



**ISPP** INTERNATIONAL SOCIETY  
FOR PLANT PATHOLOGY

PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

# ISPP NEWSLETTER

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## IN THIS ISSUE:

The new logo of the ISPP is here!

Climate change. FAO launched a new scientific review of its impacts on plant pests for IYPH2020's end

Irish potato famine pathogen stoked outbreaks on six continents

Nematode pests of some major cereals in Nigeria

Pacific Pests, Pathogens and Weeds - Version 10

Rapid, simple diagnostic method for insect-transmitted plant pathogen and insect identification webinar

Reservoirs of plant virus disease

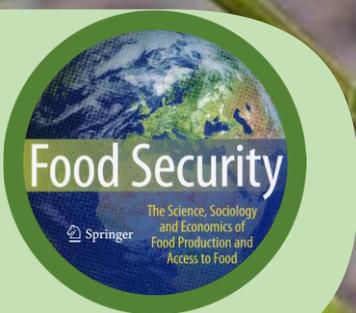
Launch of new short animated film focusing on Sub-Saharan Africa plant health

Battle of the pleiades against plant immunity

Current Vacancies

Acknowledgements

Coming Events



INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

[WWW.ISPPWEB.ORG](http://WWW.ISPPWEB.ORG)

## THE NEW LOGO OF THE ISPP IS HERE!



**ISPP** INTERNATIONAL SOCIETY  
FOR PLANT PATHOLOGY

The International Society of Plant Pathology changes its face! The new logo, which takes the place of the old one designed by APS for the 1973 International Congress, celebrates the values that have characterised the ISPP since its birth.

Scientific approach, unity, equality, and collaboration on a global scale. Over 25,000 researchers around the world work in the field of plant pathology and identify with the ISPP. The new logo, designed in a modern perspective, does not change the content of the message but only its form, in view of the International Congress of Plant Pathology of 2023 in Lyon, France. It also reflects the values and intent of the International Year of Plant Health, IYPH2020.

2020 has certainly changed our lives and in some ways made us reflect on the importance that plants and ecosystems have in safeguarding our health. Plant pathology is a very modern and future-oriented discipline!

The new logo was designed by the ISPP Business Manager, Andrea Masino, with copyright assigned to the International Society for Plant Pathology (ISPP). Please contact the ISPP Business Manager if you wish to use it for an associated society event.

The purpose of the International Society for Plant Pathology (ISPP) is to promote the worldwide development of plant pathology, and the dissemination of knowledge about plant diseases and plant health management. The Society sponsors the International Congress of Plant Pathology (ICPP) at regular intervals and other international meetings on plant pathology and closely related subjects. The Society establishes committees to consider and report on special fields or problems in plant pathology. The Society organizes other activities including the publication of journals and newsletters, websites, as approved by the Executive Committee.



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## CLIMATE CHANGE. FAO LAUNCHED A NEW SCIENTIFIC REVIEW OF ITS IMPACTS ON PLANT PESTS FOR IYPH2020'S END

The *Scientific review on the impact of climate change on plant pests - A global challenge to prevent and mitigate plant pest risks in agriculture, forestry and ecosystems* by Professor Maria Lodovica Gullino, University of Turin (Italy), and ten co-authors from around the world was prepared under the auspices of the Secretariat of the International Plant Protection Convention as one of the key initiatives of the International Year of Plant Health (IYPH), which is coming to an end on June 2021.

The scientific review finds that climate change will increase the risk of pests spreading in agricultural and forestry ecosystems, especially in cooler Arctic, boreal, temperate and subtropical regions.

The review analyses 15 plant pests that have spread or may spread due to climate change. Some pests, like Fall Armyworm and Tephritid fruit flies, have already spread due to warmer climate. Others, such as the Desert Locust (the world's most destructive migratory pest), are expected to change their migratory routes and geographical distribution because of climate change.

Even though the IYPH is coming to an end, FAO and partners will continue to build on its legacy and raise awareness on how protecting plant health can help end hunger, reduce poverty, protect the environment, and boost economic development.

“Preserving plant health is fundamental to achieve the Sustainable Development Goals. Sustaining plant health is an integral part of our work towards more efficient, inclusive, resilient and sustainable agri-food systems,” stressed the FAO Director-General at the launch of the review.

