

INTERNATIONAL YEAR OF PLANT HEALTH

2020

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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) www.isppweb.org

### SERGE SAVARY, FOOD SECUIRTY EDITOR-IN-CHIEF

This is the new impact factor of *Food Security*, which is published by the ISPP. This number represents, roughly, a 65% increase of the impact factor of the journal compared to last year. Other figures are provided by Springer-Nature in its "Midyear Metrics Review":

### FOOD SECURITY'S METRICS REPORT

- 578915 Article Downloads (2020)
- 1041 Social Media Mentions (2020)
- 3.304 Impact Factor (2020)
- 4.403 5 Year Impact Factor (2020)

Lots of things go into these metrics. These numbers refer to the citations made last year (2020) of articles published in the previous 2 years (2019 and 2018). Elements that are over two years old therefore enter in these figures. What can be said is that the journal has entirely re-organised its Editorial Board, with a much stronger representation of (young) women:

- Sonia Akter, from the Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore, is in charge of the submission pertaining to micro-economics, gender, and household;
- Conny J.M. Almekinders, from Knowledge, Technology and Innovation, WUR, Wageningen, The Netherlands is in charge of submissions related to sociology, innovation, especially from the germplasm and plant breeding aspects;
- Jody Harris, from the World Vegetable Center, Thailand and Institute of Development Studies, UK, is in charge of submissions pertaining to nutrition;
- Lise Korsten, from the Department of Science and Technology/National Research Foundation, Centre of Excellence Food Security at the University of Pretoria, South Africa, is in charge of submissions dealing with value-chains and post-harvest;
- Reimund P. Rötter, Chair, Tropical Plant Production and Agrosystems Modelling (TROPAGS), Department of Crop Sciences, Georg-August-University Göttingen, Germany, has responsibility on

submissions on climate change, agronomy, and food production;

- Goedele Van den Broeck, the most recent addition to the Editorial Board, from the Earth and Life Institute, UCLouvain, Louvain-la-Neuve, Belgium, is now in charge of the macro-economics and policy aspects, including gender; she actually replaces
- **Derrill Watson,** from Tarleton State University, Stephenville, TX, USA, who has been with the journal since its inception, and who now has kindly accepted to be part of the Advisory Board.

Submission dealing with plant health, plant diseases and pests, and crop protection in direct relation with food security are directly handled by the Editor-in-Chief, Serge Savary.

Another, very important, element of the journal is that it has been possible to grow a stable buffer of some 30 accepted, online, articles, that can be mobilised for an issue at any time: this is a key improvement to ensure smooth operations.

*Food Security* operates in a world of competing journals towards the same types of keywords. A major asset for the success of the journal is its interdisciplinary culture, which most other journals do not have. Plant pathologists are welcome to consider *Food Security* for their next submission: what we do, as plant pathologists, often has a lot to do with food security, a growing challenge in these days of pandemics.

Performances of *Food Security* and new thinking on its Editorial Policy will be discussed soon, 7-9 March 2022, hopefully at the GB Pant University of Agriculture and Technology, one of the largest and most diverse Universities of India -- and we wish to thank our Indian colleagues for welcoming us.

## OBITUARY OF LUIS SEQUEIRA, 1927 - 2021

### EXERPT FROM CRESS FUNERAL SERVICE

Vale Luis Sequeira (September 1, 1927 - July 25, 2021), retired University of Wisconsin plant bacteriologist, passed away on Sunday 25 July aged 93. Luis was born on September 1, 1927, to Raul and Dora (Jenkins) Sequeira and was raised in San Jose, Costa Rica.

He attended Harvard University as an undergraduate and graduate school student, obtaining a Ph.D. in Biology at the age of 24. He returned to Costa Rica where he worked for the United Fruit Company for eight years, eventually becoming Director of their Research Station in Coto.

Luis moved to the United States in 1960, where he decided to return to academia, and ultimately obtained a position as a Professor of Plant Pathology and Bacteriology at the University of Wisconsin-Madison. At the UW he was responsible for an active research program in plant bacteriology producing numerous publications. He was active in the American Phytopathology Society as Editor, Editorin-Chief of their scientific journal and ultimately President of the Association. In recognition of his research accomplishments, he was elected to the National Academy of Sciences and was named the JC Walker Professor of Plant Pathology. He served as the Chief Scientist for the USDA Competitive Grants Office (1987 to 1988) and had a major influence on the distribution of funds for biotechnology research. He was especially proud of his many graduate students and being part of the world-renowned department.





