGEN'S HEAVEN

A review by Maria Lodovica Gullino *et al.* titled "Ready-to-eat salad crops: A plant pathogen's heaven" was published in September 2019 by *Plant Disease* (vol. 103, pp 2153-2170). The abstract is as follows:-

The ready-to-eat salad sector, also called fresh-cut or bagged salads, is a fast-growing segment of the fresh-food industry. The dynamism and specialization of this sector, together with the lack of adequate crop rotation, the globalization of the seed market, and climate change, are the main causes of the development of many new diseases that cause severe production losses. Newly detected diseases of the most important crops grown (lettuce, wild and cultivated rocket, lamb's lettuce, chicory, endive, basil, spinach, and Swiss chard) are critically discussed. The management of these diseases represents a formidable challenge, since few fungicides are registered on these minor-use crops. An interesting feature of the ready-to-eat salad sector is that most crops are grown under protection, often in soilless systems, which provide an environment helpful to the implementation of innovative control methods. Current trends in disease management are discussed, with special focus on the most sustainable practices.

Read review.

ANIMATED FILM ABOUT AFRICAN FOOD SECURITY LAUNCHED

RICHARD WYATT, CONNECTED, 16 SEPTEMBER 2019

A new 90-second animated film about plant diseases that devastate African food crops has been unveiled. In an innovative university collaboration, two students from the University of the West of England (UWE) Animation at UWE Bristol were commissioned by the CONNECTED Virus Network, based at The University of Bristol and Newcastle University, to make the short cartoon.

In a simple and hard-hitting way, the film depicts how the staple food crop cassava is destroyed in Sub-Saharan African countries by viruses carried by whiteflies. It draws attention to the way the 1,100-strong CONNECTED Virus Network is bringing together world-class researchers from across the globe to address these issues.

Early in 2019 Eve Bannister and Charlotte May were successful in a process which saw students pitch to the CONNECTED Network to create a film which, with the co-operation of their tutors, would form a key component of their second year of studies. Their brief was to create a 90-second outreach animation about plant diseases' impact, primarily aimed at non-expert laypeople, and to draw attention to the importance of the CONNECTED Network in helping address these issues. It takes the example of the cassava crop to show the impact of two damaging diseases spread by insects.

CONNECTED Network Director, Prof. Gary Foster (University of Bristol) explains: "The film uses imaginative stop-motion animation techniques, injecting colour and artistic interpretation to hold the viewer's attention and to explain the food security challenges in extremely simple terms. Rather than offering technical explanations of disease symptoms, it outlines the broad issues at stake and what CONNECTED is seeking to achieve."

"Very few members of the public, or indeed governments, fully realise just how seriously plant diseases affect the lives of people in Sub-Saharan African countries. The devastation they cause can actually be more harmful and damaging than more commonly-known human diseases. We hope this short film contributes towards a better understanding.

Eve and Charlotte worked from a series of images and other information supplied by a number of researchers working in the field in African countries..

HARNESSING TOMATO JUMPING GENES COULD HELP SPEED-BREED DROUGHT-RESISTANT CROPS

UNIVERSITY OF CAMBRIDGE NEWS, 16 SEPTEMBER 2019

A FAMILY OF 'JUMPING GENES' FOUND IN TOMATOES HAS THE POTENTIAL TO ACCELERATE CROP BREEDING FOR TRAITS SUCH AS IMPROVED DROUGHT RESISTANCE.


Photo credit: University of Cambridge

Researchers from the University of Cambridge's Sainsbury Laboratory (SLCU) and Department of Plant Sciences have discovered that drought stress triggers the activity of a family of jumping genes (Rider retrotransposons) previously known to contribute to fruit shape and colour in tomatoes. Their characterisation of Rider, published in the journal *PLOS Genetics*, revealed that the Rider family is also present and potentially active in other plants, including economically important crops such as rapeseed, beetroot and quinoa. This highlights its potential as a source of new trait variations that could help plants better cope with more extreme conditions driven by our changing climate.

