PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

ISPP NEWSLETTER

ISSUE 50 (6) JUNE 2020

Editor: Daniel Hüberli (**email**)

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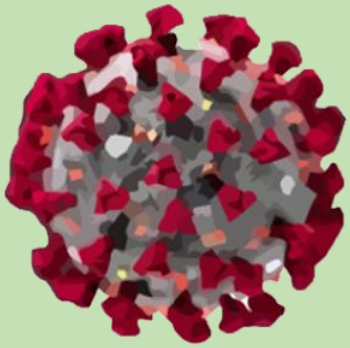
The International Society for Plant Pathology promotes the world-wide development of plant pathology and the dissemination of knowledge about plant diseases and plant health management

IN THIS ISSUE:

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 second month contains posts from Subhadeep Chatterjee, Santa Olga Cacciola, and Muhammad Ahmad Zeshan.

Subhadeep Chatterjee, Institute Centre for DNA Fingerprinting and Diagnostics, Hyderabad, India

Our Institute Centre for DNA Fingerprinting and Diagnostics (CDFD) is located in the Southern part of India in the city of Hyderabad which is also the second largest Information Technology hub in India. Since the lockdown was implemented from 23 March 2020, more than the scientist and investigators, I think the students are greatly impacted. Since all forms of transport, including traveling between different states of India were stopped, the students are confined in their hostel and could not return to their homes. For them the real challenge is to cope with mental health away from their family, friends and laboratory work and are confined to their respective rooms maintaining social distancing. We have constant chats and discussions with them online, however, all of their research activities including greenhouse work are severally affected. Particularly, it is very hard on final year students who are in the process of finishing manuscript work, final experiments and are looking for postdoctoral positions after thesis submission. Students in my laboratory are now concentrating on learning Bioinformatics tools such as structural modeling and structure function predictions using online tools which they can access from their hostel rooms.

Santa Olga Cacciola, University of Catania, Italy

"We decided to cope with COVID-19 by celebrating the IYPH 2020 with webinars organised by the Master's degree in 'Territorial, environmental and landscape protection', Deptartment of Agriculture, Food and Environment (Di3A), University of Catania, Italy. Specialists in the field of agri-environmental research and sustainability agreed to talk on: Use of microorganisms to improve crop productivity; Sustainable use of products for plant protection Decision Support Systems (DSS) in Agriculture 4.0; Phyto-extracts and their use for the health of plants and humans; Data Sharing and other Open Science Practices.

Webinars were designed mainly to reduce the inconvenience that this pandemic has created for students and to demonstrate the resilience that characterises Di3A, with

world-renowned guests dealing with plant health and the planet and the eco-sustainable and innovative management of crops.

In this scenario, it is crucial to be more aware of the principle that plants and their health are the engine of the planet and we must aim to enhance their production potential with an eco-sustainable approach to meet the growing food needs of the planet. Biosafety is a priority and if we cannot prevent global trade, we must still be prepared for rigorous controls with effective and shared diagnostic methods and with increasingly qualified technicians. If an alien parasite manifests itself, we must be able to contain it.

Register by emailing me, Prof. S.O. Cacciola.

MUHAMMAD AHMAD ZESHAN, UNIVERSITY OF SARGODHA, PAKISTAN

Our University is closed due to the wake of COVID-19 pandemic. We are taking online classes since 16 March 2020. The offered courses are Introductory Plant Pathology, Diseases of Field Crops, Ecology and Epidemiology of Plant Diseases, and Bio control of Plant Pathogens. A quarantine center has been established at our campus (College of Agriculture, University of Sargodha) and all lab activities have completely been halted. However, we are focusing on publication of research papers of already completed research.

POSTPONED AND VIRTUAL 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 changed to virtual meetings. 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.

- Plant Health 2020 – APS Annual Meeting, is now a fully virtual event.
- International Seed Testing Association Seed Health Workshop: Seed health methods to detect fungi, bacteria and viruses, has been postponed with date to be announced.
- 4th International Conference on Global Food Security, further postponed to 6-9 December 2020.