## THE SEEDS THAT GIVE: RETIRED PLANT PATHOLOGIST DONATES TOMATO SEEDS TO DEVELOPING NATIONS

### WEST VIRGINIA UNIVERSITY, 19 JULY 2021

For 71 years, one West Virginia University plant pathologist has tinkered with the tomato, turning over multiple iterations resistant to blight and other vegetable diseases. Now the fruits of Mannon Gallegly's labour will be adored by tomato lovers across the world, particularly in developing countries marred by food supply issues. Gallegly is donating tomato seeds to the World Vegetable Center, a global nonprofit institute for vegetable research and development. The Center aims to reduce malnutrition and poverty in developing nations through improving production and consumption of vegetables.

developing the West Virginia '63, dubbed the "people's tomato," originally released in 1963. In 2017, he unveiled two new tomato varieties called



Gallegly, professor emeritus, is best known for Mannon Gallegly, professor emeritus of plant pathology, still tends to tomato plants and research at the WVU Organic Farm well into his 90s. Gallegly recently decided to donate some tomato seeds to the World Vegetable Center, which will distribute them to nations with food supply issues (Photo credit: WVU Photo, Brian Persinger).

the "West Virginia '17A - Mountaineer Pride" and the "West Virginia '17B - Mountaineer Delight."

"Dr. Gallegly's work demonstrates that our research and service often have impacts that last for many years beyond their conception and across many miles to improve the quality of life for everyone," said Vice President for Research Fred King. "Initially, his work was fully-engrained in the land-grant mission. Now his research has spread across the globe."

The seeds donated by Gallegly will be resistant to Septoria. In turn, the World Vegetable Center will use those seeds to develop more for developing countries. Specifically, Gallegly has tackled Septoria, a fungus that causes leaf spot diseases on vegetables, such as tomatoes, and is responsible for yield losses. Gallegly has backcrossed tomato varieties to develop one that's resistant to Septoria.

After graduating from the University of Wisconsin in 1949 with his doctorate in plant pathology, Gallegly began teaching as an assistant professor at WVU. He worked his way up to director of the Division of Plant and Soil Sciences, a post he held from 1970-1986. He received the AAAS Campbell Soup Award in 1960. He also received certificates of recognition from WVU for contributions to the state of West Virginia, and from the USDA Agricultural Research Service North Atlantic Region for assistance in staffing of the Appalachian Fruit Research Station and the Appalachian Soil and Water Resources Lab. In 2017, he was named a "Most Loyal" during the 70th annual Mountaineer Week, and, in 2018, was inducted into the WVU Order of Vandalia, the highest honor of service to the University.

#### International Society for Plant Pathology

## THE IMPACT OF CLIMATE CHANGE ON DISEASE IN WILD PLANT POPULATIONS

A review by Michael J. Jeger titled "The impact of climate change on disease in wild plant populations and communities" was published on 10 July 2021 by *Plant Pathology* (early view). The abstract is as follows:-

Disease in wild plant populations has received less attention from plant pathologists than diseases of managed plants in agriculture, horticulture, and plantation forestry. Plant ecologists, however, have contributed much to an understanding of how pathogens, other plantmicrobe interactions, and arthropods affect population structure and community assemblages of wild plants. Consequentially, this lack of attention has meant that the potential impacts of climate change on disease in wild plant populations are less appreciated than on major food crops, where modelling of such impacts is now well established. However, plant ecologists and soil microbiologists have long studied long-term climatic effects through a combination of observational studies and manipulative field experiments. Here, strategies are discussed to bring together these different perspectives into an integrated approach to address the future impacts of climate change on plant, environmental, and ecosystem health. The approach taken will be first to note the temporal and spatial scales that can be considered, ranging from microhabitats to whole biomes, review what is known about climate change impacts on natural vegetation, referring briefly to climate change impacts on crop diseases, and then what is known about impacts in wild populations at both the individual species and also the ecosystem level. The more general area of plant-soilmicrobe-pathogen interactions is covered as one of the more important areas where climate change may have much impact on plant health through indirect rather than direct effects. The special cases of introduced invasive plants and the connectedness of agricultural systems with the wider landscape are discussed.

Read paper.

## CAN WE 'VACCINATE' PLANTS TO BOOST THEIR IMMUNITY?

### JOHN HERLIHY, THE CONVERSATION

When you pick up the perfect apple in the supermarket it's easy to forget that plants get sick just like we do. A more realistic view might come from a walk outside during summer: try to find a leaf without a speck, spot or blemish. Those are the signs of a microscopic battle waged every day in and on plants.

