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Editor: Daniel Hüberli

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Deadline for nominations for the ISPP Executive changed to 20 April 2017

The call for nominations of candidates for election to the 2018-2023 ISPP Executive Committee has been posted to all constituent societies of the ISPP. This election occurs once every 5 years, in accordance with the ISPP Rules of Procedure. Nominations are being sought for the positions of ISPP President, Vice-President, Secretary-General and Treasurer.

A Nomination Committee has been formed, consisting of highly respected plant pathologists representing different regions of the world, and chaired by Prof M Lodovica Gullino (ISPP Immediate Past President). The Committee will select two candidates for each position from the nominations received. The selected candidates will go forward to the full election, which will be a ballot of all ISPP Councilors.

Potential nominees must firstly agree to be nominated, and be aware of the time commitments and responsibilities involved with the respective positions. Short-listed nominees will be asked to provide a short written summary of their background and how they might serve in the position for which they have been nominated. Nominees should also be willing and aware of their responsibilities to ISPP and Associated Societies in fulfilling the duties of the positions These will include participation at the International Congresses of Plant Pathology, in 2018 (Boston, USA) and 2023 (Lyon, France), and being able to commit 70 to 150 h per year for ISPP Executive service. Nominators and potential nominees should view information on the ISPP (http://www.isppweb.org/about_objectives.asp), and consider the duties and responsibilities of the Executive as outlined in the ISPP statutes and rules of procedure: http://www.isppweb.org/about_objectives_statutes.asp .

Nominations should be sent directly to Prof M Lodovica Gullino (marialodovica.gullino@unito.it), or through a representative of an Associated Society (see http://www.isppweb.org/about_associated_eng.asp). Names and full contact details (including e-mail addresses), along with evidence of each nominee's willingness to serve if elected, should be provided. **Nominations should be received by 20 April 2017.**

International Congress of Plant Pathology ICPP2018 program update

Planning for the scientific program and activities at the International Congress of Plant Pathology (ICPP2018) - Plant Health in the Global Economy during 29 July to 3August, 2018 are well advanced. The draft program is at: http://www.icpp2018.org/program/Pages/default.aspx.

ISPP Global Crop Loss Survey: An overview of results

Over a period of three months (November 2016 - January 2017), 1142 responses from 216 respondents in 67 countries were recorded during the Global Crop Loss Survey organized by the Crop Loss Subject Matter Committee of the ISPP. This appears to be the first Survey of this kind ever conducted.

This short note is intended to provide an overview of contributions by crops and countries, to report some emerging features of the data, and to highlight the size of this collective effort through the list of contributors.

Contributions to the Survey

Five major global crops were considered in the Survey: Wheat, Rice, Maize, Potato, and Soybean. The total numbers of contributions by crops were: 368, 297, 151, 180, and 146 for these five crops, respectively. The overall Survey output is truly global as the map in Figure 1 shows. While four countries - the USA, India, Brazil, and Australia, in that order - provided substantial contributions, a good coverage of response for Eastern Asia, Southeast Asia, Europe, and South America was achieved. The coverage of Africa appears the weakest (as is apparent on the map), but nevertheless corresponds to an encouraging total of 96 responses.