FOLLOW THE WEB CONFERENCE 'PLANT HEALTH, ONE HEALTH' ON 4TH JUNE AT 6.30 P.M. (CET)

ANDREA MASINO, ISPP BUSINESS MANAGER

The Festival Plant Health 2020 should had been the highlight of the Torino celebrations for the International Year of Plant Health (2020) proclaimed by the United Nations.

The current COVID-19 emergency forced us to modify the programme and to start with just a little appetizer of what the Festival will be in the next months. The network of over 30 subjects between institutions, bodies and companies in the Piedmont area is working for a better future.

The Festival Plant Health 2020 has been organised by Agroinnova (Centre of Competence of the University of Torino), with the patronage of the Piedmont Region, the City of Torino, the Italian Phytopathological Society (SIPaV), UNICEF Italy, the Italian Federation of Life Sciences (FISV), and the International Plant Protection Convention with the contribution of Iren and SMAT.

"It is still a difficult moment* - says Maria Lodovica Gullino - *but it is necessary to give a message of hope, and desire. We have seen in recent months how the concept of health needs to be addressed in a global way. This implies that the health of plants, as well as that of humans and animals, takes on a central role. This is why Plants are at the Center. Plant health starts with the scientific research and has impacts on our ecosystems: agricultural, urban, natural and social ones. I see many similarities between the problems caused by the current health emergency and the damage caused by plant diseases in the past, such as hunger and famine, and more recently, the significant economic damage. This is why it is important to let the public at large know more about plant health."

FESTIVAL PLANT HEALTH 2020

On 4 June, at 6.30 pm (CET), the Opening of the Festival Plant Health 2020 will still be held: a web conference on Lastampa.it and live on Facebook, moderated by the scientific journalist Piero Bianucci, titled "Plant health, One health". Ilaria Capua, Director of the One Health Center of Excellence, Jacqueline Fletcher and Maria Lodovica Gullino (guests already included in the initial program of the festival) will entertain a very broad and diversified audience on health, plants and the environment.

A positive way to start again. A re-start strongly based on research and care for the environment.

Follow the live feed and help plant pathology's role to spread around the world!

Follow the Festival:

- Website
- Facebook page
- Instagram profile

World Wide Directory of Plant Pathologists

The World Wide Directory of Plant Pathologists has been reinstated by the ISPP. The Directory is being hosted by the the American Phytopathological Society (APS).

Pathologists can add their details to the Directory at https://worldwidedirectory.apsnet.org and clicking on "Add Myself to the Directory."

The Directory is also fully searchable using various fields.

Plant Health 2020 is now a virtual meeting

LINDSEY DU TOIT, APS PRESIDENT

The American Phytophatological Society (APS) Annual Meeting, now Plant Health 2020 **Online**, is to be a fully virtual event that will provide online access to content related to this year's theme of, "Scientific Credibility: Changing the Climate." While we share your disappointment that we cannot meet in person in Denver, USA, as originally planned, going fully online gives us the exciting opportunity to connect with plant pathologists from all over the world who wouldn't otherwise be able to join us in person!

Our new, online format will still allow you access to the high-quality speakers, poster presentations, sponsors, and exhibitors that you've come to expect from our Plant Health annual meetings. We are also implementing virtual solutions for networking events, idea cafés, and one-on-one appointments so you can connect and hold valuable discussions with colleagues worldwide.

We realise that many of you have been awaiting registration information eagerly. We're happy to announce that registration will open on **15th June** with clarity regarding our online programming schedule and new ways you can participate. Please visit our Registration FAQ for answers to common questions about Plant Health 2020 Online.

NEW ANIMATED FILM MARKS INTERNATIONAL YEAR OF PLANT HEALTH 2020

RICHARD WYATT, CONNECTED NETWORK COMMUNICATIONS OFFICER

Diseases that devastate African communities are the focus of a brand new short animated film launched by The CONNECTED Virus Network, based at The Universities of Bristol and Newcastle, UK.