This wide abundance encourages further investigations into how it can be activated in a controlled way, or reactivated or re-introduced into plants that currently have inactive Rider elements so that their trait diversification potential can be regained. Such an approach has the potential to significantly reduce breeding time compared to traditional methods.

Transposons, more commonly called jumping genes, are mobile snippets of DNA code that can copy themselves into new positions within the genome - the genetic code of an organism. They can change, disrupt or amplify genes, or have no effect at all. Discovered in corn kernels by Nobel prize-winning scientist Barbara McClintock in the 1940s, only now are scientists realising that transposons are not junk at all but actually play an important role in the evolutionary process, and in altering gene expression and the physical characteristics of plants.

Using the jumping genes already present in plants to generate new characteristics would be a significant step forward from traditional breeding techniques, making it possible to generate new traits in crops that have traditionally been bred to produce uniform shapes, colours and sizes to make harvesting more efficient and maximise yield.

NEW INSIGHT ABOUT BACTERIA WITHIN GRAPEVINE-KILLING CROWN GALL TUMORS

LUKE AUBURN, ROCHESTER INSTITUTE OF TECHNOLOGY NEWS, 23 AUGUST 2019

Scientists have mapped the DNA of bacteria found within a chronic disease affecting grapevines, a feat they hope will ultimately help protect the multibillion-dollar grape industry that produces juice, jelly, wine and other important products. Researchers including several Rochester Institute of Technology faculty and alumni sequenced the microbiome found within tumours of grapevines afflicted with crown gall disease. The study published in *Frontiers in Microbiology* spanned four continents and sheds light on the complex interaction between the grapevine and its microbial community, which could lead to better management of the crown gall disease in the future.

Muscat of Alexandria grape vine with crown gall tumors from the Southern San Joaquin Valley. Photo credit: Rochester Institute of Technology

Crown gall disease is caused by the plant pathogen *Allorhizobium vitis* and is one of the most debilitating diseases of grapes that impacts production and quality. The disease occurs when bacteria infect grapevines at the crown of the plant, where the root and the shoot meet.

The international team of researchers conducted next-generation DNA sequencing of 73 tumour samples taken from grapevines from as close as Geneva, N.Y., and as far as Hungary, Tunisia and Japan. Han Ming Gan '08 (biotechnology), a senior research fellow in genomics at Deakin University, said the study provides researchers a database that can be used to assess the disease stage of crown gall tumours in the future. The fundamental research can pave the way for more advances to combat the disease.

Read more.

BANANAGEDDON – CAN WE SAVE OUR BELOVED BANANAS?

BRETT SUMMERELL, ROYAL BOTANIC GARDEN SYDENY, 2 SEPTEMBER 2019

All around the world banana plantations are under threat from a fungal disease called Panama disease. In recent weeks the first report of the disease in Latin America has hit the headlines, especially in the US which is dependent on crops in this region for their supplies.

This so-called "bananageddon" has the potential to wipe out crops and raise the price of bananas globally. But what is this disease and where did it come from?

Read more.

CURRENT VACANCIES

Assistant Professor of Teaching in Disease Biology, University of California, Davis, USA

The Department of Plant Pathology invites applications for a full-time Assistant Professor of Teaching in the field of disease biology, with a focus on epidemiology and disease ecology. Expertise in plant pathology or a related discipline is required. The successful applicant will play a key role in the Global Disease Biology major (http://gdb.ucdavis.edu/) through instruction in the core classes GDB 101, Epidemiology, and GDB/VME 158, Disease Ecology, as well as the elective course PLP 120, Introduction to Plant Pathology. The position will remain open until filled, but application materials should be received by 30 September 2019 to be assured full consideration. Further details about the position and how to apply are available in the PDF.

ACKNOWLEDGEMENTS

Thanks to Wayne Coles, M. Lodovica Gullino, Grahame Jackson, Greg Johnson, Andrea Masino, David Smith, Adam H. Sparks, and José Ramón Úrbez Torres for contributions.