The webcast of the event can be found [here](#).

The full programme of the event can be found [here](#).

The presentation of Prof. Gullino can be found [here](#).



The United Nations declared 2020 as the IYPH. The Year was extended until 1 July 2021 due to the COVID-19 pandemic. This launch is one of the events organised by the IPPC Secretariat, which is hosted by FAO, as the Year is wrapping up.

# IRISH POTATO FAMINE PATHOGEN STOKED OUTBREAKS ON SIX CONTINENTS

MICK KULIKOWSKI, NC STATE UNIVERSITY NEWS, 11 JUNE 2021

North Carolina State University researchers continue to track the evolution of different strains of the plant pathogen that caused the Irish potato famine in the 1840s, which set down roots in the United States before attacking Europe. They studied the genomes of about 140 pathogen samples – historic and modern – from 37 countries on six continents to track the evolution of differing strains of *Phytophthora infestans*, a major cause of late-blight disease on potato and tomato plants.

The study, published in *Scientific Reports*, shows that the historic lineage called FAM-1 was found in nearly three-fourths of the samples (73%) and was found on all six continents. “FAM-1 was much more widespread than previously assumed, spreading from Europe to Asia and Africa along British colony trade routes,” said Jean Ristaino, William Neal Reynolds Distinguished Professor of Plant Pathology and the corresponding author of the study. “The lineage was also found over a span of more than 140 years.”



A plant in Chile affected by late-blight disease. NC State researchers track the evolution of strains of *P. infestans*, the pathogen that caused the Irish potato famine in the 1840s, which continues to harm plants worldwide (Photo credit: Jean Ristaino, NC State University).

FAM-1 caused outbreaks of potato late blight in the United States in 1843 and then two years later in Great Britain and Ireland. It was also found in historic samples from Colombia – suggesting a South American origin. FAM-1 caused massive and debilitating late-blight disease outbreaks in Europe, leaving starvation and migration in its wake. Ristaino theorises that the pathogen arrived in Europe via infected potatoes on South American ships or directly from infected potatoes from the United States.

FAM-1 survived for about 100 years in the United States but was then displaced by a different strain of the pathogen called US-1, Ristaino said. “US-1 is not a direct descendant of FAM-1, but rather a sister lineage,” Ristaino said. “We found US-1 in 27% of samples in the study and they were found much later.” US-1 has since been elbowed out of the United States by even more aggressive strains of the pathogen that have originated in Mexico. Winter tomato crops – grown in Mexico and imported into the U.S. – harbour the pathogen, Ristaino said.

The study also suggests that the pathogen spread first in potatoes and then later jumped into tomatoes. Spread of the pathogen in ripe tomatoes in ships’ holds would have been unlikely, Ristaino said.

The pathogen’s effects aren’t limited to the decimation of Ireland’s potato crop some 175 years ago. Billions are spent worldwide each year in attempts to control the pathogen, Ristaino said. Potatoes in the developing world are particularly vulnerable as fungicides are less available and often unaffordable.

## **NEMATODE PESTS OF SOME MAJOR CEREALS IN NIGERIA**

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A review by Sulaiman Abdulsalam *et al.* titled “Nematode pests of some major cereals in Nigeria: Need for integration of morphological/morphometrical, biochemical and molecular diagnostic approaches for accurate identification” was published on 28 May 2021 by *Plant Pathology* (early view). The abstract is as follows:-

Plant-parasitic nematodes pose a major threat to crop production in Nigeria. Comprehensive data on yield losses for most cereal crops are not readily available. Research on maize (*Zea mays*), rice (*Oryza sativa*) and sorghum (*Sorghum bicolor*) has shown an 18 – 67% reduction in yield which implicates the destructiveness of parasitic nematodes, particularly root-knot and root-lesion nematodes. The continuous monoculture and conservative approach to agriculture increase the incidence and higher population density of nematodes, leading to elevated damage and losses in most cultivated cereal crops. These losses affect the food security of the growing population of Nigeria and many African countries that are heavily dependent on cereals. The accurate identification of nematodes is fundamental for effective management strategies. Nematode taxonomy based on morphology has been difficult due to intraspecific character variations coupled with the limited expertise of indigenous nematologists. Biochemical and molecular marker-based tools and approaches have allowed efficient diagnosis of most nematode species affecting cereal production globally. These approaches have proven useful due to their practicality, rapidness, accuracy, and cost-effectiveness. This review provides the economic importance of these parasitic nematodes on cereal production and highlights the need for integrative taxonomy approaches for an accurate species

International Society for Plant Pathology identification that will improve the nematode diagnosis, thereby, contributing to the increase of food production in Nigeria.