The network's focus is bringing together world-class researchers to find ways of tackling crop diseases, caused by plant viruses, which devastate food crops in Sub-Saharan Africa.

- Marking The International Year of Plant Health 2020, as designated by The United Nations General Assembly, the new two-minute film focuses on: how human activity spreads plant disease,
- the importance of diagnostic training to help people in the field address the challenges, and
- the role of The CONNECTED Virus Network in providing this training.

Julia Vaccina Makar and Kye Ottley, students from UWE Animation at The University of The West Of England, Bristol, UK, were commissioned by the CONNECTED Virus Network to make the short cartoon. They worked from a series of images and other information supplied by a number of researchers working in African countries.

CONNECTED Network Director, Prof. Gary Foster (University of Bristol, UK) explains: "With one specific virus currently at the forefront of most people's minds, it's important we remain aware of the devastating impact viruses of a different type have on food crops relied upon by millions of people in Sub-Saharan African countries."

"Few members of the public, or indeed governments, fully realise just how seriously plant diseases affect these communities. We hope this short animated film contributes towards a better understanding."

"We are grateful to students Julia and Kye, to Pereko Makgothi who provided the voiceover, and to the UWE Animation tutor team for this exciting collaboration."

The film can be viewed on: The CONNECTED Vimeo channel.

EUROPE'S BLINKERED RESISTANCE TO GENE EDITING IS A BLOW TO GOOD SCIENCE

RICHARD STRANGE, FORMER EDITOR-IN-CHIEF OF *FOOD SECURITY*

25 Oct 2018, The Times (Leader)

Food Block

EUROPE'S BLINKERED RESISTANCE TO GENE EDITING IS A BLOW TO GOOD SCIENCE

Food security is one of the burning issues of our time. By 2050 there will be an estimated ten billion mouths to feed. The climate is changing, becoming harsher in many regions, and the environment is suffering from toxic agricultural practices.

All this lends urgency to innovation in the way we farm our land. Africa, in particular, will depend on imaginative advances in increasing yields and shielding produce from infection. Yet the European Court of Justice has, in a fit of backward-looking protective zeal, declared that genetic editing must be bound by the very strict restraints that it imposes on all genetically modified foods. That may be a victory for environmentalists but it is a blow to Europe's biotech industry and a setback for scientists in Britain who have already started trials of gene-edited camelina crops, augmented with Omega-3 fish oils.

The dismay has spread across Europe, where more than 120 leading scientists are warning that the continent is in danger of becoming a research backwater. One of the latest breakthroughs in biotechnology is precision breeding, which can help farmers to minimise fertilisers and pesticides and lets them tailor crops to regional problems. Drought-resistant cost-efficient crops will not only save lives but also ease migration flows across sub-Saharan Africa. The small genome edits needed to produce such hardy crops are not some kind of Frankenstein invention. They are at least as safe as those resulting from conventional breeding.

European policymakers, in setting the bar too high before accepting innovation, do no service to consumers or to the environment. They stand in the face of responsible science. The exodus of scientists that is likely to result from the court's judgment should be a standing rebuke to Europe's outdated rules and its wider failure of imagination.

26 Oct 2018, The Times

Food Block

LETTER TO THE EDITOR

Sir, The European Court of Justice, in its banning of genetic editing of plants that could be used as food ("Food Block", leading article, Oct 25), has shown its inability to distinguish technique from product. Of course, any genetically modified crop plants should be tested rigorously for unwelcome properties, but to deny so many of the world's increasing population of their benefits, because of the way in which they were produced, is crass and, incidentally, does not promote the cause of Remainers.

