



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



PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

ISPP NEWSLETTER

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INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

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PLANT PATHOLOGISTS AND PLANT PATHOLOGY AT THE TIME OF THE CORONAVIRUS

MARIA LODOVICA GULLINO, AGROINNOVA, UNIVERSITY OF TORINO, TORINO, ITALY

Being Italian, I have been very much affected by the epidemic of COVID-19 since the end of February. Italy has been, after China, the first country severely affected by the coronavirus before other European countries and the United States started to be concerned about the pandemic. At the beginning, the country has been for a while considered the black swan. Everybody knows how much Italian like the good life, are socially active, and embrace and kiss each other. Being forced to stay a part was difficult and shocking at the beginning. What we saw happening in China in the Hubei province looked so distant just a few weeks ago. Suddenly, we found ourselves in the same situation with Europe treating us as infected by the plague.



Some countries started closing their borders. Italians were no longer accepted in many other European countries. However, human and animal pathogens, as well as plant pathogens, do not have borders. Plant pathologists know this very well, and are able to understand how an epidemics can act.

In Italy, we just suffered the *Xylella* epidemics on olive groves. A somehow similar story, with plants instead of humans affected. In a few weeks other European countries started to be severely affected. Now the coronavirus epidemic is spreading all over the world and in some countries, at the time of writing, the epidemic starts to be under control.

As plant pathologists, our work life also has been affected. Universities have been (and still are) locked down, labs are closed, and activities are kept to a minimum just to keep plants and cell cultures alive. Many International and National Congresses have been cancelled or postponed. Travel has stopped with airline companies no longer connecting most countries. All celebrations related to the International Year of Plant Health planned during the period March-July 2020 have been cancelled or postponed.

Our daily life changed. In Italy, we had to adapt very quickly (and we did) to distant teaching. Most course have been provided this way, with all the problems related to the practical part of our discipline. Most researchers and technicians had to shift to smart working, not very popular before this event. However, the Italian genius always helps and all the Italian Universities were able to quickly change the way of teaching and working. It is sad walking throughout empty labs and greenhouses though. The COVID-19 is slowing of course our research; many grant calls are postponed. Field trials for this season are at risk.

As plant pathologists we are particularly interested in better understanding the reasons why Italy has been so severely affected. Is it because of the presence of an aged population? Italy is second after Japan, in terms of longevity. Has environmental pollution, particularly high in the Po Valley, a role? Why has the methodology applied to test people not been validated and applied in the same way in all Europe? Why were the standardised methods that we are using in our discipline not applied in the different countries? Do we have enough strains of COVID-19 deposited in order to better understand the Italian population of COVID-19? There are many questions, still open. The intensive research carried out in so many laboratories will soon provide some answers.

These epidemics, so devastating, will have very severe social and economic effects. Plant pathology, as a discipline, lost many opportunities to reach the public during this special year devoted, by the United Nations, to the celebration of 'Plant Health.' However, our discipline, being strictly connected with environmental health, should indeed take at least some advantage of such a negative situation to transform it into a momentum. In the concept of circular health, plant health is strictly linked to environment, animal, and human health. As plant pathologists we should indeed be able to let people understand the importance of plant health and its strict connection with environment, animal and human health.

CANCELLED AND POSTPONED CONFERENCES DUE TO COVID-19

DANIEL HÜBERLI

In order to protect the health, safety and well-being of our international community from COVID-19 some conferences and workshops have been postponed or cancelled. Affected meetings with cancellations or new dates, where confirmed, are listed here. These changes have also been updated in the Coming Events list. Please let me know of any date changes that I may have missed.

- [Asian Conference on Plant Pathology: Importance and Impact of Global Plant Health](#), cancelled
- [7th International Congress of Nematology](#), further postponed to 25-30 April 2021

How is COVID-19 AFFECTING PLANT PATHOLOGISTS?

This is a new series for plant pathologists across the world to share their stories on: “How is the COVID-19 pandemic impacting your research, teaching, outreach and lives? How are you and your family and colleagues coping?” Share your stories with our ISPP community. Send a few lines through the [online form](#) to share in the ISPP Newsletters over the next few months! Our first post comes from Jan Leach, ISPP President.

