International Society for Plant Pathology

ISPP Newsletter 48 (11) November 2018
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In this issue:

We are present on

Reminder about the ISPP Logo Survey

Have your say about the ISPP logo in this short 90 second. survey. It will close on 11th November. The results from the survey will be published in the December issue of the ISPP Newsletter.

START NOW SHARE

(Andrea Masino, ISPP Business Manager)

Mathews Paret elected as Treasurer on the ISPP Executive Committee

Mathews Paret was elected as ISPP Treasurer to replace Zamir Punja during the Councillor meeting at ICPP2018 in Boston, USA. We thank Zamir for his efforts and wish him all the best.

Dr. Paret completed his B.Sc Agriculture in 1999 and M.Sc Horticulture in 2001 from Allahabad Agricultural Institute, India; and his Ph.D in Tropical Plant Pathology in 2009 from the University of Hawaii at Manoa. His Post-doctoral Fellowship was at the University of Florida. Dr. Paret joined as a faculty in the Plant Pathology Department of the University of Florida in 2010, and is currently an Associate Professor of Plant Pathology located at the North Florida Research and Education Center. His research areas can be seen in the plant pathology department page (https://plantpath.ifas.ufl.edu/u-scout/paret-lab.html). Dr. Paret also has an active international research and agricultural development program with the goal of improving food security and enhancing the livelihoods of vegetable farmers in Benin, Togo and Niger in West Africa. Further details on his career are available on the APS page.

Mathews Paret's 'vision' for serving on ISPP Executive as treasurer

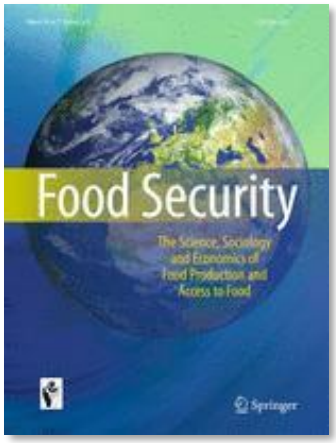
Thank you to the ISPP Council for the faith, and the responsibility assigned to me as the new Treasurer of the Society. Also, I would like to thank the outgoing executive members, Dr. Thomas Evans from the University of Delaware, USA and Dr. Zamir Punja from the Simon Fraser University, Canada for the significant inputs provided to me as I start in this new role.

As the new ISPP treasurer my vision is the continued streamlining of the ISPP short-term and long-term revenue and expenditures to the best possible situation through consultations with banking professionals and in discussions and approval of the executive committee is critical. This stems from my shared vision with the executive committee that individual memberships, associated society memberships and, most importantly, the ISPP journal Food Security will continue to be the backbone and revenue source for the sustainability of our truly global society. My vision for budget management of ISPP is to maintain conservative expenditures at the same time highlighting and establishing opportunities for judicious and productive investments for sustaining and enhancing the ISPPs revenue portfolio.

A strong interest that I have is the continued and stronger engagement with associated international societies and advocacy in supporting plant pathologists from countries with limited representation with individual memberships or society membership to be more active in ISPP in the coming years. I believe this will, in the long-term, reflect in the engagement and diversity of member countries attending and contributing to ISPP as we prepare for ICPP Lyon, France in 2023. I am looking forward to working with you all, and you can contact me with any questions or suggestions at paret@ufl.edu.