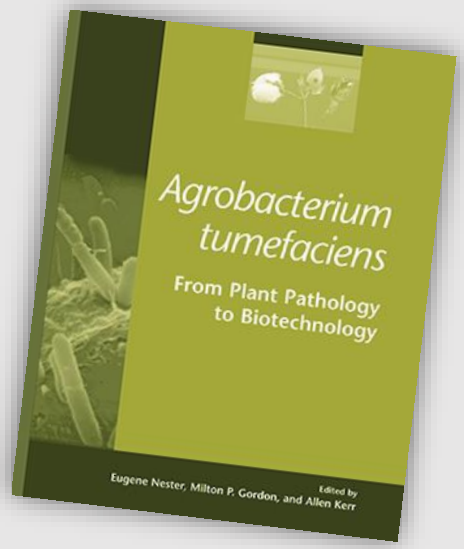
Richard Strange, Editor-in-Chief, Food Security, Department of Genetics, Evolution and Environment, University College London.

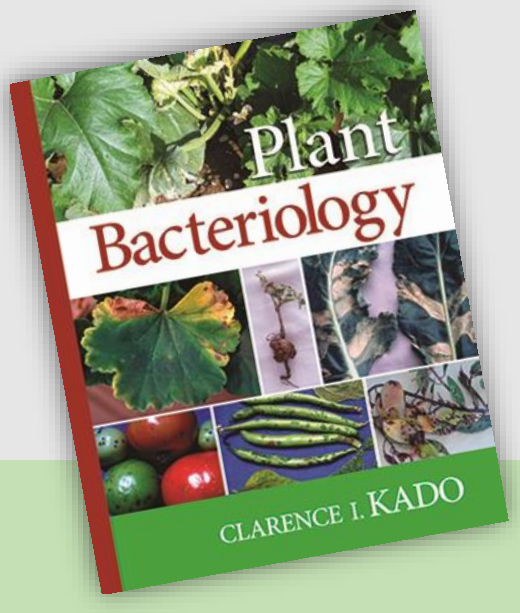
Note "Remainers" describes inhabitants of the UK who wished to remain in the European Union as opposed to Leavers who wished to leave. The latter won in a referendum and we have now officially left although negotiations about specifics are still in progress.

APS PRESS BOOK SALE

More than 100 titles are on sale. Save 50% on both classic and trending titles, including these bacteriology resources. Members save an additional 10%.

Go to APS Press sale.





CHASING MYRTLE RUST IN NEW ZEALAND

A paper by M. Toome-Heller *et al.* titled "Chasing myrtle rust in New Zealand: host range and distribution over the first year after invasion" was published in March 2020 by *Australasian Plant Pathology* (vol. 49, Issue 3, Pages 221-230). The abstract is as follows:-

After the detection of the myrtle rust pathogen, *Austropuccinia psidii*, in New Zealand, a biosecurity response was initiated, including a wide-spread surveillance programme. Through an intensive public awareness initiative, the general public was highly engaged in reporting myrtle rust infections and added significant value to the surveys by reporting first detections from most of the areas that are now known to be infected. During the first year of the response, *Austropuccinia psidii* was found in areas that were predicted to be at high infection risk in previous modelling studies. Significant surveillance resources were deployed to different parts of the country and the response surveillance team contributed to most of the new host species finds. Twenty -four species and six hybrids of Myrtaceae have been confirmed to be naturally infected by myrtle rust in New Zealand. Eleven of these are new host records globally and three were previously recorded only as experimental hosts.

Read paper.

ENGINEERS DEVELOP PRECISION INJECTION SYSTEM FOR PLANTS

DAVID L. CHANDLER, MASSACHUSETTS INSTITUTE OF TECHNOLOGY NEWS, 26 APRIL 2020

A microinjection device (red) is attached to a citrus tree, providing a way of injecting pesticide or other materials directly into the plant's circulatory system (Photo credit: MIT reseachers).

While the human world is reeling from one pandemic, there are several ongoing epidemics that affect crops and put global food production at risk. Oranges, olives, and bananas are already under threat in many areas due to diseases that affect plants' circulatory systems and that cannot be treated by applying pesticides.