JAN E. LEACH, ISPP PRESIDENT

Who could have imagined how disruptive COVID-19 could be? My institution (Colorado State University) moved to online teaching and essential activities only on 10th March, and we won't reopen until after 15th May. Our labs are closed and all face-to-face meetings are cancelled, but work hasn't stopped. We are connected through endless emails and video conferencing calls. We grapple with how to help our students and colleagues cope with pandemic-induced anxieties, while news broadcasts are a constant reminder of the devastation to our global communities and economies. Still, there are positives. The internet allows reconnection with old friends. While we must don masks and gloves for rare shopping trips, we still find what we need, with some inexplicable shortages (no toilet paper, yeast or flour). In my entire career, I've not spent this much time at home in the Rocky Mountain foothills. But, working from home has allowed me to witness the earliest spring wildflowers, elk budding new antlers, and the first broad-tailed hummingbirds, who arrived right before (and survived!) two spring snowstorms (total 69 cm snow). My hope is that you and yours are safe and healthy, and that the days of social distancing will be history.

Top to bottom: senegalese batik mask during COVID-19; Elk budding new antlers, April 2020; and Pasque flowers... the harbingers of Spring, April 2020 (Photo credit: Jan Leach).



THE GLOBAL PLANT HEALTH ASSESSMENT IS LAUNCHED

SERGE SAVARY

During its November 2019 meeting, the Executive Committee of the ISPP has approved the conduct of a Global Plant Health Assessment. The objective is to mobilise ISPP colleagues all over the world in an assessment of plant health and the consequences of plant health in the generation of ecosystem services - provisioning (food, fibre, materials); regulating (climate, water, soils, pollution reduction); and cultural (spiritual, beauty, re-creation).

A webinar organised by **Paul Esker** (Penn State University, USA) on 14 April 2020, was followed by about 30 participants worldwide.

The Global Plant Health Assessment considers a series of global Ecoregions (Europe, Middle East and North Africa, Sub-Saharan Africa, South Asia, South-East Asia, East Asia, Australasia, North America, South America), and a series of Plant Systems: cereal systems, roots and tuber, banana and plantains, peri-urban horticultural systems and household gardens, urban vegetation, and forest systems. The matrix of [Ecoregion x Plant System] combinations is listed in the table.

The project follows concepts of the Millennium Ecosystem Assessment (<https://www.millenniumassessment.org/en/Synthesis.html>). It will be based on a series of reports generated by Lead Scientists supported by Experts on each of the [Ecoregion x Plant System] combinations listed in the table. The efforts mobilises scientists from many institutes and universities in Europe, the USA, Canada, India, Brazil, China, Indonesia, Australia, along with several international organisations, including CIAT, IITA, and The WorldVeg Center. It is coordinated by:

Serge Savary, INRAE, France (lead); Paul Esker, Penn State University, USA; Laurent Huber INRAE, France; Neil McRoberts, UC Davis, USA; Andy Nelson, Twente University, The Netherlands; Sarah Pethybridge, Cornell University, USA; Sarah Schmidt, Max Planck Institute, University of Düsseldorf, Germany; and Laetitia Willocquet, INRAE, France.

Additional information can be provided by [Serge Savary](#).

Global Plant Health Assessment: study matrix.

Code	System	World region	Eco-	Main Ecosystem Services Considered			Key Plant(s)/Crop
				P	R	C	
				provisioning	regulating	culture	
1.1	Cereal systems	Europe		P			Wheat
1.2		North America		P			Wheat and Maize
1.3		South America		P			Wheat
1.4		South Asia		P			Rice and Wheat
1.5		East Asia		P			Wheat
1.6		East Asia		P			Rice
1.7		Southeast Asia		P			Rice
1.8		sub-Saharan Africa		P			Maize
1.9		Australasia		P			Wheat
2.1	Roots & Tubers; Banana and Plantains	South Asia		P			Potato
2.2		South America		P			Potato
2.3		East Asia		P			Potato
2.4		sub-Saharan Africa		P			Cassava
2.5		sub-Saharan Africa		P			Banana
2.6		Europe		P			Potato
3.1	Fruit trees & Grape	Europe		P		C	Grapevine
3.2		Southeast Asia		P		C	Mango
3.3		N. America (East)		P		C	Nut trees; Fruit trees
3.4		N. America (West)		P		C	Grapevine; Almonds
4.1	Household Gardens	South Asia		P		C	Multiple
4.2		Southeast Asia		P		C	Multiple
4.3		sub-Saharan Africa		P		C	Multiple
5.1	Urban Vegetation	Europe			R	C	Plane tree
6.1	Forests	Amazon			R	C	multiple tree species
6.2		Southeast Asia			R	C	multiple tree species
6.3		Australasia			R	C	multiple tree species
6.4		Europe (West)		P	R		multiple tree species
6.5		Europe (North)		P	R		multiple tree species
6.6		North America		P	R		multiple tree species
6.7		North America		P	R		multiple tree species
6.8		South Asia		P	R		Agroforests

