

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

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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

JAN LEACH AWARDED THE 2019 AGROPOLIS LOUIS MALASSIS INTERNATIONAL SCIENTIFIC PRIZE FOR AGRICULTURE AND FOOD

ISPP congratulates Dr. Jan Leach (Colorado State University, USA), ISPP President, for her "Distinguished Scientist" award at the 2019 Agropolis Louis Malassis International Scientific Prize recently held in Montpellier, France, on 22 May. Dr. Baldwyn Torto (International Centre of Insect Physiology & Ecology, Kenya) and Dr. Julius Adewopo (International Institute for Tropical

Agriculture, Rwanda) also received awards. During the 4th World Congress on Agroforest the winners received a plaque certificate and prize of €20,000 each.

The 2019 Olam Prize for Innovation in Food Security, has been awarded in parallel to the project "Innovation Mapping for Food Security – IM4FS" led by Dr. Tomaso Ceccarelli (Wageningen Environmental Research, The Netherlands) and Dr. Elias Eyasu Fantahun (Addis Ababa University, Ethiopia). The winning research project receives US\$75,000 funding to support its further development.

Agropolis Fondation's Louis Malassis International Scientific Prize is given once every two years. It aims to recognise individuals for their exemplary and promising contribution in promoting innovation through research, development and/or capacity building in order to improve food and agricultural systems sustainability as well as to address food security and poverty reduction. The Prize was created as a tribute to Louis Malassis, an ardent supporter of farmers' cause, and founder of the Agropolis scientific cluster in Montpellier, home to one of the world's largest concentration of scientific skills and expertise in agriculture, food and environment.

A distinguished professor and Research Associate Dean of the College of Agriculture at the Colorado

State University, Dr. Leach's work on plant pathogens and insect pests has been focused, throughout her scientific career, on how to stabilise disease resistance in rice to reduce losses particularly in the developing world. Her research findings are enabling the development of rice with long-lasting (durable) disease resistance that is effective against diverse pathogens.



"Solving agriculture's grand challenges will require a well-trained, international workforce and will benefit from robust collaborations. I have been privileged to train many excellent scholars who now hold positions in research centers, universities, industries, and governments. These scholars and many international collaborators contributed to the work honoured by this Prize. I am proud that they continue the quest to stabilise agriculture in a world that is facing tremendous environmental challenges, and my hope is that they enjoy the process as I have," says Dr. Jan Leach.

Tom Evans honoured as fellow of the International Society for Plant Pathology and the American Society of Phytopathology

BRENDA WINGFIELD, ISPP SECRETARY

During the International Congress of Plant Pathology 2018, celebrating the 50th Anniversary of the International Society for Plant Pathology (ISPP) in July in Boston, Dr. Tom Evans was elected fellow of ISPP. Dr. Evans has been a member of ISPP since 1998 when he attended his first International Congress of Plant Pathology in Edinburgh, Scotland. Tom was elected a fellow of ISPP for his international research and service in the area of plant health and food security and for his service to the society. Dr. Evans was treasurer of ISPP, serving from 2008 to 2013, incorporating ISPP as a non-profit in the US and moving banking operations permanently to the US. Subsequently, Tom was elected vice-president of ISPP, serving from 2013 until 2018, and concurrently serving as the organising chair for ICPP2018. Tom was also elected a fellow of the American Society of Phytopathology (APS) at the same meeting for his scholarship, teaching and service in support of plant health. Tom is one of only three US plant pathologists to be honoured both as a fellow of ISPP and the APS. The other two double fellows are Charlie Delp and Jim Cook seen here with Tom at the ISPP President's reception for honourees at ICPP2018 in Boston.



From left, Tom, Charlie Delp, James Cook, Mrs Cook, Lodovica Guilino (APS and ISPP fellow from Italy) and Mike Wingfield (APS Fellow from South Africa)

WALNUT TWIG BEETLE AND A FUNGUS KILLING BLACK WALNUT TREES

KATHY KEATLEY GARVEY, UNIVERSITY OF CALIFORNIA NEWS, 23 MAY 2019

The deadly thousand cankers disease, an emerging insect-fungus complex, is causing profound damage to black walnut trees not only in urban areas of California and other western states of USA, but in Pennsylvania, Tennessee and Virginia, according to a newly published review by University of California (UC) Davis-affiliated scientists and their colleagues. The article, "Status and impact of walnut twig beetle in urban forest, orchard and native forest ecosystems," published in the *Journal of Forestry*, updates the spread of the disease, and chronicles the role of the bark beetle, *Pityophthorus juglandis*, and the canker-producing fungus, *Geosmithia morbida*, in killing walnut trees, especially black walnuts.