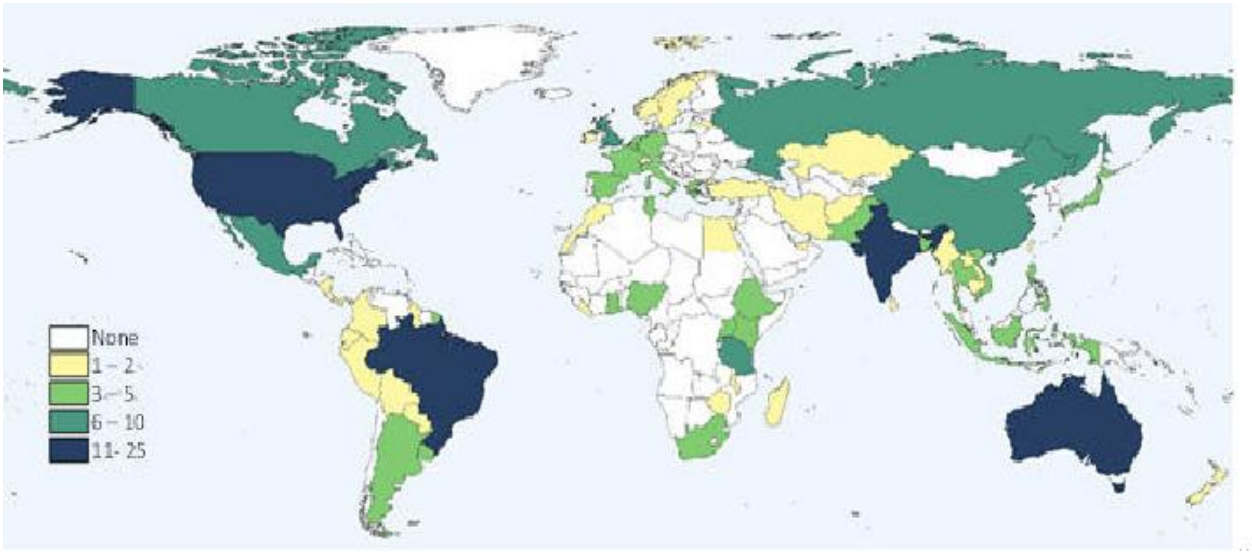

Figure 1. Number of unique respondents[1] per country[2]

[1] Note that a respondent can represent one or more responses.

[2] The boundaries, colours, denominations, and other information shown on this map do not imply any judgment on the part of the ISPP or the authors or the respondents concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Further details on the distribution of responses are provided in Table 1. Contributions by country, expressed as numbers of responses, varied with crops, although there is a consistent group of countries with a high frequency of contributions across all five crops. The ten countries which generated the highest overall number of responses are listed at the end of Table 1. When weighted against their agricultural productions, the levels of contributions by country are quite different. Irrespective of the ranking criterion, a good mix of responses from developed, emerging, and developing countries was received. Similarly, there is a good coverage across ecoregions of the world.

Table 1. Responses per country[1,2] and responses per million tons of production per country[3]

Wheat			
Country	**Responses**	**Country**	**Responses/Production**
United States	38	Bangladesh	12.9
Russian Federation	36	Sweden	6.4
Australia	27	Uruguay	5.8
China	23	Tunisia	4.7
India	19	Mexico	3.7
Rice			
Country	**Responses**	**Country**	**Responses/Production**
India	58	Philippines	2.6
Philippines	46	Colombia	2.0
Vietnam	18	Taiwan	1.8
United States	13	United States	1.4
China	13	Tanzania	1.3

Maize			
Country	**Responses**	**Country**	**Responses/Production**
United States	38	Greece	2.4
India	15	Ghana	2.2
Canada	12	Nigeria	1.2
Brazil	12	Canada	1.0
Nigeria	11	Pakistan	0.9
Potato			
Country	**Responses**	**Country**	**Responses/Production**
Russian Federation	38	Brazil	5.2
Brazil	19	Australia	4.1
India	16	South Africa	2.7
Greece	7	Spain	2.2
South Africa	6	Italy	2.1
Soybean			
Country	**Responses**	**Country**	**Responses/Production**
United States	47	Canada	1.4
Brazil	30	United States	0.5
Argentina	14	Brazil	0.4
Canada	7	India	0.3
Japan	6	Argentina	0.3
All five crops			
Country	**Responses**	**Country**	**Responses/Production**
United States	141	Bangladesh	13.0
India	112	Brazil	8.8
Brazil	82	Uruguay	6.5
Russian Federation	74	Sweden	6.4
Philippines	46	South Africa	6.0
China	44	Greece	5.8
Canada	38	Mexico	5.7
Australia	32	Australia	5.1
Greece	21	Tunisia	4.7
Mexico	20	Italy	4.2

[1] Top five countries shown for each crop, and top ten countries for all crops combined.
[2] The names in this table do not imply any judgment on the part of the ISPP or the authors or the respondents concerning the legal status of any territory or the endorsement or acceptance of such boundaries.
[3] Responses per production only consider countries with at least 1 million tons of production for that crop based on FAOSTAT averages 2010-2014.