POSTHARVEST PATHOLOGY OF FRESH HORTICULTURAL PRODUCE – NEW BOOK

LLUÍS PALOU AND JOE SMILANICK

Lluís Palou and Joseph L. Smilanick (Eds). *Postharvest Pathology of Fresh Horticultural Produce*. CRC Press, USA. 824 pp.

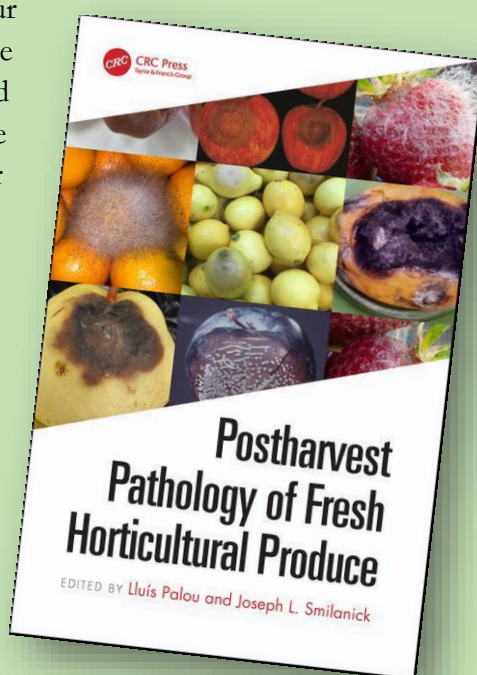
Optimal distribution of fresh horticultural products entails prolonging their freshness and nutritional quality as long as possible after harvest. A major limitation to their marketing is decay after harvest, which is caused primarily by fungal pathogens. 'Postharvest Pathology of Fresh Horticultural Produce,' edited by Lluís Palou and Joseph L. Smilanick, is the first comprehensive book on this subject and provides a wide resource of information about the biology and control of postharvest diseases of many fresh fruits and vegetables.

The book is structured in 24 chapters in three different sections. In Section I - Postharvest Diseases of Fresh Horticultural Produce - the most important microbial pathogens causing postharvest decay, the symptoms they cause (including colour plates), their economic importance, the epidemiology and significant preharvest and postharvest aspects affecting disease incidence, and conventional methods for commercial control are described for citrus fruits, pome fruits, stone fruits, table grapes, kiwifruit, strawberries, pomegranates, persimmons, loquats, avocados, papayas, bananas, Solanaceae and Cucurbitaceae crops, and leafy vegetables. In Section II – General Aspects of Infection Causing Postharvest Disease – chapters are devoted to the molecular insights in the pathogenicity of necrotrophic fungi, mechanisms of fungal quiescence, and detection and control of mycotoxins. In Section III – Novel Technologies to Control

Postharvest Decay of Fruits and Vegetables – the most relevant methods for postharvest disease control alternative to conventional chemical fungicides are discussed. These include biological control with antagonistic microorganisms, heat treatments, UV-C light, low-toxicity acids and salts, plant-derived compounds including extracts and essential oils, antifungal edible coatings with especial reference to chitosan and Aloe spp. gels, antimicrobial peptides and proteins, and elicitors for induced host resistance.