A new method developed by engineers at Massachusetts Institute of Technology (MIT) may offer a starting point for delivering life-saving treatments to plants ravaged by such diseases.

These diseases are difficult to detect early and to treat, given the lack of precision tools to access plant vasculature to treat pathogens and to sample biomarkers. The MIT team decided to take some of the principles involved in precision medicine for humans and adapt them to develop plant-specific biomaterials and drug-delivery devices.

The method uses an array of microneedles made of a silk-based biomaterial to deliver nutrients, drugs, or other molecules to specific parts of the plant. The findings are described in the journal *Advanced Science*, in a paper by MIT professors Benedetto Marelli and Jing-Ke-Weng, graduate student Yunteng Cao, postdoc Eugene Lim at MIT, and postdoc Menglong Xu at the Whitehead Institute for Biomedical Research.

The microneedles, which the researchers call phytoinjectors, can be made in a variety of sizes and shapes, and can deliver material specifically to a plant's roots, stems, or leaves, or into its xylem (the vascular tissue involved in water transportation from roots to canopy) or phloem (the vascular tissue that circulates metabolites throughout the plant). In lab tests, the team used tomato and tobacco plants, but the system could be adapted to almost any crop, they say. The microneedles can not only deliver targeted payloads of molecules into the plant, but they can also be used to take samples from the plants for lab analysis.

Read more.

INNOVATIVE VIRUS RESEARCH MAY SAVE WHEAT AND OTHER CROPS

JULES BERNSTEIN, UNIVERSITY OF CALIFORNIA RIVERSIDE NEWS, 14 MAY 2020

University of California Riverside (UCR) scientists have solved a 20-year-old genetics puzzle that could result in ways to protect wheat, barley, and other crops from a devastating infection. Ayala Rao, professor of plant pathology and microbiology, has been studying Brome Mosaic virus for decades. Unlike some viruses, the genetic material of this virus is divided into three particles that until now were impossible to tell apart.

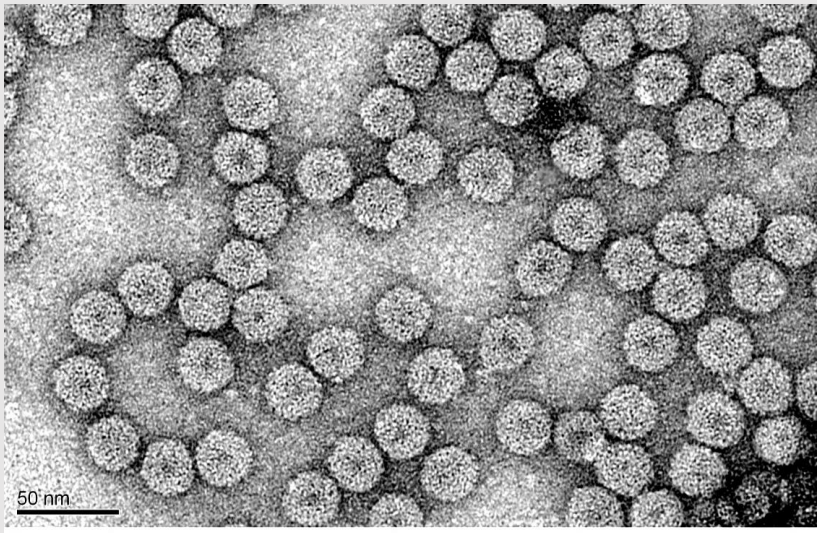
"Without a more definitive picture of the differences between these particles, we couldn't fully understand how they work together to initiate an infection that destroys food crops," Rao said. "Our approach to this problem has brought an important part of this picture into very clear focus."

A paper describing the work Rao's team did to differentiate these particles was recently published in the *Proceedings of the National Academy of Sciences*.

Inside each of the particles is a strand of RNA, the genetic material that controls the production of proteins. The proteins perform different tasks, some of which cause stunted growth, lesions, and ultimately death of infected host plants.