Why rational argument fails the genetic modification (GM) debate

A paper by Lucy Mallinson *et al*. titled "Why rational argument fails the genetic modification (GM) debate" was published in October 2018 by *Food Security*. The abstract is as follows:-



Genetic modification (GM) of crops provides a methodology for the agricultural improvements needed to deliver global food security. However, public opposition to GM-food is great. The debate has tended to risk communication, but here we show through study of a large nationally representative sample of British adults that public acceptance of GM-food has social, cultural and affective contexts. Regression models showed that metaphysical beliefs about the sanctity of food and an emotional dislike of GM-food were primary negative determinants, while belief in the value of science and favourable evaluation of the benefits-to-risks of GM-food were secondary positive determinants. Although institutional trust, general knowledge of the GM-food debate and belief in the eco-friendliness of GM-food were all associated with acceptance, their influence was minor. While a belief in the sanctity of food had a direct inverse effect on GM acceptance, belief in the value of science was largely mediated through favourable perception of benefits-to-risks. Furthermore, segmentation analysis demonstrated that anxiety about GM-food had social and cultural antecedents, with white men being least anxious and older vegetarian women being most anxious. Rational argument alone about the risks and benefits of GM-food is unlikely to change public perceptions of GM-technology.

Read paper.

V International Symposium on Postharvest Pathology, Liège Belgium, 19-24 May 2019

The demand for safe and nutritious produce is rapidly growing as the world population increases, and yields are threatened by global climate change. Preserving the quality and preventing losses and waste of harvested products represents a very significant approach to address the challenge of providing and maintaining an adequate food supply.

The V International Symposium on Postharvest Pathology: Sustainable Approaches to Managing Postharvest Pathogens will be held in Liège, Belgium, during 19-24 May, 2019. The symposium is under the aegis of the Postharvest Pathology Subject Matter Committee of International Society of Plant Pathology (ISPP) and the International Society for Horticultural Sciences (ISHS). The upcoming symposium in Liège will explore a wide-range of recent advances in postharvest pathology and disease control. The symposium will facilitate the exchange of knowledge, methods, technologies, and ideas among scientists, industry, producers, and retailers in order to develop effective, appropriate, and commercially-viable approaches to postharvest disease management of fruit and vegetables that will help to prevent the loss of vital food resources in all of the vastly different types of production chains and markets

The themes to be included in the symposium are:

- Consumer demand, food losses and marketing strategies.
- Postharvest disease management: conventional control strategies.
- Alternative methods and new advances to control postharvest diseases.
- Innovative technologies related to postharvest pathology.
- Elucidation of host pathogen interactions/molecular exploration of host-pathogen interactions.
- Microbiota community in postharvest.
- Advances and applied research in handling, packaging, transport, and distribution to reduce postharvest losses.

For more information, visit the symposium website. Deadline for abstract submission is 15 November, 2018!

Symposium convener: Prof. Haissam Jijakli, University of Liège, Belgium, mh.jijakli@uliege.be

(Samir Droby, Chair of Postharvest Pathology Subject Matter Committee of ISPP)

11th International Workshop on Grapevine Trunk Diseases, Penticton Canada, 7-12 July 2019

On behalf of the local organising committee, it is with great excitement we announce the 11th International Workshop on Grapevine Trunk Diseases. The workshop will be held in the city of Penticton, British Columbia in Canada during 7-12 July, 2019. Further information, including deadlines for abstract submission, registration and booking of accommodation will be published on the workshop website.

(Laura Mugnai, Chair of Grapevine Trunk Diseases Subject Matter Committee of ISPP)

International Workshop on the Fruit Microbiome: A New Frontier, Shepherdstown USA, 3-6 September 2019

Rhizosphere research has made tremendous advances in discovering and developing microbiome-based products that can substantially enhance crop growth, stress and disease resistance, and ultimately yield. An understanding of the role of the microbiome and its impact on postharvest disease and fruit physiology, however, is lacking. The workshop will explore microbiome research in relation to the suppression of postharvest decay organisms, but also explore the potential use of epiphytic and endophytic microorganisms to minimise and suppress the colonisation of harvested produce by foodborne human pathogens, as well in the potential impact of the microbiome on fruit physiology and tolerance to abiotic stresses. A portion of the workshop will be dedicated to the use of microbiome data to develop products that are based on the use of microbial consortia supplemented with plant-derived products, such as protein hydrolysates, to manipulate both fruit physiology and postharvest diseases. Sections of the workshop will also focus on advances in the methodology used to study microbial communities and the challenges associated with analysing microbial communities. Topics will include: Microbiome Theory and Concepts; Challenges and Tools of Microbiome Research; Comparison of the Phylloplane, Rhizosphere, and Carposphere Microbiome; The Postharvest Microbiome; and The Development of Microbial Consortia.