'Postharvest Pathology of Fresh Horticultural Produce,' authored by 75 leading experts from 19 countries, is a valuable and comprehensive resource for industry professionals, academics, educators, students, consultants, pest control advisors, regulatory personnel, and others interested in this subject.

For more information on this book please visit [CRC Press](https://www.crcpress.com).



'DISEASE TRIANGLE' OFFERS INSIGHT INTO COVID-19 PANDEMIC

KAY LEDBETTER, AGRI LIFE TODAY, 21 APRIL 2020

Plants are no strangers to diseases and devastating outbreaks. Humans can learn a valuable lesson from them when it comes to the current COVID-19 pandemic. While the urge is to return to our workplace and business once diagnosed COVID-19 cases peak, a Texas A&M AgriLife Research virologist and plant pathologist says one must only turn to the plant world to see how that would be a mistake. "When we reach the peak, we are at best only halfway towards coming down from this mountain of disease," said Karen-Beth Scholthof, a professor in the Department of Plant Pathology and Microbiology.

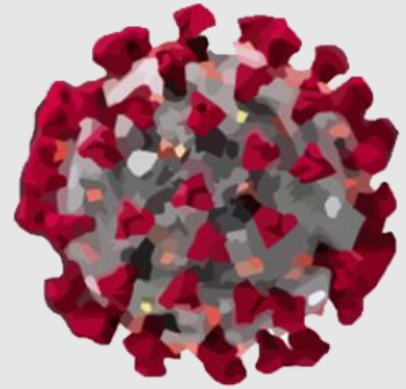
Scholthof concurs with Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, that social distancing should continue until there are essentially no new cases, no deaths. Her reasoning is based on a long-standing concept from plant pathology that describes the spread of any disease explains why environmental measures matter. Scholthof said it sheds light on the similarities between plant and human diseases.

Disease outbreaks depend on the "disease triangle," Scholthof said. This concept arose more than 60 years ago when George McNew, a plant pathologist at the Boyce Thompson Institute for Plant Research, diagrammed the fact that an epidemic arises from the interaction of three factors – a susceptible host, a virulent pathogen and a hospitable environment.

Scholthof said a simple form of McNew's disease triangle is helpful to explain the key role of environment in the success of pathogens such as SARS-CoV-2, the virus that causes COVID-19.

Genetically identical plants are a "monoculture" and are especially vulnerable to emerging pathogens and

disease. Today, plant pathologists break these cycles of disease by modifying or controlling either the host, the pathogen or the environment.



"We may breed crops that are resistant to the disease, plant them in a different way or at different times or use chemical treatments to protect the plants from harmful fungi, viruses, bacteria and insects," Scholthof said. "By changing the host with resistance genes, stopping the pathogen with chemicals, or altering the environment by planting earlier or later, for example, we can control an outbreak of a new disease or seasonal recurrence of a known pathogen."

In the case of COVID-19, people are the susceptible hosts and SARS-COV-2, the virulent pathogen. The constant and close contact between people is the hospitable environment needed to keep this pandemic going strong. The novel coronavirus, having jumped from an animal host, has become extraordinarily successful at infecting humans.

"We do not have population-wide immunity to this virus," Scholthof said. "Again, from Dr. Fauci, we 'don't make the timeline, the virus makes the timeline.' Until drugs or vaccines are shown to control the virus and the disease, we can only do our part to disrupt an environment that is favorable to the novel coronavirus."

[Read more.](#)

INTRODUCING PHYTOFRONTIERS™

APS, 27 APRIL 2020

PhytoFrontiers™ will launch mid-2020 to fill gaps in the APS catalog of journals. As a gold open access journal, it is an ideal place for authors who elect or are required to publish open access. With its broad scope, PhytoFrontiers is a new venue for those who wish to publish research that was previously out of scope of the existing APS journals. As the journal strives to publish all rigorous research regardless of impact, PhytoFrontiers provides space for plant pathologists to publish negative results or results perceived as having no impact.

SCOPE

PhytoFrontiers is an interdisciplinary open-access journal publishing high-quality research covering basic to applied aspects of plant health. All plant science research relevant to plant health will be considered. Manuscripts are judged solely on scientific merit. The PhytoFrontiers editorial board will provide authors robust and helpful peer review, rapid publication, and worldwide distribution through the APS Journals platform.

