

INTERNATIONAL NEWSLETTER ON PLANT PATHOLOGY

ISPP Newsletter 46 (10) October 2016

News and announcements from all on any aspect of Plant Pathology are invited for the Newsletter. Contributions from the ISPP Executive, Council and Subject Matter Committees, Associated Societies and Supporting Organisations are requested.

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Submissions Are Now Open for ICPP 2018 Concurrent Sessions (Invited Talks)

2018 will be a notable year for the International Society for Plant Pathology (ISPP) as it celebrates its 50th anniversary and convenes its [11th International Congress of Plant Pathology \(ICPP\)](#). Scheduled to be held in Boston, a city rich in the historic roots of the founding of the United States, ICPP will be a celebration of the Congress' vision to promote an engaged world community of plant health scientists advancing knowledge for a safe, affordable, secure supply of food, feed, and fiber for a growing population.

Make your vision and voice heard. Submissions are now open through December 9, 2016 for the ICPP 2018 Concurrent Sessions (Invited Talks).

Who can submit?

Subject matter committees and any other groups, committees or individuals interested in organizing and moderating a concurrent session are encouraged to complete the submission process. We encourage subject matter committees and individuals with similar areas of interest to work together globally in planning concurrent sessions in order to eliminate duplication and create better scientific content.

Concurrent Sessions have the following format:

- Four invited speakers (20 minutes each)
- Two contributed short talks (10 minutes each)
- Discussion to follow.

*** Please Note: Only the four invited speakers need to be identified for the concurrent session proposal.

The contributed short talks, workshops, field trips, etc. will be selected by the Scientific Program Committee from those submitted during the ICPP 2018 general call for abstracts that will open at a later date.

[Submit a concurrent session proposal](#)

(ICPP Organizing Committee)

Three foods that might not survive modern diseases



What do olive oil, bananas, and honey have in common? They're foods with uncertain fates. Olive groves in Italy are scenes of devastation as a bacterial pathogen spreads, leaving behind withered, brown trees in its wake. A fungus is infiltrating soils in the tropics, and it has the potential to make half the bananas on earth go extinct. A trifecta of maladies are bringing down honeybees, a plight that threatens not just honey, but a third of the food produced on the planet.

[Read more.](#)

(Kyle Frischkorn, Eater, Science Reports, 15 September 2016)

Discovery of a special power in wheat

A new photosynthesis discovery at The University of Queensland may help breed faster-growing wheat crops that are better adapted to hotter, drier climates. A research team led by Queensland Alliance for Agriculture and Food Innovation researcher, Professor Robert Henry, has published a paper in [Scientific Reports](#), showing that photosynthesis occurs in wheat seeds as well as in plant leaves. The research characterised a previously unknown photosynthetic C4 pathway in the seeds of wheat - which is not a C3 plant.

[Read more.](#)

(Science Daily, 17 August 2016)

Egypt lifts ergot ban

The world's largest wheat importer announced it will lift its zero-tolerance policy to the presence of ergot in wheat.

[Read full story.](#)

(Henry Wells, Grain Central, 22 September 2016)

Special issues on plant hormones in interactions with the environment and plant-microbe symbiotic interactions

Special issues on [plant hormones in interactions with the environment](#) and [plant-microbe symbiotic interactions](#) in the journal *Plant Molecular Biology* have recently been published. Articles are freely accessible until 31 October.

(Springer, 15 September 2016)

Fighting plant pathogens with RNA

A team of researchers, led by Hailing Jin a professor of plant pathology and microbiology at the University of California, Riverside, USA, have developed a new strategy that could provide an easy-to-use and environmentally friendly fungicide to fight *Botrytis cinerea* and other fungal pathogens that harm crops. The researchers found three years ago for the first time that *B. cinerea* can deliver small RNA effector molecules to the host cells to induce cross-kingdom RNA interference (RNAi) to suppress host immunity.

Building on that [earlier research](#), in the just-published study in [Nature Plants](#), they discovered that such cross-kingdom RNAi is bidirectional, meaning small RNAs can flow from the pathogen to the host and from the host to the pathogen. Furthermore, they found that *B. cinerea* is capable of taking up RNA molecules from the environment, which makes it possible to use such external RNAs in fungicidal sprays to manage diseases. The researchers tested that idea and found that applying those pathogen gene-targeting RNA molecules to the surface of fruits and vegetables and flowers - they used tomato, strawberry, grape, lettuce, onion and rose - can control gray mold diseases.