[Read paper.](#)

## **PACIFIC PESTS, PATHOGENS AND WEEDS - VERSION 10**

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**GRAHAME JACKSON**

Version 10 of the Pacific Pest app is online now for desktop computers and mobiles through a browser (Chrome, Firefox, Safari, etc). To access it go to the PestNet website ([www.pestnet.org](http://www.pestnet.org)), and click on Pest Fact Sheets.

There are now 503 fact sheets.

To wet your appetites, there's one from Graham Walker on maximising biocontrol; from Caroline Smith on soil health, from Mani Mua on using chilli extracts to control scale insects; and lots more weeds. References, checked links and a translator have been added. Take a look.

You will see that we have combined Fact Sheets with PestNet. You can reach PestNet to join or view submissions from every fact sheet.

The presentation of the fact sheets has been changed too. They have been given a more "modern look"!

The mobile app will be released by Google and Apple stores as soon as we can. This will take more time, but you will be informed as soon as it is available.

Please tell others.

Feedback to Grahame Jackson is always welcome.

# RAPID, SIMPLE DIAGNOSTIC METHOD FOR INSECT- TRANSMITTED PLANT PATHOGEN AND INSECT IDENTIFICATION WEBINAR

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July 8, 2021 | 12:00 - 1:00 p.m. Central  
Daylight Time

**Price:** Free for APS Members and Nonmembers!

**Speaker:** Karolina Pusz-Bochenska

The process of diagnosing insect-transmitted plant pathogens can take upwards of two weeks, which delays pathogen identification and can slow responses to plant diseases. Join Karolina Pusz-Bochenska to learn about her research developing an improved DNA extraction method that reduces the time from insect collection to positive pathogen identification in less than an hour. Pusz-Bochenska's method and research won the 2020 Best Student Paper Award in Plant Health Progress last year.

Shaker Kousik, Editor-in-Chief of Plant Health Progress, will be present to answer any questions you may have regarding the journal and research submissions.

[Register Here](#)

# RESERVOIRS OF PLANT VIRUS DISEASE

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A paper by Elham Yazdkhasti *et al.* titled “Reservoirs of plant virus disease: Occurrence of wheat dwarf virus and barley/cereal yellow dwarf viruses in Sweden” was published on 1 June 2021 by *Plant Pathology* (early view). The abstract is as follows:-

Non-crop plants such as grasses and volunteer plants are an inseparable part of the flora of crop fields and can influence virus incidence in crop plants. The presence of grasses as virus reservoirs can lead to a higher probability of virus incidence in crop plants. However, the role of reservoirs as an inoculum source in agricultural fields has not been well studied for many viral diseases of crops. Grasses have been found to constitute potential reservoirs for cereal-infecting viruses in different parts of the world. This study revealed that cereal-infecting viruses such as wheat dwarf virus (WDV), barley yellow dwarf viruses (BYDVs), and cereal yellow dwarf virus-RPV (CYDV-RPV) can be found among ryegrass growing in or around winter wheat fields. Phylogenetic analysis showed that a WDV isolate from ryegrass was a typical WDV-E isolate that infects wheat. Similarly, a ryegrass isolate of barley yellow dwarf virus-PAV (BYDV-PAV) grouped in a clade together with other BYDV-PAV isolates. Inoculation experiments under greenhouse conditions confirmed that annual ryegrass of various genotypes can be infected with WDV to a very low titre. Moreover, leafhoppers were able to acquire WDV from infected ryegrass plants, despite the low titre, and transmit the virus to wheat, resulting in symptoms. Information from the grass reservoir may contribute to improving strategies for controlling plant virus outbreaks in the field. Knowledge of the likely levels of virus in potential reservoir plants can be used to inform decisions on insect vector control strategies and may help to prevent virus disease outbreaks in the future.