TOPIC AREAS EXAMPLES

- Technology-driven research on plant-associated microbes and their vectors
- New laboratory protocols and methods to analyze data
- Data science related to plant health
- Plant resistance including genomic and marker-assisted mapping
- Phylogenetics, evolution, and comparative genomics of plant-associated microbes
- Molecular biology and physiology of plant-associated microbes and their vectors
- Quantitative approaches to characterize plant health
- Research at the intersection of food safety and plant pathology

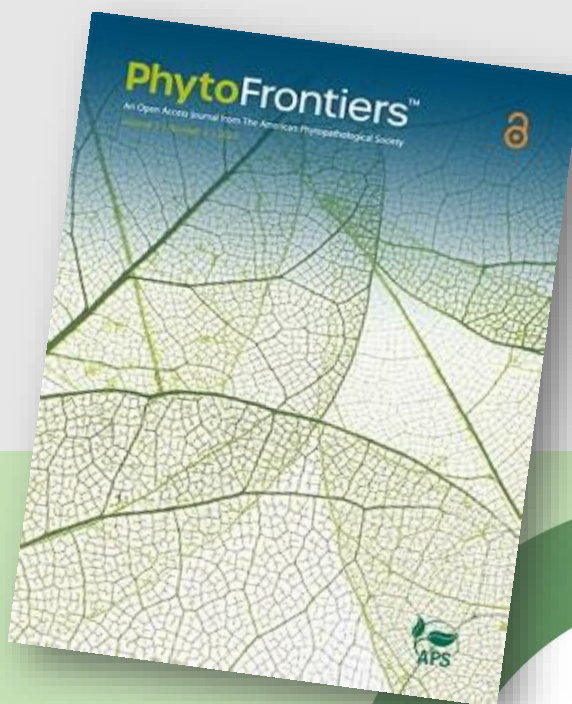
- Microbiome interactions with other microbes and plants
- Environmental and abiotic stresses on plants
- Sociological aspects of plant diseases
- Reviews related to plant health communication and outreach
- Resource announcements and genome sequence announcements

SUBMISSIONS

PhytoFrontiers will begin accepting submissions soon. For more details, email editor-in-chief [Nik Grünwald](#) or associate editor-in-chief [Steve Klosterman](#).

MORE INFO

For more about the decision to launch this new journal, read “[Introducing PhytoFrontiers, a Broad-Scope, Open-Access Journal from APS.](#)”

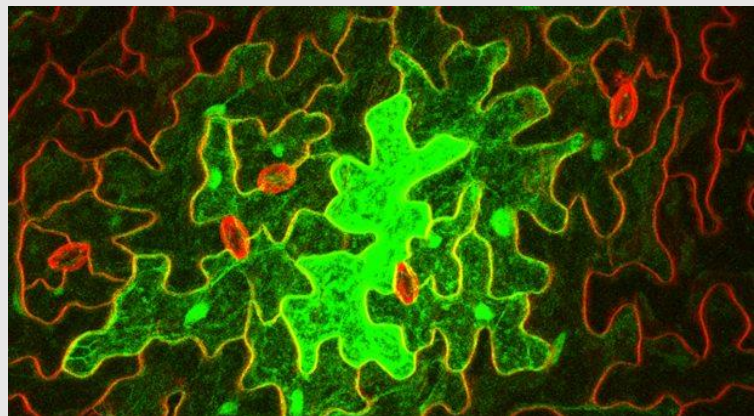


SELF-ISOLATION OR KEEP CALM AND CARRY ON – THE PLANT CELL’S DILEMMA

JOHN INNES CENTRE PRESS RELEASE, 14 APRIL 2020

Self-isolation in the face of a marauding pathogen may save lives but it comes at the expense of life-sustaining essentials such as transport, communication and connectivity. This leaves decision makers with a dreadful dilemma as they judge when it’s time to relax lockdown measures.

New research suggests plants must balance similar trade-offs as they respond to pathogens that could rip through their defence cell by cell. Plant cells communicate with their neighbours by tunnel-like connections called plasmodesmata. This is one way that cells exchange information and resources.