Which are the most important diseases and pests?
The five most cited diseases and pests on the five different crops are listed in Table 2. The five lists account for the varying levels of consideration among experts, with respect to diseases and pests in each crop. Depending on the crop, some diseases appear to dominate to varying degrees; Leaf and panicle blast dominate reports in Rice, and reports for Potato are very strongly dominated by late blight. In contrast, responses for Maize are more evenly distributed among various diseases and pests. Table 2 only reflects the volume of information collected on each disease or pest, not their importance in terms of crop losses.

Table 2 Number of responses recorded for the most cited diseases and pests per crop

Wheat		**Rice**		**Maize**		**Potatoes**		**Soybean**	
Disease or pest	**Resp[1]**	**Disease or pest**	**Resp[1]**	**Disease or pest**	**Resp[1]**	**Disease or pest**	**Resp[1]**	**Disease or pest**	**Resp[1]**

Tritici blotch	60	Blast	52	F&G [3] ear rots	18	Late blight	63	Soybean rust	30
Stripe rust	44	Bacterial blight	36	Northern leaf blight	16	Early blight	27	White mold	15
FHB [2] - Scab	41	Rice tungro	23	F&G [3] stalk rots	15	Common scab	15	Downy mildew	15
Leaf rust	33	Brown spot	22	Southern rusts	13	Verticillium wilt	11	Cyst nematode	10
Tan spot	25	Stem borers	20	Maize streak	9	Cyst nematode	11	Rhizoctonia blight	9

[1] Number of responses
[2] Fusarium head blight
[3] Fusarium and Gibberella

There are many ways to address the importance of crop diseases and pests. The Survey has generated information on the magnitude of crop losses, in five categories (less than 1%, 1 to 5%, 5 to 20%, 20 to 60%, and more than 60% losses), and on the frequency of these losses, in four categories (every season, one season in two, one season in five, and less than one season in five). This will enable different approaches to quantify crop losses.

At this stage, a key question concerns the overall representativeness of the information gathered. Across all five crops, experts have reported losses lower than 1% in 15.4% of the cases, between 1 and 5% in 37.3% of the cases, between 5 and 20% in 33.7% of the cases, between 20 and 60% in 11.5% of the cases, and higher than 60% in 2.1% of the cases. A simple aggregate weighted average of these losses, in which loss levels are weighted by their reported frequencies, gives an overall crop loss of 11.7%. This figure would represent the average loss caused by an average disease (or pest), (1) when occurring, and (2) in the absence of any other disease or pest. Although a preliminary result, the estimated average loss is well within the ranges of global or regional crop losses that have been reported in the literature.

Preliminary analyses suggest that the data collected are sufficiently robust and representative to warrant more detailed investigation. This Survey is important for a number of reasons: its international reach, the procedure it has followed, and the targeted crops. Another important element of this Survey is that it was conducted on five different crops simultaneously, which will facilitate cross comparisons. Work is under way on these analyses.

Who contributed to the Survey?
The table below provides the list of contributors and their institutions, based on those who provided name and institute information.

Name	Institute
Araz Abdullah	Curtin University, Centre for Crop and Disease Management
Adewale Adetayo	Ministry of Agriculture Ogun State Nigeria
Dante Adorada	University of Southern Queensland, Centre for Crop Health
Vanina Alemandri	IPAVE CIAP INTA (Instituto Nacional de Tecnología Agropecuaria)
Shaukat Ali	South Dakota State University
Thomas W. Allen	Mississippi State University
Eduardo Alves	Universidade Federal de Lavras
Lamia Aouini	WUR (Wageningen University and Research)
Christos Athanassiou	University of Thessaly
Renuka Nilmini Attanayake	University of Kelaniya
Julián Ayala	AIMCRA (Asociación de Investigación para la Mejora del Cultivo de la Remolacha Azucarera)
Arun Balasubramaniam	Banaras Hindu University
Ranajit Bandyopadhyay	IITA (International Institute of Tropical Agriculture)
Biruta Bankina	Latvia University of Agriculture
Robert Beiriger	University of Florida