[Read paper.](#)

## LAUNCH OF NEW SHORT ANIMATED FILM FOCUSING ON SUB-SAHARAN AFRICA PLANT HEALTH

RICHARD WYATT, CONNECTED NETWORK COMMUNICATIONS OFFICER

A two-minute animated film summarising the contribution to food security brought to Sub-Saharan African countries by [The CONNECTED Virus Network](#) has been launched.

The film focuses on:

- the Network's capacity-building through training and research funding
- enabling networking between researchers, and
- the importance of the continuation of the Network.

It was made in collaboration with The University of The West of England (UWE), UK, created by animation student, Sam Maxwell, and narrated by Pereko Makgothi.

You can watch the film now here: <https://bit.ly/3h0ZeQT>



## BATTLE OF THE PLEIADES AGAINST PLANT IMMUNITY

AUSTRIAN ACADEMY OF SCIENCES NEWS, 24 JUNE 2021

Mythological nymphs reincarnate as a group of corn smut proteins to launch a battle on maize immunity. One of these proteins appears to stand out among its sister Pleiades, much like its namesake character in Greek mythology. The research carried out at GMI – Gregor Mendel Institute of Molecular Plant Biology of the Austrian Academy of Sciences – is published in the journal [PLOS Pathogens](#).

Pathogenic organisms exist under various forms and use diverse strategies to survive and multiply at the expense of their hosts. Some of these pathogens are termed “biotrophic”, as they are parasites that maintain their hosts alive. These biotrophic pathogens deregulate physiological processes in their hosts by suppressing their immune defenses and favoring disease development. In plant biotrophic pathogens, such hostile actions are inflicted by secreted molecules including proteins, termed “effectors”. One biotrophic pathogen infecting maize plants is *Ustilago maydis*, or corn smut. Up until present, the arsenal used by the *U. maydis* effector proteins to wage war against the maize immune response remained largely unstudied. Now, researchers around University of Bonn professor and previous GMI group leader Armin Djamei unveil the function of the Pleiades, a heterogeneous group of effector proteins in corn smut, and tell a tale worthy of Greek mythologies.

### The Pleiades: Between mythology, stars and maize immunity

Whether the star cluster in the Taurus constellation was named after the seven daughters of Atlas and Pleione, or whether the opposite is true, is still subject to debate. However, what brings the name “Pleiades” on a group of effector proteins in corn smut? In fact, the genes encoding the Pleiades are

arranged as a co-regulated cluster in the *U. maydis* genome, hence the analogy with the star cluster. Furthermore, the genetic cluster in question is particularly dynamic. This phenomenon is partly due to the high prevalence of transposon sequences, or “jumping genes”. As a result, the high sequence diversity in the Pleiades’ genetic cluster produces effector proteins that lack conserved domains. Therefore, a sequence-based prediction of the Pleiades’ functions is simply not possible. In this sense, the forces at play in the battle against maize immunity were still awaiting close examination.

### Different tactics leading to the same goal

“For the first time now, we shed light on the function of a whole effector cluster in *U. maydis*, the cluster of ten effector genes encoding the Pleiades,” states Prof. Djamei. The team does so by analysing the effect of deleting the cluster in the pathogen as well as by producing these proteins in plants. “We showed that a cluster deletion strongly weakens the pathogen and leads to the accumulation of Reactive Oxygen Species [ROS] in infected plant tissues,” explains Dr. Fernando Navarrete, first author on the publication. Rapid production of ROS is a known plant immune defense mechanism, thus allowing the plant to fight the invading pathogen. Eight of the ten Pleiades appear to target specifically this mechanism, albeit by distinct means and despite marked sequence differences. Navarrete elaborates: “Our findings underline the functional relevance of effector clusters in smut fungi. The functional redundancy of the individual players is explained by their mechanistic diversity and complementarity. You must imagine the individual Pleiades as distinct units fighting the same enemy on several battle fronts.”

[Read more.](#)

## **CURRENT VACANCIES**

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No current vacancies.

## **ACKNOWLEDGEMENTS**

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Thanks to Grahame Jackson, Greg Johnson, Jan Leach, and Andrea Masino for contributions.