Plasmodesmata are lined by the same membrane that surrounds the cell and they allow molecules to move from one cell into the surrounding cells. When a cell perceives a threat like an invading fungus or bacteria, the plasmodesmata close over and the cells are temporarily isolated.

In this study researchers at the John Innes Centre used bioimaging approaches to investigate what proteins are involved in this process of cellular self-isolation. They show that the cell wall material of fungus – called chitin – triggers different responses in the membrane that lines the plasmodesmal tunnels when compared to the responses it triggers in the membrane that surrounds the cell body. The signalling cascade in plasmodesmata triggers the production of a polysaccharide called callose that forces the plasmodesmal tunnel to close over and for the cells to isolate themselves. “This indicates that cells control their connectivity independently of other responses, although we don’t yet know why this is,” explains Dr Christine Faulkner.

The study also found that guard-like receptors that sit in the plasmodesmata are different from those that sit in the rest of the membrane, but both receptors use the same enzyme. “This is puzzling”, says Dr Faulkner, “but we also discovered that the mechanism of activation of this enzyme in the plasmodesmata is different to the mechanism used in the rest of the membrane. Thus, it seems that while both receptors use the same tool (the enzyme) to transmit a signal, they use it differently for different purposes.”

The requirement for specific signalling in the plasmodesmal part of the cell membrane suggests that the vital processes requiring cell-to-cell connectivity must be regulated independently of immune response. The study concludes: “This raises questions whether there is a critical requirement for cells to balance connectivity and resource exchange with a protective mechanism imposed by isolation.”

The article: ‘[Chitin perception in plasmodesmata characterises submembrane immune-signalling specificity in plants](#)’ appears in *Proceedings of the National Academy of Sciences* (PNAS) of the USA.

PLANT VIRUS THAT COMBATS FUNGAL PATHOGENS MAY YIELD LOW-COST COVID-19 VACCINE

CENTRE FOR RESEARCH IN AGRICULTURAL GENOMICS NEWS, (CRAG) 10 APRIL 2020

Immunologists, epidemiologists, mathematicians, engineers... A variety of scientists worldwide are changing their primary research focus these days with the aim to bring solutions for the devastating SARS-CoV-2 pandemic. Plant researchers are no different.

The Consejo Superior de Investigaciones Científicas (CSIC) researchers at CRAG, María Coca and Juan José López-Moya, are proposing to use their expertise in plant biotechnology and virology, respectively, to produce SARS-CoV-2 antigens that could be used as vaccines. Coca and López-Moya propose to experiment with different expression systems deriving from plants and they have assembled a team with colleagues from other research centres (CNB, IBMCP, CEBAS) which includes an immunology expert in coronavirus that would perform the validation studies in mice and in cell cultures.



Nicotiana benthamiana is one the plants that can be used as a biofactory (Poto credit: CRAG).

Humans have relied on plants to cure diseases since ancient times. Modern pharmacotherapy includes many drugs whose active compounds were initially discovered in plants, and wild plants are still under investigation in the hope to find new bioactive compounds. In this sense, the ability of plants to synthesize a wide range of molecules is well known.

Thanks to the modern biotechnological tools, nowadays researchers can engineer plants to produce other compounds of interest such as antimicrobials. In 2019, María Coca, together with the expert on plant viruses from the IBMCP José Antonio Darós, already demonstrated that they can produce active antifungal compounds in *Nicotiana benthamiana* plants. To do so, they engineered a plant virus to produce antifungal proteins inside the plant leaves. This same strategy could be now used to produce SARS-CoV-2 antigens, not only in *N. benthamiana*, but also in lettuce plants.

“Once the system is developed and validated, it would be very easy to implement it for antigen production”, explains López-Moya. “With its adaptation to lettuce, we could even test for oral immunisation”, adds Coca.

Among many other advantages, it is worth noting that plants can be grown easily in developing countries that lack sophisticated protein production methods, therefore contributing with large-scale solutions to this global crisis.

CRAG researchers have experience also in the adaptation of plant-derived technologies to other platforms that can be adapted for the production of SARS-CoV-2 antigens, such as fast-growing yeast cultures where they have successfully produced antifungal compounds. With these approaches, SARS-CoV-2 antigens could be produced in a matter of days at industrial scales.