Samia Berraies	INRAT (National Institute of Agricultural Reseach of Tunisia)
Suma S. Biradar	University of Agricultural Sciences, Dharwad Karnataka
Leonardo Silva Boiteux	Embrapa Vegetable Crops (Brazilian Agricultural Research Corporation)
Claude Bragard	Université Catholique de Louvain
Toby Bruce	Rothamsted Research
Adalberto Correa Cafe Filho	Universidade de Brasilia
Nancy Castilla	IRRI (International Rice Research Institute)
Xianming Chen	USDA ARS
Angela Cherunya	KALRO (Kenya Agriculture and Livestock Research Organization)
Godfree Chigeza	IITA (International Institute of Tropical Agriculture)
Il-Ryong Choi	IRRI (International Rice Research Institute)
Michalakis Christoforou	Cyprus University of Technology
Glenda Clezy	Saskatchewan Pulse Growers
Fernando Correa	CIAT (International Center for Tropical Agriculture)
Leila Maria Costamilan	Embrapa Trigo (Brazilian Agricultural Research Corporation)
Eric Cother	New South Wales Department of Primary Industries
Gilles Couleaud	ARVALIS (French Arable Crops R&D Institute)
Henry Creissen	Teagasc (The Agriculture and Food Development Authority)
Leonardo Crespo-Herrera	CIMMYT (International Maize and Wheat Improvement Center)
Adriano Augusto de Paiva Custódio	Instituto Agronômico do Paraná
Dagma Dionísia da Silva	Embrapa maize and sorghum (Brazilian Agricultural Research Corporation)
Frederick K. Danso	Department of Food and Agriculture
Matthias Daub	Julius Kuehn Institute
Emerson Del Ponte	Universidade Federal de Vicosa
Matthew Denton-Giles	Centre for Crop and Disease Management Curtin University
Ruth Dill-Macky	University of Minnesota
Jessica Dohmen-Vereijssen	New Zealand Institute for Plant and Food Research
Anne Dorrance	The Ohio State University
Daniel Dostaler	University Laval
Benjamin Dumont	Gembloux Agro Bio Tech
Etienne Duveiller	AfricaRice
Jacqueline Edwards	Agriculture Victoria
Juan Pablo Edwards Molina	ESALQ USP (Luiz de Queiroz College of Agriculture, University of São Paulo)
Oliver Ellingham	University of Reading
Luis Espino	University of California Cooperative Extension
Ieuan Evans	Private consultant
Bert Evenhuis	WUR (Wageningen University and Research)
Washiq Faisal	IRRI (International Rice Research Institute)
Mohamed Moez Fakhfakh	National Institute of field crops
Travis Faske	University of Arkansas
Andrea Ficke	NIBIO
Alexey Filippov	All Russian Research Institute of Phytopathology
John Fletcher	New Zealand Institute for Plant and Food Research
Gregory Forbes	CIP (International Potato Center)
Gabriela Morel Gadea	IPTA (Instituto Paraguayo de Tecnología Agraria)
Tatiana Gagkaeva	All Russian Institute of Plant Protection
Fernanda Gamba	Facultad de Agronomia
Seelavarn Ganeshan	Mauritius Sugarcane Industry Research Institute
Philipp Gannibal	All Russian Institute of Plant Protection
Denis Gaucher	ARVALIS (French Arable Crops R&D Institute)