Native to southwestern United States and northern Mexico, the walnut twik beetle (WTB), about half the size of a grain of rice, tunnel into branches and trunks of walnut (*Juglans*) where they create galleries for mating and reproduction. They carry spores of the fungus, *G. morbida*, into their galleries, and the resulting fungal infection causes formation of cankers, which coalesce and girdle branches and stems.

Between 2005 and 2016, the disease killed nearly 60 percent of the 210 specimens of southern California black walnut mature trees in the USDA Agricultural Research Service's National Clonal Germplasm Repository *Juglans* Collection near Winters. "This is only an estimate and the true proportion of the



mortality is likely much higher, as only six of the 210 trees were rated as having healthy crowns in August 2016," said lead author and forest entomologist Steven Seybold of the Pacific Southwest Research Station, USDA Forest Service, Davis, and a lecturer and researcher with the UC Davis Department of Entomology and Nematology.

Seybold noted that the disease is "unique because of its multifaceted negative impact on walnut trees involved in landscaping, food production, and forestry. Walnut trees are valuable ecologically and for food and timber, so the walnut twig beetle is a good model in which to study the impact of a bark beetle on forest and agro-ecosystem services."

Read more.



ASH DIEBACK IS PREDICTED TO COST £15 BILLION IN BRITAIN

UNIVERSITY OF OXFORD NEWS, 6 MAY 2019

A team of researchers from the University of Oxford, Fera Science, Sylva Foundation and the Woodland Trust has calculated the true economic cost of Ash dieback – and the predictions, published recently in <u>Current Biology</u>, are staggering.

- The total cost of Ash dieback to the UK is estimated to be \pounds 15 billion
- Half of this (£7 billion) will be over the next 10 years
- The total cost is 50 times larger than the annual value of trade in live plants to and from Britain, which is the most important route by which invasive plant diseases enter the country
- There are 47 other known tree pests and diseases that could arrive in Britain and which may cost an additional £1 billion or more

The predicted costs arise from clearing up dead and dying trees and in lost benefits provided by trees, e.g.

water and air purification and carbon sequestration. The loss of these services is expected to be the biggest cost to society, while millions of ash trees also line Britain's roads and urban areas, and clearing up dangerous trees will cost billions of pounds.

The scientists say that the total cost could be reduced by replanting lost ash trees with other native trees, but curing or halting the disease is not possible. They advise that the government's focus now has to be on preventing introductions of other non-native diseases to protect our remaining tree species.

Ash dieback is a fungal disease, originally from Asia, which is lethal to Europe's native ash trees. It was first found in Britain in 2012 and is thought to have been brought to the UK years earlier on infected imported ash trees. It is expected to kill 95-99% of ash trees in Britain.



Annual Reviews special article collection on The Future of Food

The <u>Annual Reviews new Future of Food</u> special collection features 20 review articles examining production and policy and the impact on public health and the environment. All articles are free to read through to 30 June 2019. This special collection expands upon discussions at the recent <u>Zare Science Forum</u> and features review articles from event panelists and other experts. The Zare Science Forum on the Future of Food brought together three prominent contributors: David Zilberman (Robinson Chair of the Agricultural and Resource Economics Department at the University of California, Berkeley), Pamela Ronald (Distinguished Professor in the Department of Plant Pathology and the Genome Center at the University of California, Davis), and Patrick Brown (CEO and Founder of Impossible Foods).

Some of the review articles include:

- The Economics of the Naturalist Food Paradigm
- Organic Agriculture, Food Security, and the Environment
- <u>Climate Change and Food Systems</u>
- Pest Management in Food Systems: An Economic Perspective
- Plant Innate Immunity: Perception of Conserved Microbial Signatures

PROCEEDINGS OF A WORKSHOP ON REDUCING IMPACTS OF FOOD LOSS AND WASTE

According to a 2011 estimate by the Food and Agriculture Organization of the United Nations (FAO), about onethird of food produced is lost or wasted globally. Beyond quantity estimates, however, less is known about the impacts on farmers, food prices, food availability, and environment of reducing food loss and waste. On 17 October 2018, the National Academies of Sciences,



Engineering, and Medicine organised a workshop to examine key challenges that arise in reducing food loss and waste throughout the supply chain and discussed potential ways to address these challenges. This publication summarises the presentations and discussions from the workshop.

Download free PDF.

TARGETING HOW FUNGI 'TASTE' WHEAT COULD BE KEY TO DEVELOPING CONTROL

UNIVERSITY OF BATH PRESS RELEASE, 24 APRIL 2019

Exploring how a hazardous fungal pathogen 'tastes' its surroundings within a wheat plant to coordinate virulence could be the key to developing new control strategies, scientists believe. Researchers at the University of Bath and Rothamsted Research have been examining how "fungal G-protein coupled receptors", which are similar to taste receptors on our tongues, are involved in promoting Fusarium Head Blight (FHB) – a damaging and hazardous disease of wheat which is the number one floral disease in cereals globally.