COMING EVENTS

22nd Biennial Conference of the Australasian Plant Pathology Society
25 November - 28 November, 2019
Melbourne, Australia
Website: www.apps2019.org

International Symposium on Microbe-Assisted Crop Production – Opportunities, Challenges and Needs
2 December - 5 December, 2019
Vienna, Austria
Website: microbe.org/

Indian Phytopathological Society 7th International Conference on "Phytopathology in Achieving UN Sustainable Development Goals"
16 January - 20 January, 2020
New Delhi, India
Website: ipsdis.org

45th Annual Conference of the Nigerian Society for Plant Protection
15 March - 19 March, 2020
University of Uyo, Main campus, Akwa Ibom, Nigeria
Website: nsppnigeria.org

16th Congress of the Mediterranean Phytopathological Union
23 March - 27 March, 2020
Limassol, Cyprus
Website: cyprusconferences.org/mpu2020

7th International Bacterial Wilt Symposium
29 March - 3 April, 2020
Montevideo, Uruguay
Website: 7ibws2020.fq.edu.uy

14th International Conference on Plant Pathogenic Bacteria
7 June - 12 June, 2020
Assisi, Italy
Website: www.icppb2020.com

Joint 18th International *Botrytis* Symposium & 17th International *Sclerotinia* Workshop
8 June - 12 June, 2020
Avignon, France
Website: colloque.inra.fr/botrytis-sclerotinia-2020

4th International Conference on Global Food Security
16 June - 19 June, 2020
Montpellier, France
Website: www.globalfoodsecurityconference.com

Asian Conference on Plant Pathology: Importance and Impact of Global Plant Health
15 September - 18 September, 2020
Tsukuba International Congress Center, Ibaraki, Japan

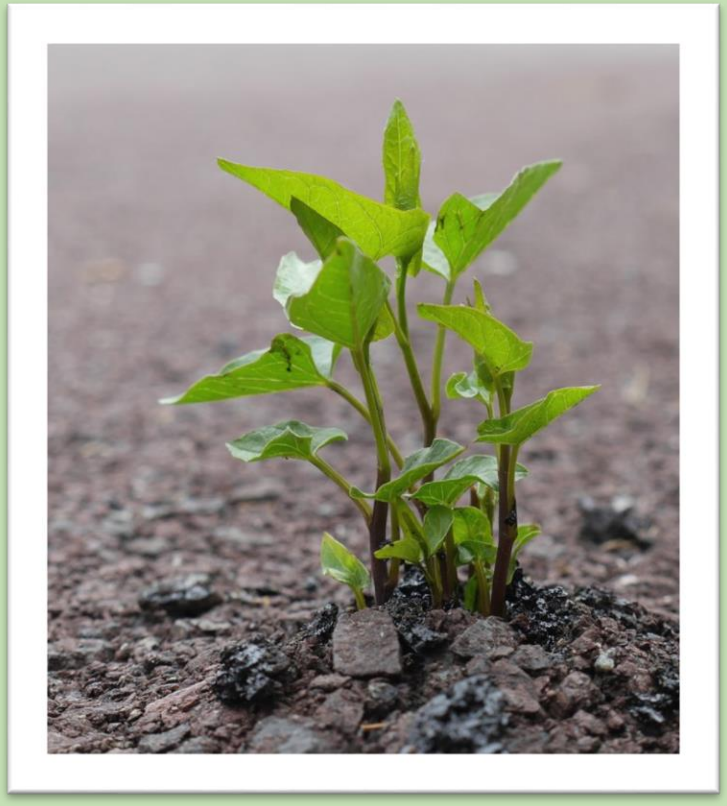
Website: iapps2010.me/2019/02/05/asian-conference-on-plant-pathology-2020/

13th Arab Congress of Plant Protection
1 November - 6 November, 2020
Le Royal Hotel, Hammamat, Tunisia
Contact: Dr. Asma Jajar, Chairperson of Organising Committee info@acpp-aspp.com
Website: acpp-aspp.com

IX International Postharvest Symposium
9 November - 13 November, 2020
Rotorua, New Zealand
Website: scienceevents.co.nz/postharvest2020

12th International Congress of Plant Pathology (ICPP2023)
20 August - 25 August, 2023
Lyon, France
Website: 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@issppweb.org

SUBSCRIBE OUR NEWSLETTER