## COMING EVENTS

### 16<sup>th</sup> Congress of the Mediterranean Phytopathological Union

Postponed – the conference will be rescheduled either for Autumn 2021 or Summer 2022  
Limassol, Cyprus

### 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: [7icpps.pakps.com](http://7icpps.pakps.com)

### 13<sup>th</sup> Arab Congress of Plant Protection

31 October - 5 November, 2021  
Le Royal Hotel, Hammamat, Tunisia  
Contact: Dr. Asma Jajar, Chairperson of Organising  
Committee [info@acpp-aspp.com](mailto:info@acpp-aspp.com)  
Website: [acpp-aspp.com](http://acpp-aspp.com)

### Association of Applied Biologists Virtual Conference - Thinking differently about soilborne disease management

10 November, 2021  
Website: [web.cvent.com/event/adc5a4f6-0657-496b-bb81-a1bed45e7d7c/summary](http://web.cvent.com/event/adc5a4f6-0657-496b-bb81-a1bed45e7d7c/summary)

### Australasian Plant Pathology Society Conference – Staying Connected for Plant Health

23 November - 26 November, 2021  
Online conference  
Website: [appsconference.com.au/home](http://appsconference.com.au/home)

### International Plant & Animal Genome XXIX

8 January -12 January, 2022  
San Diego, California, USA  
Website: [www.intlpag.org/2021/](http://www.intlpag.org/2021/)

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

28 February - 3 March, 2022  
Denver, Colorado, USA  
Website: [ipmsymposium.org/2021](http://ipmsymposium.org/2021)

### 7<sup>th</sup> International Congress of Nematology

1 May - 6 May, 2022  
Antibes Juan-les-Pins, France  
Website: [www.alphavisa.com/icn/2020/index.php](http://www.alphavisa.com/icn/2020/index.php)

### International Plant Health Conference “Protecting Plant Health in a Changing World”

Week of 12 May 2022  
Location to be advised  
Website: [www.fao.org/plant-health-2020/events/events-detail/en/c/1250609/](http://www.fao.org/plant-health-2020/events/events-detail/en/c/1250609/)

### 4<sup>th</sup> International *Erwinia* Workshop

2 July - 3 July, 2022  
Assisi, Italy  
Website: [www.icppb2020.com](http://www.icppb2020.com)

### 14<sup>th</sup> International Conference on Plant Pathogenic Bacteria

3 July - 8 July, 2022  
Assisi, Italy  
Website: [www.icppb2020.com](http://www.icppb2020.com)

### 12<sup>th</sup> International Workshop on Grapevine Trunk Diseases (ICGTD12)

7 July - 12 July, 2022  
Mikulov, Czech Republic  
Website: [ucanr.edu/sites/ICGTD/Workshops\\_559/](http://ucanr.edu/sites/ICGTD/Workshops_559/)

### International Phytobiomes Conference 2022

13 September - 15 September, 2022  
Denver, Colorado, USA  
Website: [phytobiomesconference.org/](http://phytobiomesconference.org/)

### 11<sup>th</sup> Australasian Soilborne Diseases Symposium

Mid-late 2022  
Cairns, Queensland, Australia  
Website: [asds2020.w.yrd.currinda.com](http://asds2020.w.yrd.currinda.com)

### XX International Plant Protection Congress

10 June - 15 June, 2023  
Athens, Greece  
Website: [www.ippcathens2023.gr](http://www.ippcathens2023.gr)



**12<sup>th</sup> International Congress of Plant Pathology  
(ICPP2023)**

20 August - 25 August, 2023

Lyon, France

Website: [www.icpp2023.org](http://www.icpp2023.org)

**9<sup>th</sup> ISHS International Postharvest Symposium**

11 November – 15 November, 2024

Rotorua, New Zealand

Website: [scienceevents.co.nz/postharvest2024](http://scienceevents.co.nz/postharvest2024)





# ICPP 2023

**ONE HEALTH**  
for all plants,  
crops and trees



**20-25 August, France**



[www.icpp2023.org](http://www.icpp2023.org)



## INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

[WWW.ISPPWEB.ORG](http://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](mailto:business.manager@issppweb.org)

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