FHB targets the ear and grain of the wheat plants and is therefore a major problem for farmers of one of the world's most important crops. The disease is economically costly, damaging wheat crops towards the end of the growing cycle, and contaminating the wheat grain with fungal toxins (mycotoxins) which are dangerous for humans and animals to eat.

In the UK there are outbreaks of FHB every few years, experiencing wheat crop losses of around 10% in 2012. In other parts of the world such as the USA, Brazil and China, the disease causes severe crop losses and mycotoxin contamination problems for farmers every harvest. Currently there are no truly effective ways to control FHB, which is spread by airborne spores.

The research team, led by fungal biologist Dr. Neil Brown from the University of Bath's Department of Biology and Biochemistry, thinks that G-protein coupled receptors are promising targets to develop new approaches to control fungal diseases, including the FHB causing pathogen *Fusarium graminearum*. These fungal receptors 'taste' their environment and signal changes to the fungi cell, kicking off an appropriate biological response, including mating, mycotoxin production and virulence.

In a series of experiments the scientific team demonstrated that *F. graminearum*'s receptors are important in wheat infection. The team made a collection of fungal mutants lacking individual receptors. They went on to show that the absence of one type of receptor, specific to fungi, allowed the wheat plant to mount a stronger defence, which causes a traffic jam of invading filamentous fungal structures called hyphae and reducing the progression of infection. The team also showed that the removal of this receptor meant that the virulence on wheat was reduced, because various fungal processes required for infection were disrupted and dysregulated.

The research is published in PLOS Pathogens.



AFRICAN FARMERS LOOK TO GENETIC ENGINEERING IN FIGHT AGAINST PLANT DISEASES AND PESTS

STEVEN CERIER, GENETIC LITERACY PROJECT, 29 APRIL 2019

This is part four of a series on the potential benefits of genetic engineering technology for Africa. Part <u>one</u> looks at climate change. Part <u>two</u> examines the fight against malnutrition. Part <u>three</u> covers Africa's growing acceptance of GMOs.

In many ways, you could argue that Africa is not in a position to view agricultural genetic engineering as a luxury. Indeed, it is a necessity in order to expand crop production to feed its growing population, bolster farm income, deal with the ravages of climate change and eliminate the scourge of diseases plaguing its crops.

Yet, this is a continent that finds itself besieged by campaigns that seek to vilify and demonise new technologies that could expand food output in Africa.

Among them:

• In March of 2018, the West African Peasant Seed Committee, which is part of the network of the Alliance for Food Sovereignty in Africa, met in Senegal and called for the abandonment "of all activities supporting the introduction of GMO seeds or seeds derived from new biotechnologies (e.g. gene editing, gene silencing)."

- Greenpeace has suggested there are risks and uncertainties that come with these breeding GM techniques, and that many of them are too new to have been properly evaluated for safety. "Gene-editing, for example, is poorly understood, especially in plants. As little is known about its mode of action it is also difficult to identify potential hazards," the group argues.
- In a paper on the new gene-editing techniques, the African Center for Biodiversity said: "Claims that these technologies are safer than classical transgenesis techniques are unproven and are continuing to promote a chemical industrial agricultural model."

But failure to adopt new agricultural biotechnology techniques could have grave implications for Africa, where many people rely on farming for their livelihoods and where agricultural products are a major source of export earnings. Many of the major crops in Africa are threatened by disease and pests. As a result, many experts believe genetic engineering holds the key to fending off those threats.

Read more.



BANANA DISEASE BOOSTED BY CLIMATE CHANGE

UNI. OF EXETER NEWS, 6 MAY 2019

Black Sigatoka disease emerged from Asia in the late 20th Century and has recently completed its invasion of banana-growing areas in Latin America and the Caribbean. International trade and increased banana production have aided the spread of Black Sigatoka, which can reduce the fruit produced by infected plants by up to 80%.

The new study, by the University of Exeter, says changes to moisture and temperature conditions have increased the risk of Black Sigatoka by more than 44% in these areas since the 1960s. "Black Sigatoka is caused by a fungus, *Pseudocercospora fijiensis*, whose lifecycle is strongly determined by weather and microclimate," said Dr. Daniel Bebber, of the University of Exeter.

"This research shows that climate change has made temperatures better for spore germination and growth, and made crop canopies wetter, raising the risk of Black Sigatoka infection in many bananagrowing areas of Latin America. Despite the overall rise in the risk of Black Sigatoka in the areas we examined, drier conditions in some parts of Mexico and Central America have reduced infection risk." The study combined experimental data on Black Sigatoka infections with detailed climate information over the past 60 years.