Just like us, plants are covered in microbes and have evolved an immune system to protect against the dangerous ones. But our current agricultural system works against plants' natural immune defenses, by limiting the tools plants have to fight back and restricting evolution of new tools.

Pesticides provide us with most of the spotless produce in the grocery store. Even so, many apples still don't make it to market. About a third end up as juice or applesauce, because they don't meet the beauty standards of the American consumer. Forget about blemishes – Panama Disease threatens nearly all of the world's banana production, and the only effective treatment is toxic to the soil.

Scientists studying plant immunity are figuring out how to fight plant diseases without chemical pesticides. Some researchers plan to give our crops vaccines, just like the shots we administer to ourselves to fend off the flu or smallpox. My lab seeks to identify ways plants defend themselves in the wild. With that information, we can use modern breeding techniques and genetic engineering to strengthen the immunity of our crops and gardens.

Read more.

### **MODIFIED YEAST INHIBITS FUNGAL GROWTH IN PLANTS**

### HOLLY OBER, UC RIVERSIDE NEWS, 14 JULY 2021

About 70-80% of crop losses due to microbial diseases are caused by fungi. Fungicides are key weapons in agriculture's arsenal, but they pose environmental risks. Over time, fungi also develop a resistance to fungicides, leading growers on an endless quest for new and improved ways to combat fungal diseases.

The latest development takes advantage of a natural plant defense against fungus. In a paper published in *Biotechnology and Bioengineering*, engineers and plant pathologists at University of California (UC), Riverside, describe a way to engineer a protein that blocks fungi from breaking down cell walls, as well as a way to produce this protein in quantity for external application as a natural fungicide. The work could lead to a new way of controlling plant disease that reduces reliance on conventional fungicides.

To gain entrance into plant tissues, fungi produce enzymes that use catalytic reactions to break down tough cell walls. Among these are polygalacturonases, or PGs, but plants are not helpless against this attack. Plants produce proteins called PG-inhibiting proteins, or PGIPs, that slow catalysis. A group of UC Riverside researchers located the segment of DNA that tells the plant how to make PGIPs in common green beans. They inserted complete and partial segments into the genomes of baker's yeast to make the yeast produce PGIPs. The team used yeast instead of plants because yeast has no PGIPs of its own to muddy the experiment and grows quicker than plants.

After confirming the yeast was replicating with the new DNA, the researchers introduced it to cultures of *Botrytis cinerea*, a fungus that causes gray mold rot in peaches and other crops; and *Aspergillus niger*, which causes black mold on grapes and other fruits and vegetables. Yeast that had both the complete and partial DNA segments that coded for PGIP production successfully retarded fungal growth. The result indicates the yeast was producing enough PGIPs to make the method a potential candidate for large-scale production.

By tweaking the yeast a slightly different way, the researchers were able to make it exude PGIPs for external application. Previous studies have shown freeze drying naturally occurring microbes on apples, then reconstituting them in a solution and spraying them on crops, greatly reduces fungal disease and loss during shipping. The authors suggest that PGIP-expressing yeast could be used the same way. They caution, however, that because plants also form beneficial relationships with some fungi, future research needs to ensure plants only repel harmful fungi.



### LET CROP RESIDUES ROT IN THE FIELD - IT'S A CLIMATE WIN

### UNIVERSITY OF COPENHAGEN FACULTY OF SCIENCE NEWS, 12 JULY 2021

For quite some time, farmers and researchers have been focusing on how to bind carbon to soil. Doing so makes food crops more nutritious and increases yields. However, because carbon is converted into CO<sub>2</sub> when it enters the atmosphere, there is a significant climate benefit to capturing carbon in soil as well. Too much carbon finds its way into the atmosphere. Should we fail to reverse this unfortunate trend, we will fail to achieve the Paris Agreement's goal of reducing greenhouse gas emissions by 40 percent by 2030, according to CONCITO, Denmark's Green Think Tank.



One of the researchers analyzing plant residues (Photo credit: Carsten W. Müller).

As such, it is important to find new ways of sequestering carbon in soil. This is where a team of researchers from the University of Copenhagen and the Technical University of Munich enter the picture. In their new study, they argue for the potential of simply allowing agricultural crop residues to rot in fields. "Fragments of dead plants in soil are often considered as fast food for microbes and fungi. But our study demonstrates that plant residues actually play a more significant role in forming and sequestering carbon in soil than what was once thought," explains Kristina Witzgall, a PhD Candidate at the Technical University of Munich and the study's lead author.