Two decades ago, scientists used the average of all three particles to create a basic description of their structure. In order to differentiate them, Rao first needed to separate them, and get them into their most pure form.

Using a genetic engineering technique, Rao's team disabled the pathogenic aspects of the virus and infused the viral genes with a host plant.



Visually indistinguishable particles of Brome Mosaic Virus (Photo credit: Ayala Rao, UCR).

"This bacterium inserts its genome into the plant's cells, similar to the way HIV inserts itself into human cells," Rao said. "We were then able to isolate the viral particles in the plants and determine their structure using electron microscopes and computer-based technology."

Now that one of the particles is fully mapped, it's clear the first two particles are more stable than the third.

"Once we alter the stability, we can manipulate how RNA gets released into the plants," Rao said. "We can make the third particle more stable, so it doesn't release RNA and the infection gets delayed."

Read more.

SCIENTISTS FOCUSED ON WHEAT HEALTH AWARDED

HOLLY DEMAREE-SADDLER, WORLD GRAIN, 13 MAY 2020

A total of six scientists focused on wheat health have been selected by the Borlaug Global Rust Initiative (BGRI) and the Delivering Genetic Gain in Wheat (DGGW) project to receive Jeanie Borlaug Laube Women in Triticum (WIT) awards. The WIT Early Career Award provides early career women working in wheat with the opportunity for additional training, mentorship and leadership opportunities. This year's 2020 WIT Early Careers winners include five women working in different regions around the world.

"The future of wheat science depends on innovative, enthusiastic researchers," said Maricelis Acevedo, director for science of the DGGW. "We are thrilled to honor these incredible scientists with a WIT award and continue the tradition of recognising the next generation of top-notch scientists and the people who mentor them.".

The 2020 WIT Early Career Awardees are Anna Backhaus (UK), Bharati Pandey (India), Yewubdar Ishetu Shewaye (Ethiopia), Paula Silva (Uruguay), and Peipeiu Zhang (China). The 2020 WIT Mentor is Evans Lagudah, from CSIRO, in Australia.

Anna Elizabeth Backhaus, from Germany, is a second-year PhD student at the John Innes Centre, where she focuses on the genetic network in control of early spike development and trying to understand how developmental decisions are encoded in the wheat genome. As part of her project, she is performing RNA-sequencing on sections of the young wheat spike using single cell technologies, and using this approach to identify genetic networks in control of spikelet number and grain number, two interlinked traits that control final plant yield. She is phenotyping these yield traits in the Watkins collection of about 800 wheat landraces to identify novel genes for spike traits.

Bharati Pandey, from India, is working as a scientific officer in the Bioscience Group, Bhabha Atomic Research Centre (BARC), Mumbai, Maharashtra, India. In 2015 she completed her doctoral degree from Birla Institute of Technology. In her doctoral thesis she worked on identifying and validating single nucleotide polymorphism (SNP) markers in abiotic stress-responsive genes and identifying stress-induced microRNAs in wheat. As a research fellow at the ICAR-Indian Institute of Wheat and Barley Research Institute (IIWBR), she contributed to wheat genomics research by identifying and analysing simple sequence repeat dynamics in three different rust fungi: stem, leaf and stripe rust. Pandey also was associated with the development and validation of microsatellite markers for wheat fungal pathogens, including Karnal bunt and loose smut. Pandey and her team have designed and developed an Indian wheat database that allows users to retrieve information about molecular markers linked to rust resistance genes.

Yewubdar Ishetu Shewaye, from Ethiopia, works as a wheat breeder for the Ethiopian Institute of Agricultural Research (EIAR), at the Debre Zeit Agricultural Research Center. Her main objectives are to empower the farming community in Ethiopia and other developing nations in the fight against wheat rust diseases, to reduce production costs for resource-poor farmers, and to increase yield. She completed her master's degree at Hawassa University, where she focused on the identification and characterisation of stripe rust resistance genes in wheat using conventional and molecular marker approaches. This work involved associating phenotypic data with genotypic data to identify rust resistance genes in wheat genotypes and identifying diagnostic molecular markers. Shewaye is interested in research areas such as screening and characterising wheat genotypes for rusts, association mapping for rust resistance, identifying diagnostic markers, understanding the mechanisms of host-pathogen interactions, selecting the best parent combinations for crosses to pyramid resistance genes, and mining wheat germplasm to discover more durable rust resistance genes that will be beneficial to the whole wheat breeding community.