The venue of the workshop is the National Conservation Center (NCTC), Shepherdstown, West Virginia, USA, located about 1.5 h from Dulles International Airport, outside of Washington D.C., and offers a beautiful country setting along the Potomac River, just outside of historic Shepherdstown. Meals and lodging are all provided at the NCTC, offering the opportunity for lots of interactive discussion.

For additional information contact Michael Wisniewski (michael.wisniewski@ars.usda.gov), Samir Droby (samird@volcani.agri.gov.il), or view the workshop website http://www.bard-isus.com/fruitmicrobiome.html.

(Samir Droby, Chair of Postharvest Pathology Subject Matter Committee of ISPP)

Publications from the Council for Agricultural Science and Technology

Two recent publications from the Council for Agricultural Science and Technology (CAST) may be of interest to ISPP members. CAST is a non-profit organisation composed of scientific societies and many individual, student, company, non-profit, and associate society members.

Food loss and waste

Led by CAST Task Force Chair Zhengxia Dou, the authors of this issue paper provide a critical overview of the United States' food loss and waste through an objective, balanced, and data-proven approach. Research on this specific topic presented a few challenges as no single comprehensive estimate of food loss and waste data exists in the United States; however, work completed in this area provides important information and insights helpful to understanding the problems, challenges, and directions for significant solutions.

This issue paper addresses the subject by examining these key topics:

- Describes the magnitude of the problem,
- Discusses the three fundamental resources for primary food production,
- Draws attention to why food loss and waste occurs based on the interacting influence of psychological, social, cultural, and economic factors,
- Describes major actions that are being taken across the nation to decrease food loss and waste,
- Observes existing data on the quantity of food waste prevention, recovery, and recycling, and
- Presents an interpretative and critical analysis concerning the United States' reduction goal, possible technological innovations, and the influence of consumer food behaviours

Looking ahead, feeding 9 billion people cannot be addressed by pushing for greater production alone; sustainable consumption and decreasing food waste must be incorporated into the food security and sustainability agenda. Wasting less to feed more offers multifaceted benefits of combating hunger, enhancing food availability, improving resilience of food systems, and strengthening resource and environmental performance.

The authors conclude the following: "Substantially decreasing food waste is attainable. Opportunities exist throughout the supply chain. Meaningful progress can be made household to household, business to business, and step by step, as long as people are willing to take actions to change wasteful lifestyles and society enables such change with necessary support in terms of policy, research, innovation, and technology development."

This CAST Issue Paper (IP 62) and its companion Ag quickCAST are available online at the CAST website, along with the YouTube presentation.

Genome editing in agriculture: Methods, applications, and governance

Led by CAST Task Force Chair Adam J. Bogdanove, the authors of this issue paper focused their attention on a tool that can increase the positive impacts of plant and animal breeding on human welfare and sustainability. Genome editing is a process used to make precisely targeted changes in the DNA (deoxyribonucleic acid) of living cells and organisms. Due to recent advances, this method is widely applicable and offers the opportunity to rapidly advance basic and applied biology.

This issue paper addresses the concept by explaining:

- How genome editing is performed,
- What types of edits can be made,
- How the process relates to traditional breeding and other means of genetic modification,
- What potential limitations may arise with this approach, and
- What current factors affect the governance of gene editing.

Although much remains to be learned, it is clear that successful development of genome editing for crop and livestock improvement will benefit from science-informed, value-attentive regulation that promotes both innovation and transparency. The authors of this paper intended for it to be a resource in providing a conceptual and knowledge-based foundation for regulatory agencies, policymakers, private and public research institutions, industry, and the general public.