In the past, researchers mainly focused on carbon storage in the surfaces of minerals like clay. However, the new results demonstrate that plant residues themselves have the ability to store carbon, and perhaps for longer than once supposed. This is because a number of important processes take place directly upon the surface of these plant remains.

"We demonstrate that agricultural crop residues are absolutely central to carbon storage and that we should use them in a much more calculated way in the future. Plant residues make it possible for carbon, in all likelihood, to be stored in soil for roughly four times longer than if they aren't added," states Carsten Müller, the study's coauthor and an associate professor at the University of Copenhagen's Department of Geosciences and Natural Resource Management.

Read more.



## **EXPLORING A DYNAMIC SOIL INFORMATION SYSTEM**

As a living substrate, soil is critical to the function of Earth's geophysical and chemical properties. Soil also plays a major role in several human activities, including farming, forestry, and environmental remediation. Optimising those activities requires a clear understanding of different soils, their function, their composition and structure, and how they change over time and from place to place. Although the importance of soil to Earth's biogeochemical cycles and to human activities is recognized, the current systems in place for monitoring soil properties - including physical, chemical, and, biological characteristics - along with measures of soil loss through erosion, do not provide an accurate picture of changes in the soil resource over time. Such an understanding can only be developed by collecting comprehensive data about soils and the various factors that influence them in a way that can be updated regularly and made available to researchers and others who wish to understand soils and make decisions based on those data.



The National Academies of Sciences, Engineering, and Medicine convened key stakeholders in a workshop on 2-4 March 2021 to discuss the development of a dynamic soil information system. Workshop discussions explored possiblities to dynamically and accurately monitor soil resources nationally with the mutually supporting goals of (1) achieving a better understanding of causal influences on observed changes in soil and interactions of soil cycling of nutrients and gases with earth processes, and (2) providing accessible, useful, and actionable information to land managers and others. This publication summarises the presentation and discussion of the workshop.

### Download free PDF.

## CALL FOR BIDS TO HOST THE 13<sup>TH</sup> INTERNATIONAL CONGRESS OF PLANT PATHOLOGY, ICPP2028

Associated Societies of ISPP are invited to present bids to host the 13<sup>th</sup> International Congress of Plant Pathology in 2028. Traditionally the ICPP is held in August.

ISPP councillors are urged to consider and discuss this opportunity with their Society.

The deadline for receipt of bids is 31 August, 2021. They should be sent to the Business Manager of ISPP, with c.c. to the Secretary ISPP, as e-mail attachments and/or Web addresses. Andrea Masino Business Manager, International Society for Plant Pathology <u>business.manager@isppweb.org</u>

Dr Brenda Wingfield Secretary-General, International Society for Plant Pathology <u>ispp.secretary@isppweb.org</u>

If a Society is considering a bid for the 13<sup>th</sup> International Congress of Plant Pathology, 2028, please read the bid and congress guidelines and requirements carefully. They can be <u>accessed here</u>.

## OBITUARY OF KEN HORST, 1936-2021

### MAGDALEN LINDEBERG, CORNELL CHRONICLE, 12 JULY 2021

Ken Horst, professor emeritus of plant pathology who was best known for his research on diseases of ornamental crops, died 9 June 2021 in Ithaca. He was 85.

Horst received his bachelor 's degree in plant science from Ohio University in 1957. After earning a Ph.D. in plant pathology from the Ohio State University in 1962, he served as director of the plant pathology laboratory at Yoder Brothers Inc. in Barberton, Ohio. In 1968 he was appointed assistant professor of plant pathology at Cornell, where he continued his research on the diseases of ornamental crops. He was promoted to full professor in 1980.

"Ken was a fantastically versatile floriculture pathologist, with his academic knowledge wellenriched by experience in industry before he came to Cornell," said Margery Daughtrey, senior extension associate at the Long Island Horticulture and Research and Extension Center. "His contributions to documenting floriculture pathology were immense, of in the areas diseases particularly of chrysanthemum, roses and geraniums, with a specialisation in virus and phytoplasmal diseases."

In addition to his research, teaching and extension responsibilities, Horst authored and co-authored more than 230 articles, books and book chapters.

"Perhaps his greatest contribution was to pick up the torch of Cynthia Westcott [Ph.D. '32], author of the "Plant Disease Handbook," and write the fourth, fifth, sixth and seventh editions" of the publication, Daughtrey said.