Paula Silva, from Uruguay, received her master's degree from the School of Agronomy in Uruguay where she focused on breeding wheat for adult plant resistance against leaf rust. In 2015, while studying molecular tools for characterising wheat rust resistance genes at the Plant Breeding Institute of the University Silva was encouraged to pursue a PhD that led her to study genetics at Kansas State University with Jesse Poland. There, she works on breeding for barley yellow dwarf and blast resistance by characterising wild relatives of wheat to search for novel sources of resistance. In 2019, she was appointed at INIA to lead part of the disease resistance breeding program as well as coordinate the Precision Wheat Phenotypic Platform for Wheat Diseases in collaboration with CIMMYT.

Peipei Zhang, from China, completed her PhD degree in plant pathology in 2019 at Hebei Agricultural University. During her PhD from 2018-19, she studied under Dr. Sridhar Bhavani and Professor Caixia Lan in Ravi Singh's research group in

CIMMYT, participating in systematic breeding and research methods. For the last decade, Zhang's research has focused on wheat rust genetics, specifically on gene discovery and QTL mapping resistance to both leaf rust and stripe rust using bi-parental mapping populations, identification of leaf rust resistance genes in wheat cultivars using genome-wide association mapping, and map-based gene cloning for leaf rust resistance gene. Zhang has identified potentially new genes and the closely linked markers of these genes, which may be used in marker assisted selection and wheat breeding. Zhang hopes that she will be able to transform her research outcomes to benefit millions of smallholder farmers in China and other countries to reduce wheat loss due to rust diseases.

Another award given this year was the WIT Mentor Award. It was first awarded in 2011 and recognises the efforts of men and women who have played a significant role in shaping the careers of women working in wheat and demonstrated a commitment to increasing gender parity in agriculture. The 2020 WIT Mentor recipient is **Evans Lagudah**, a chief research scientist at CSIRO, Australia, a fellow of the Australian Academy of Science and an adjunct professor at the University of Sydney.

Lagudah's research interests cover basic studies on the molecular basis of multi-pathogen resistance genes, cloning of cereal immune receptors and genomic analyses/manipulation of targeted disease resistance traits. Among his research highlights are defining the molecular basis of adult plant rust resistance genes that represent novel classes of plant defense genes that function broadly in cereal crops against multiple pathogens. He continues to train and mentor PhD students, postdoctoral researchers and early- and mid-career scientists. He is a regular contributor to the West African Centre for Crop Improvement, which trains the next generation of plant breeders in sub-Saharan Africa. He is among the world's top 1% of most influential scientists as ranked by "Clarivate Analytics Highly Cited Researchers List," which identifies scientists that have demonstrated significant influence during the last decade.

The BGRI is an international initiative, based at Cornell University, that leads DGGW, a global project to improve wheat that is funded by the Bill & Melinda Gates Foundation and UK aid from the UK government.

CURRENT VACANCIES

Vegetable Crops and Small Farms Advisor, Riverside County-Coachella Valley Office, USA

The Cooperative Extension (CE) Advisor will develop and conduct research and extension programs focused on vegetable crop production in Riverside and Imperial Counties. Primary program areas include (1) the commercial vegetable crop production and (2) the small scale and minority crop production of the Coachella Valley, the Palo Verde Valley of Riverside County, and Imperial County as well as the limited vegetable production in Western Reverside. The CE Advisor will support growers and processors of such high-valued vegetable crops with problem solving, field consultations, and applied research. The goal of the research program should be to improve yields and production efficiency. As this region is the major supplier of cool-season vegetables in the winter, a focus on disease and pest management research is important to remain competitve on a statewide and national basis. To assure full consideration, application packets must be received by 26 June 2020. Further details about the position and how to apply are available in the PDF.