The paper, published in the journal *Philosophical Transactions of the Royal Society B*, is entitled: "<u>Climate change effects on black sigatoka disease of banana</u>."

Read more.

FROM POTATOES TO COFFEE, PLANT BREEDERS ARE CHANGING CROPS TO ADAPT TO AN UNCERTAIN CLIMATE FUTURE

SAM BLOCH, NEW FOOD ECONOMY, 23 MAY 2019

A good read on how familiar foods we take for granted are being modified to survive droughts, pests, and other mainstays of a brave new climatechanged world.

"We tend to view the effects of climate change through the lens of the worst and most dramatic disasters, from hurricanes and floods to forest fires. But farmers have a more mundane fear: that as weather becomes more extreme and varied, their land will no longer support the crops they grow. We've grown accustomed to living in a world where salad greens thrive in California, and Iowa is the land of corn. But even in the absence of a single, catastrophic event, conventional wisdom about what grows best where may no longer apply."

Read article.



Image courtesy of David Bebber

CURRENT VACANCIES

The Department of Plant Pathology at the **Washington State University** seeks to fill a 12-month, permanent, full time tenure-track position at the rank of Assistant Professor of Plant Pathology. The position has research and extension responsibilities in potato pathology and teaching responsibilities at the undergraduate and graduate levels. Application screening will begin on 30 April 2019 and remain open until filled. Further details about the position and how to apply are available in the <u>PDF</u>.

ACKNOWLEDGEMENTS

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COMING EVENTS

2nd International Symposium on Fire Blight of

Rosaceous Plants 17 June - 21 June, 2019 Traverse City, Michigan, USA Website: www.canr.msu.edu/fireblightsymposium/

Functional Metagenomics 2019

16 June - 19 June, 2019 Trondheim, Norway Website: <u>www.sasm.org.za/component/k2/item/219-</u> <u>functional-metagenomics-2019</u>

20th Fusarium Laboratory Workshop

23 June - 28 June, 2019 Kansas State University, Manhattan, Kansas, USA Website: <u>www.plantpath.k-state.edu/events.fusarium</u>

51st Pest Management Council of the Philippines Anniversary and Annual Scientific Conference

2 July - 5 July, 2019 Coron, Palawan, Philippines Contact: Mr. Freddiewebb B. Signabon <u>philphytopath@gmail.com</u>

Rhizosphere 5

7 July - 11 July, 2019 Saskatoon, Saskatchewan, Canada Website: <u>www.rhizo5.org</u>

11th International Workshop on Grapevine Trunk

Diseases 7 July - 12 July, 2019 Penticton, British Columbia, Canada Website: <u>iwgtd2019.ca/</u>

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: <u>www.ismpmi.org/Congress/2019</u>

1st International Wheat Congress

21 July - 26 July, 2019 Saskatoon, Saskatchewan, Canada Website: <u>2019iwc.ca</u>

American Phytopathological Society Annual

Meeting – Plant Health 2019 3 August - 7 August, 2019 Cleveland, Ohio, USA Website: www.apsnet.org/meetings/2019/Pages/default.aspx

6th International Conference on Bacterial Blight and Bacterial Leaf Streak of Rice

18 August - 22 August, 2019 Cantho City, Vietnam Website: <u>icbb6.org/</u>

International Workshop on the Fruit Microbiome: A New Frontier

3 September - 6 September, 2019 National Conservation Training Center, Shepherdstown, West Virginia, USA Website: <u>www.bard-isus.com/fruitmicrobiome.html</u>

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: <u>www.apps2019.org</u>

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

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

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

14th International Conference on Plant Pathogenic Bacteria 7 June - 12 June, 2020 Assisi, Italy Website: <u>www.icppb2020.com</u> Joint 18th International *Botrytis* Symposium & 17th International *Sclerotinia* Workshop 8 June - 12 June, 2020 Avignon, France Website: colloque.inra.fr/botrytis-sclerotinia-2020

Asian Conference on Plant Pathology: Importance and Impact of Global Plant Health

15 September - 18 September, 2020 Tsukuba International Congress Center, Ibaraki, Japan Website: www.ppsj.org/pdf/meeting/2020 ACPP.pdf?0913-2

13th Arab Congress of Plant Protection

1 November - 6 November, 2020 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>

IX International Postharvest Symposium

9 November - 13 November, 2020 Rotorua, New Zealand Website: <u>scienceevents.co.nz/postharvest2020</u>

12th International Congress of Plant Pathology (ICPP2023)

20 August - 25 August, 2023 Lyon, France Website: <u>www.icpp2023.org</u>





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 <u>business.manager@issppweb.org</u>