This CAST Issue Paper (IP 60) and its companion Ag quickCAST are available online at the CAST website, along with the YouTube presentation.

Learn how to diagnose pests and diseases in the field with PestSmart

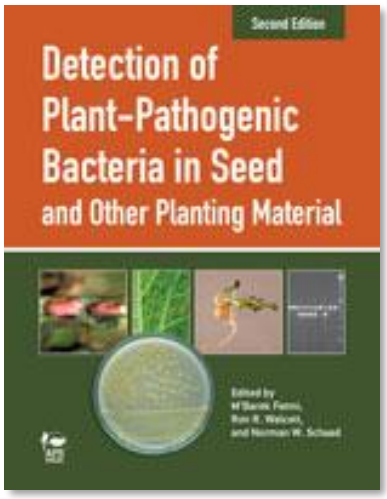
CABI has launched the first in its range of PestSmart eLearning courses: PestSmart Diagnostics. This course covers identification of crop diseases from major pathogens and pest groups, and enables learners to go out directly into the field and apply their learning.

PestSmart Diagnostics focuses specifically on the skills and methodologies required for field-based diagnosis. It helps plant health practitioners and students to develop and improve their ability to recognise symptoms, relate them to causes, and to identify what is causing the problem. Containing high-resolution images, case studies and knowledge checks, it helps learners improve their knowledge through practical, independent learning.

The training includes the main pathogen groups as well as insect pests and nutrient deficiencies. The material that forms this package is derived from CABI's flagship programme, Plantwise, which takes a holistic International approach to pest diagnostics and management advice with national extension services. By digitising Plantwise material and providing a range of learning and practice tools in the PestSmart Diagnostics package, we aim to fast-track the field experience of plant health professionals and students by giving them CABI's wealth of field experience in a single course.

Detection of Plant-Pathogenic Bacteria in Seed and Other Planting Material – new book

Detection of Plant-Pathogenic Bacteria in Seed and Other Planting Material, Second Edition. 2017. M. Fatmi, R. R. Walcott, and N. W. Schaad (Eds.). APS Press, 372 p.



Plant bacterial diseases are a major factor in economic crop losses worldwide. The transportation and use of clean, pathogen-free seed and propagative material is the most vital step in controlling bacterial diseases, but this requires accurate, rapid, sensitive, and reliable pathogen detection.

The second edition of Detection of Plant-Pathogenic Bacteria in Seed and Other Planting Material, edited by M. Fatmi, R. R. Walcott, and N. W. Schaad, is an easy-to-use reference that describes and illustrates the latest methods for detecting a wide range of bacteria responsible for many of the world's most economically significant bacterial crop diseases.

Yet this book does more than describe and illustrate the use of real-time PCR, rapid PCR-based assays, and other methods for sensitive detection of bacteria in seed and propagative material. Its 48 chapters offer information on specific bacteria and the diseases they cause, describing symptoms, detailing their epidemiology, identifying strategies for disease management, and providing protocols for detection in thorough detail.

The second edition of this comprehensive reference, published more than 25 years after the first edition, is organised into four parts:

- General Seed Pathology
- Detection of Plant-Pathogenic Bacteria in Cereals, Grain, Legumes, Grasses, and Forage
- Detection of Plant-Pathogenic Bacteria in Vegetables
- Detection of Plant-Pathogenic Bacteria in Vegetatively Propagated Crops

In addition to serving as a vital resource for seed companies, quarantine operations, and diagnostic labs, this book is an excellent laboratory guide for classroom instruction. It can also help facilitate rapid technology transfer in developing countries, where opportunities to receive training in this important field are rare.

Visit APS Press to learn more about this book.