The findings have significant implications for farmers looking to control fungal pathogens. Currently, fungicides and chemical spraying are still the most common disease control strategy. While the research focused on the fungal pathogen *B. cinerea*, the researchers believe the technique could be used to control other fungal pathogens, such as *Verticillium dahliae*, which causes wilt disease on dozens of trees, shrubs, vegetables and fields crops. It also has the potential to decrease the use of GMOs by providing an effective, environmentally friendly way to control plant diseases.

(Sean Nealon, University of California, Riverside, News, 20 September 2016)

Gene-edited mushroom created by Penn State researcher is changing GMO dialogue

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service confirmed to Yinong Yang, associate professor of plant pathology, that the anti-browning mushroom he developed using a gene-editing

technique known as CRISPR-Cas9 would not be subject to USDA approval. The notification apparently clears the way for the potential commercial development of the mushroom, which is the first CRISPR-Cas9 gene-edited crop deemed to require no regulatory review by USDA. Unlike most GMO crops, which receive DNA from foreign organisms such as bacteria or other plant species, this mushroom is transgene-free.

"Our genome-edited mushroom has small deletions in a specific gene but contains no foreign DNA integration in its genome," said Yang. "Therefore, we believed that there was no scientifically valid basis to conclude that the CRISPR-edited mushroom is a regulated article based on the definition described in the regulations."

The USDA ruling could open the door for many other GMO crops developed using CRISPR-Cas9 technology. In fact, less than a week after USDA's notification regarding Yang's anti-browning mushroom, the agency also ruled that a CRISPR-Cas9-edited corn variety developed by DuPont Pioneer also would require no USDA approval.

The federal government has begun a review of its regulatory framework governing the approval of GMOs to take into account newer technologies, such as CRISPR-Cas9.

[Read more.](#)

(Chuck Gill, Penn State News, 19 April 2016)

Population Genomics of Fungal and Oomycete Pathogens of Animals and Plants, 7-11 May 2017, Switzerland

The population genomics of fungal and oomycete pathogens is a rapidly growing area of research. New datasets, new sequencing methodologies and new analytical methods are enabling a deeper understanding of the evolutionary processes driving the emergence of fungal and oomycete pathogens. This conference aims to enrich our understanding of the processes driving the evolution of plant, animal and human pathogens, with an over-riding goal of identifying the genomic changes responsible for adaptation to novel hosts and environments. A secondary goal will be to determine how the relevant genes (and their underlying functions) vary along ecological/agronomic gradients associated with host specialization, including quantitative adaptation to host resistance. The conference will be oriented around genome-based approaches, including; 1) using population genomics to understand pathogen emergence and host specialization, 2) using genome-wide association studies to identify key genes and genomic regions associated with pathogen local adaptation, 3) using population genomics to understand pathogen divergence/speciation, 4) developing new analytical methods for population genomic analyses.

Participation in the conference will require pre-registration because only 110 places are available. Participants are required to fill out a form and submit a 250-word abstract for an oral and/or poster presentation. The form can be downloaded on the conference website.

Pre-registration opens on 1 November 2016 and closes on 31 December 2016.

More details: <https://www.ethz.ch/content/specialinterest/usys/ibz/plant-pathology/en/education/population-genomics-of-fungal-and-oomycete-diseases-of-animals-a.html>

(Bruce McDonald, Institute of Integrative Biology, Zurich, Switzerland)

Anti-fungal compounds: emerging environmental contaminants

Azole fungicides are active ingredients in a range of pharmaceutical and personal care products, and are also used in agriculture. This study reviewed the sources, presence and risks of these compounds in the environment, finding evidence of toxic effects on aquatic organisms. The researchers provide directions for future research and warn caution should be exercised until more toxicity data becomes available.

Source: [Chen, Z. & Ying, G. \(2015\). Occurrence, fate and ecological risk of five typical azole fungicides as therapeutic and personal care products in the environment: A review. Environment International, 84: 142-153.](#)

[Read more](#) (PDF).

(Science for Environmental Policy, New Alert, 23 September 2016)

Moth behaviour disrupted by street lighting, may affect pollination

Street lighting reduces the number of moths at ground level and increases flight activity at the level of the lights, shows new research. Less pollen was transported by moths at lit sites in the UK study as a result of the disruptive effects on moth behaviour. The study highlights the need to consider both the direct and indirect ecological impacts of artificial light.

Source: [Macgregor, C.J., Evans, D.M., Fox, R. & Pocock, M.J.O. \(2016\) The dark side of street lighting: impacts](#)

[on moths and evidence for the disruption of nocturnal pollen transport. Global Change Biology.](#)

[Read more](#) (PDF).

(Science for Environmental Policy, New Alert, 23 September 2016)

Acknowledgements

Thanks to ICPP2018 committee, Greg Johnson and Peter Williamson for contributions.