Related to this, in collaboration with the biotechnology company Vytrus biotech, these CRAG researchers are currently engaged in pushing the limits of the technology to adapt natural plant properties to enhance the immunogenic response and facilitate antigen stability and delivery.

OBITUARY OF PROF. DR. SHAHINA FAYYAZ, 1959-2020

PROF. DR. MANZOOR HUSSAIN SOOMRO, PRESIDENT PSN/ CHIEF EDITOR OF PAKISTAN JOURNAL OF NEMATOLOGY (PJN)

It is with intense feeling of grief to write that 20 March 2020 was the fateful day when my very dear family friend, long standing professional colleague and an eminent Nematologist of Pakistan, Meritorious Professor Dr. Shahina Fayyaz breathed her last and left for her eternal abode- “Indeed, to God we belong and to Him we shall return!” She was suffering from a lung ailment for a few months.

Professor Shahina Fayyaz was born on 4 April 1959 in Karachi-Pakistan. She served the National Nematological Research Centre (NNRC) for a long 38 years with utmost dedication and enthusiasm. She played a key role in developing and strengthening the NNRC which led to its recognition by the FAO-UN as the Centre of Excellence in Nematode Taxonomy in the Near East Region in 1992. The Centre gained ISO Certification 9001:2015 for Diagnostic Services and Educational Programs in Nematology under her leadership.



Dr. Shahina did her M. Sc. (Plant Pathology) in 1980 at the Dept of Botany, University of Karachi, Pakistan and joined the NNRC's original team as Research Fellow in 1981. She was appointed as Research Officer in the PL-480 project in 1982 and was selected as Scientific Officer in the Centre in 1988. She earned her Ph. D. from the University of Karachi in 1989 under the supervision of Dr. M. A. Maqbool. Shahina became Senior Scientific Officer in 2000 and began to lead the Centre as In-charge in 2002 after the retirement of her mentor/Director, Dr. Maqbool; she was appointed as Director of NNRC in 2003. In 2009, she was appointed as full professor and in recognition of her contributions, she was elevated as Meritorious Professor in 2013. She retired as Director of NNRC and as an accomplished professional nematologist on 3 April 2019, though continued supervision of her Ph.D. students till her death.

Dr. Shahina Fayyaz had established herself as very accomplished researcher and had won & undertaken 33 research projects as Principal Investigator (20 projects) and as Co-PI (13 projects) funded by various agencies like; International Foundation for Science (IFS), Pakistan Science Foundation (PSF), Pakistan Agricultural Research Council- (PARC), Higher Education Commission (HEC) of Pakistan and World Wide Fund for Nature, Pakistan (WWF-P). She also won the European Commission's post-doctoral fellowship for research at CAB International labs at St. Albans in the United Kingdom. She pioneered research on entomopathogenic nematodes (EPN) in Pakistan and added a state of the art EPN laboratory at the NNRC. She obtained a US patent and 17 Pakistan national industrial patents on EPN techniques and EPN use as bio-pesticides. She published over 200 research papers in peer reviewed journals of international repute; besides numerous books, booklets and proceedings. Professor Shahina had been a leader and organiser of various conferences and capacity building workshops in the field of Plant and Insect Nematology. Prof. Shahina was the Secretary General of Pakistan Society of Nematologists (PSN) and Managing Editor of Pakistan Journal of Nematology (PJN) published by PSN till her departure. She was the winner of the competitive “Dr. Z. A. Hashmi R&D Gold Medal” of Pakistan Science Foundation in 2013 and also served as Member of the Technical Committees and Board of Trustees of the Foundation.

Her rather early departure from this world is a great loss for all of us- her friends, colleagues & students, farmers and anyone who has had a privilege of knowing her. But above all, the greatest loss is to her husband Engr. Bilal Ahmed, her son Mr. M. Rafe Bilal (who is still pursuing his bachelor degree) and her siblings, who we all sympathise with.