ACKNOWLEDGEMENTS

Thanks to Subhadeep Chatterjee, Tony Cooke, Grahame Jackson, Greg Johnson, Jan Leach, Santa Olga Cacciola, Andrea Masino, Richard Strange, Richard Wyatt, and Muhammad Ahmad Zeshan for contributions.

COMING EVENTS

IX International Postharvest Symposium
Postponed – date to be announced
Rotorua, New Zealand
Website: scienceevents.co.nz/postharvest2020

International Seed Testing Association Seed Health Workshop: Seed health methods to detect fungi, bacteria and viruses
Postponed – date to be announced
Pretoria, South Africa
Website: www.seedtest.org/en/event-detail---0--0--0--111.html

Plant Health 2020 – APS Annual Meeting
8 August - 12 August, 2020 (dates to be confirmed)
Virtual event
Website:
www.apsnet.org/meetings/annual/planthealth2020/Pages/default.aspx

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.w.yrd.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

4th International Conference on Global Food Security
6 December - 9 December, 2020
Montpellier, France
Website: www.globalfoodsecurityconference.com

7th International Congress of Nematology
25 April - 30 April, 2021
Antibes Juan-les-Pins, France
Website: www.alphavisa.com/icn/2020/index.php

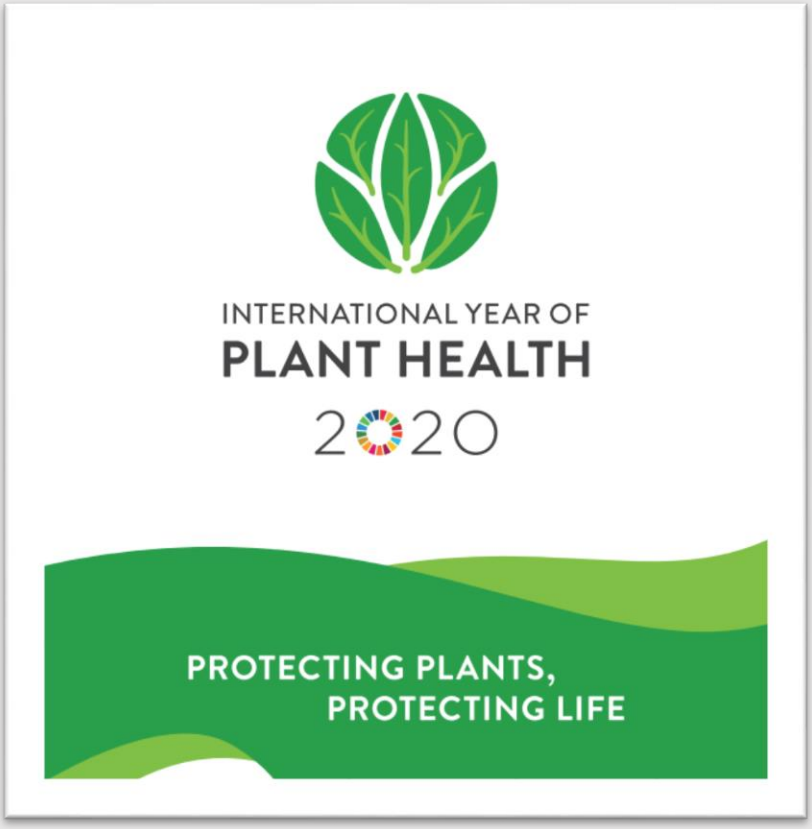
Joint 18th International *Botrytis* Symposium & 17th International *Sclerotinia* Workshop
June, 2021
Avignon, France
Website: colloque.inra.fr/botrytis-sclerotinia-2020

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

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

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

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

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

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