In addition to this encyclopedic reference for gardeners, diagnosticians and ornamentals pathologists, Horst authored the first editions of the "Compendium of Rose Diseases" and the



"Compendium of Chrysanthemum Diseases," as well as the second edition of the "Compendium of Rose Diseases and Pests."

After 30 years with Cornell, Horst retired and started a private research company, H&I Agritech, with his longtime collaborator, Herb Israel. H&I Agritech was supported by a grant from the Church and Dwight Company – a major American manufacturer of household products – and focused on development of environmentally safe pesticides for disease and pest control. He received many patents for organic disease control agents and served as a consultant nationally and internationally to commercial plant industries.

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No current vacancies.

### **ACKNOWLEDGEMENTS**

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



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## **COMING EVENTS**

### 7<sup>th</sup> International Conference of Pakistan

Phytopathological Society 17 October - 20 October, 2021 University of Agriculture Faisalabad and Ayub Agricultural Research Institute, Faisalabad, Pakistan Website: <u>7icpps.pakps.com</u>

### Association of Applied Biologists Virtual Conference - Thinking differently about soilborne disease management 10 November, 2021 Website: web.cvent.com/event/adc5a4f6-0657-496b-

<u>bb81-a1bed45e7d7c/summary</u>

#### Australasian Plant Pathology Society Conference – Staying Connected for Plant Health 23 November - 26 November, 2021 Online conference

Website: appsconference.com.au/home

### International Plant & Animal Genome XXIX

8 January -12 January, 2022 San Diego, California, USA Website: <u>www.intlpag.org/2021/</u>

### 10<sup>th</sup> International IPM Symposium

28 February - 3 March, 2022 Denver, Colorado, USA Website: <u>ipmsymposium.org/2021</u>

### 16th Congress of the Mediterranean

Phytopathological Union 4 April - 8 April, 2022 Limassol, Cyprus Website: <u>https://cyprusconferences.org/mpu2022/</u>

### 7th International Congress of Nematology

1 May - 6 May, 2022 Antibes Juan-les-Pins, France Website: <u>www.alphavisa.com/icn/2020/index.php</u>

#### International Plant Health Conference "Protecting Plant Health in a Changing World"

Week of 12 May 2022 Location to be advised Website: <u>www.fao.org/plant-health-2020/events/events-</u> <u>detail/en/c/1250609/</u>

### 4<sup>th</sup> International *Erwinia* Workshop 2 July - 3 July, 2022

Assisi, Italy Website: <u>www.icppb2020.com</u>

### 14<sup>th</sup> International Conference on Plant Pathogenic Bacteria 3 July - 8 July, 2022 Assisi, Italy Website: <u>www.icppb2020.com</u>

#### 12th International Workshop on Grapevine Trunk Diseases (ICGTD12)

7 July - 12 July, 2022 Mikulov, Czech Republic Website: <u>ucanr.edu/sites/ICGTD/Workshops\_559/</u>

### International Phytobiomes Conference 2022 13 September - 15 September, 2022

Denver, Colorado, USA Website: <u>phytobiomesconference.org/</u>

### **13**<sup>th</sup> **Arab Congress of Plant Protection** 16 October - 21 October, 2022

Le Royal Hotel, Hammamat, Tunisia Contact: Dr. Asma Jajar, Chairperson of Organising Committee <u>info@acpp-aspp.com</u> Website: <u>acpp-aspp.com</u>

11<sup>th</sup> Australasian Soilborne Diseases Symposium Mid-late 2022 Cairns, Queensland, Australia



XX International Plant Protection Congress 10 June - 15 June, 2023 Athens, Greece Website: <u>www.ippcathens2023.gr</u>

**12<sup>th</sup> International Congress of Plant Pathology (ICPP2023)** 20 August - 25 August, 2023 Lyon, France

Website: <u>www.icpp2023.org</u>

9th ISHS International Postharvest Symposium 11 November – 15 November, 2024 Rotorua, New Zealand Website: <u>scienceevents.co.nz/postharvest2024</u>





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## 12<sup>th</sup> INTERNATIONAL CONGRESS ON PLANT PATHOLOGY



ONE HEALTH for all plants, crops and trees



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ICPP

# 20-25 August, France

The International Society for Plant Pathology & the French Phytopathological Society

www.icpp2023.org

ISPP INTERNATIONAL SOCIE

### 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 <u>Privacy Information</u> <u>Notice</u> 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