Breakthrough in search for resistant banana varieties to the lethal bacterial banana wilt disease

A team led by scientists from the International Institute of Tropical Agriculture (IITA) have announced a breakthrough in the search for banana varieties that are resistant to the lethal bacterial banana wilt disease, caused by *Xanthomonas campestris* pv. *musacearum*. This debunks the notion that all banana varieties are susceptible to the disease and opens the possibility of breeding resistant varieties.

The disease, which causes premature ripening and rotting of the fruits, wilting, and eventually death of the plant, has drastically affected the highland cooking banana production in East and Central Africa (ECA) and the food and income of millions of farmers. Until now, the scientific world believed that all banana varieties in the region, except for a wild-seeded banana called *Musa balbisiana*, were susceptible to the disease, which originated from Ethiopia and has now invaded all banana growing areas in the highlands of eastern and central Africa.

The team systematically screened the entire banana collection at IITA, Uganda, and identified 13 other sources of resistance next to *M. balbisiana*. Most importantly, several diploids derived from *Musa acuminate*, another wild banana, were identified and which are already part of the existing highland breeding program of IITA and NARO (National Agricultural Research Organisation, Uganda).

The discovery by the team led by Prof. Rony Swennen, Head of banana breeding; Dr George Mahuku, Senior Plant Pathologist for Eastern, Southern and Central Africa; and Dr Valentine Nakato, Plant Pathologist, was reported in the journal, Plant Pathology.

(International Institute of Tropical Agriculture News, 4 October 2018)

Genetically modified cotton could be human food source

The United States Department of Agriculture Animal and Plant Health Inspection Service has lifted the regulatory prohibition on cultivation by farmers of the genetically modified cotton plant, which was developed by Texas A&M University scientists. The cotton plant was genetically modified to make the cottonseed edible for people, a protein-packed potential new food source that could be especially useful in cotton-growing countries beset with malnutrition. However, cottonseed cannot be used as food for people or as animal feed yet in the United States because it lacks Food and Drug Administration approval.

Ordinary cottonseed is unfit for humans and many animals to eat because it contains high levels of gossypol, a toxic chemical. With financial help from a cotton industry group, scientists led by Texas A&M AgriLife Research plant biotechnologist Keerti Rathore used RNA interference technology to "silence" a gene, virtually eliminating gossypol from the cottonseed. They left gossypol at natural levels in the rest of the plant because it guards against insects and disease.

After cottonseed oil, which can be used for cooking, is extracted, the remaining high-protein meal from the new cotton plant can find many uses, Rathore said. It can be turned into flour for use in breads, tortillas, and other baked goods and used in protein bars, while whole cottonseed kernels, roasted and salted, can be consumed as a snack or to create a peanut butter type of paste. Many of the world's roughly 80 cotton-producing countries, especially in Asia and Africa, have populations that face malnutrition that could be addressed with the new plant, Rathore added.

(Reuters Science News, 17 October 2018)

Complex factors can drive the emergence and evolution of plant pathogens

For many of us, bumper crops of zucchinis and cucumbers conjure up the sweltering days of summer, while pumpkins and gourds decorate our holiday tables throughout the fall. However, these iconic fruits and vegetables, known collectively as cucurbit, can also help us understand the spread of plant diseases that pose a significant risk to crops.

Researchers have found that the introduction of cucumber crops to North America likely led to the rise of bacterial wilt caused by *Erwinia tracheiphila*, which affects zucchini, pumpkin, cucumbers, muskmelon and squash, costing US farmers tens of millions of dollars each year. Read more.

(Science Daily, 3 October 2018)

Current vacancies

There are two positions listed on the ISPP webpage including Assistant Professor of Plant Pathology at the Montana State University, USA and Assistant Professor of Plant Pathology at the University of California, Davis, USA. For more details on these positions visit the Current Vacancies page.

Acknowledgements

Thanks to Samir Droby, Grahame Jackson, Greg Johnson, Jan Leach, Andrea Masino, Laura Mugnai, Mathews Paret, José Ramón Úrbez Torres, and Peter Williamson for contributions.