PROMISING PRACTICES FOR ADDRESSING THE UNDERREPRESENTATION OF WOMEN IN SCIENCE, ENGINEERING, AND MEDICINE

Careers in science, engineering, and medicine offer opportunities to advance knowledge, contribute to the well-being of communities, and support the security, prosperity, and health of the US. But many women do not pursue or persist in these careers, or advance to leadership positions - not because they lack the talent or aspirations, but because they face barriers, including: implicit and explicit bias; sexual harassment; unequal access to funding and resources; pay inequity; higher teaching and advising loads; and fewer speaking invitations, among others.

There are consequences from this underrepresentation of women for the nation as well: a labor shortage in many science, engineering, and medical professions that cannot be filled unless institutions and organisations recruit from a broad and diverse talent pool; lost opportunities for innovation and economic gain; and lost talent as a result of discrimination, unconscious bias, and sexual harassment.

'Promising Practices for Addressing the Underrepresentation of Women in Science, Engineering, and Medicine' reviews and synthesises existing research on policies, practices, programs, and other interventions for improving the recruitment, retention, and sustained advancement into leadership roles of women in these disciplines. This report makes actionable recommendations to leverage change and drive swift, coordinated improvements to the systems of education, research, and employment in order to improve both the representation and leadership of women.

[Download free PDF report.](#)

Inspired by the United Nations declaration of 2020 as the 'International Year of Plant Health,' the American Phytopathological Society created [Plantopia podcast series](#). It is aimed at the general public and explains how protecting plant health can ensure a sustainable future. The podcast series is hosted by David Gadoury.

Three episodes have been aired during April 2020 which include:

- Arms Race Part 1: Ug99
- Arms Race Part 2: AI + Cassava
- The New American Chestnut



CURRENT VACANCIES

No current vacancies.

ACKNOWLEDGEMENTS

Thanks to Maria Lodovica Gullino, Grahame Jackson, Greg Johnson, Jan Leach, Lluís Palou, Serge Savary, Joe Smilanick, and Manzoor Hussain Soomro for contributions.

COMING EVENTS

IX International Postharvest Symposium

Postponed – date to be announced

Rotorua, New Zealand

Website: scienceevents.co.nz/postharvest2020

Plant Health 2020 – APS Annual Meeting

8 August - 12 August, 2020

Denver, Colorado, USA

Website:

www.apsnet.org/meetings/annual/planthealth2020/Pages/default.aspx

International Seed Testing Association Seed Health Workshop: Seed health methods to detect fungi, bacteria and viruses

31 August - 4 September, 2020

Pretoria, South Africa

Website: www.seedtest.org/en/event-detail---0--0--0--111.html

4th International Conference on Global Food Security

20 September - 23 September, 2020

Montpellier, France

Website: www.globalfoodsecurityconference.com

International Plant Health Conference “Protecting Plant Health in a changing world”

5 October - 8 October, 2020

Paasitorni Conference Centre, Helsinki, Finland

Website: www.fao.org/plant-health-2020/events/events-detail/en/c/1250609/

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

7th International Bacterial Wilt Symposium

3 November - 7 November, 2020

Montevideo, Uruguay

Website: 7ibws2020.fq.edu.uy

16th Congress of the Mediterranean Phytopathological Union

17 November - 20 November, 2020

Limassol, Cyprus

Website: cyprusconferences.org/mpu2020

11th Australasian Soilborne Diseases Symposium

24 November - 27 November, 2020

Cairns, Queensland, Australia

Website: asds2020.wyrd.currinda.com

7th International Conference of Pakistan Phytopathological Society

29 November - 1 December, 2020

University of Agriculture Faisalabad and Ayub

Agricultural Research Institute, Faisalabad, Pakistan

Website: pakps.com/web/7icpps

7th International Congress of Nematology

25 April - 30 April, 2020

Antibes Juan-les-Pins, France

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

Joint 18th International *Botrytis* Symposium & 17th International *Sclerotinia* Workshop

June, 2021

Avignon, France

Website: colloque.inra.fr/botrytis-sclerotinia-2020

4th International *Erwinia* Workshop

5 June - 6 June, 2021

Assisi, Italy

Website: www.icppb2020.com

**14th International Conference on Plant Pathogenic
Bacteria**

6 June - 11 June, 2021

Assisi, Italy

Website: www.icppb2020.com

**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

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