Coming Events

8th International Agriculture Congress 2018 and 6th International Symposium for Food & Agriculture 2018 (IAC-ISFA 2018)
13 November - 15 November, 2018
Universiti Putra Malaysia
Website: conference.upm.edu.my/IAC18

Indian Society of Mycology and Plant Pathology 39th Annual Conference and National Symposium on Plant and Soil Health Management: New Challenges and Opportunities
16 November - 18 November, 2018
Kanpur, Uttar Pradesh, India
Website: www.ismpp.org.in/article.php?q=ismpp-39th-annual-conference-and-national-symposium-on-

International Phytobiomes Conference
4 December - 6 December, 2018
Montpellier, France
Website: www.phytobiomesconference.org

51st Congress of the Southern African Society for Plant Pathology
20 January - 24 January, 2019
Langebaan, South Africa
Website: www.saspp.co.za/2019-saspp-conference.html

1st International Molecular Plant Protection Congress
10 April - 13 April, 2019
Adana, Turkey
Website: www.imppc2019.org

Joint Meeting of the IUFRO working parties "Shoot, foliage and stem diseases" and "Wilt diseases" (7.02.02 and 7.02.03)
6 May - 10 May, 2019
Figline Valdarno, Florence, Italy
Website: www.iufro.org/download/file/29599/2749/florence19-1st-announcement_doc/

14th International Plant Virus Epidemiology Symposium
14 May - 17 May, 2019
Seoul, Korea
Website: www.ipve2019.com

5th International Symposium on Postharvest Pathology: From Consumer to Laboratory - Sustainable Approaches to Managing Postharvest Pathogens
19 May - 24 May, 2019
Liège, Belgium
Website: www.postharvest2019.be

International Symposium on Cereal Leaf Blights 2019
22 May - 24 May, 2019
University College Dublin, Dublin, Ireland
Website: www.isclb2019.com

Rhizosphere 5
7 July - 11 July, 2019
Saskatoon, Saskatchewan, Canada
Website: www.rhizo5.org

11th International Workshop on Grapevine Trunk Diseases
7 July - 12 July, 2019
Penticton, British Columbia, Canada
Website: iwgtd2019.ca/

4th International Symposium on Biological Control of Bacterial Plant Diseases (BIOCONTROL2019)
9 July - 11 July, 2019
Viterbo, Italy
Website: www.biocontrol2019.com

XVIII International Society for Molecular Plant-Microbe Interactions Congress
14 July - 18 July, 2019
Glasgow, Scotland
Website: www.ismpmi.org/Congress/2019

1st International Wheat Congress
21 July - 26 July, 2019
Saskatoon, Saskatchewan, Canada
Website: 2019iwc.ca

American Phytopathological Society Annual Meeting
3 August - 7 August, 2019
Cleveland, Ohio, USA
Website: www.apsnet.org/meetings/2019/Pages/default.aspx

International Workshop on the Fruit Microbiome: A New Frontier
3 September - 6 September, 2019
National Conservation Training Center, Shepherdstown, West Virginia, USA
Website: www.bard-isus.com/fruitmicrobiome.html

Working Party Meeting of IUFRO WP 7.03.10 Methodology of forest insect and disease survey in Central Europe - "Recent Changes in Forest Insects and Pathogens Significance"
16 September - 20 September, 2019
Suceava, Romania
Website: www.silvic.usv.ro/iufroromania2019/

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

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

14th International Conference on Plant Pathogenic Bacteria
7 June - 12 June, 2020
Assisi, Italy
Website: not yet available

Asian Conference on Plant Pathology: Importance and Impact of Global Plant Health
15 September - 18 September, 2020
Tsukuba International Congress Center, Ibaraki, Japan
Website: not yet available

12th International Congress of Plant Pathology (ICPP2023)
20 August - 25 August, 2023
Lyon, France
Website: www.icpp2023.org