Dattatray Gawade	Mahatma Phule Krishi Vidyapeeth Maharashtra India
Alaerson Maia Geraldine	Instituto Federal Goiano
Claudia Vieira Godoy	Embrapa (Brazilian Agricultural Research Corporation)
Jos Groten	WUR (Wageningen University and Research)
Russell L. Groves	University of Wisconsin
Elena Gultyaeva	All Russian Institute of Plant Protection
Ashish Kumar Gupta	IARI (Indian Agricultural Research Institute)
Göran Gustafsson	Swedish Board of Agriculture
Michael Harding	Alberta Agriculture and Forestry
Xinyao He	CIMMYT (International Maize and Wheat Improvement Center)
Andrea Hills	Department of Agriculture and Food, Western Australia
Dave Hodson	CIMMYT (International Maize and Wheat Improvement Center)
Grant Hollaway	Agriculture Victoria
Clayton A. Hollier	Louisiana State University
Nyo Me Htwe	IRRI (International Rice Research Institute)
Touseff Hussain	ICAR Indian Agricultural Research Institute New Delhi
Agape Ishabakaki	Research and Development Network
Kiyoshi Ishiguro	National Agricultural Center for Tohoku Region, Morioka, Iwate
Jai Prakash Jaiswal	G B Pant University of Agriculture and Technology Pantnagar India
Mohammad Reza Jalal Kamali	CIMMYT (International Maize and Wheat Improvement Center)
Prashant Jambhulkar	Maharana Pratap University of Agriculture and Technology Udaipur India
Douglas J. Jardine	Kansas State University
Stewart Jennings	University of Leeds
Fernando Cezar Juliatti	Uberlandia Federal University
Santoso Kadrawi	Indonesian Center for Rice Research
George Karaoglanidis	Aristotelian University of Thessaloniki
Ute Kastirr	Julius Kuehn Institute, Federal Research Centre for Cultivated Plants
Masayasu Kato	JIRCAS (Japan International Research Center for Agricultural Sciences)
Shakiro Adewale Kazeem	Nigeria Agricultural Quarantine Service
Yodit Kebede	WUR (Wageningen University and Research)
Thomas Kelly Turkington	Agriculture and AgriFood Canada
Aleksandr Khiutti	All Russian Institute of Plant Protection
Zakir Khursheed	Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir
J Kumar	G B Pant University of Agriculture and Technology Pantnagar India
Lava Kumar	IITA (International Institute of Tropical Agriculture)
Sundeep Kumar	National Bureau of Plant Genetic Resources New Delhi
Uttam Kumar	Borlaug Institute for South Asia
Susamoy Kundu	Bidhan Chandra Krishi Viswavidyalaya
Marcos Lana	ZALF (Leibniz Centre for Agricultural Landscape Research)
Douglas Lau	Embrapa (Brazilian Agricultural Research Corporation)
Miguel Angel Lavilla	National University of Northwestern Buenos Aires Province
Maria Imaculada Pontes Moreira Lima	Embrapa Trigo (Brazilian Agricultural Research Corporation)
Anders Lindgren	Jordbruksverket
Tai Guo Liu	Institute of Plant Protection of Chinese Academy of Agricultural Sciences
Aleksandre Loladze	CIMMYT (International Maize and Wheat Improvement Center)
Carlos Alberto Lopes	Embrapa (Brazilian Agricultural Research Corporation)
Jagjeet Lore	Punjab Agricultural University Ludhiana India
Zhanhong Ma	China Agricultural University
Zhonghua Ma	Zhejiang University
Khaled Makkouk	National Council for Scientific Research

Febina Mathew	South Dakota State University
Sarrah Ben MBarek	Center of Biotechnology of Borj Cédria
Bruce A. McDonald	Plant Pathology Group ETH Zurich
Ana Maríía Pesqueira Méndez	Universidad de Santiago de Compostela
Walter R. Meza	Gembloux Agro Bio Tech
Thomas Miedaner	University of Hohenheim, State Plant Breeding Institute
Asimina Mila	North Carolina State University
Eduardo S.G. Mizubuti	Universidade Federal de Vicosa
Atef Mohamed	Fayoum University
Kalyan K. Mondal	ICAR Indian Agricultural Research Institute New Delhi
Alexey Morgounov	CIMMYT (International Maize and Wheat Improvement Center)
Gloria Mosquera	CIAT (International Center for Tropical Agriculture)
Daren Mueller	Iowa State University
Norma Mujica	CIP (International Potato Center)
Harun Murithi	IITA (International Institute of Tropical Agriculture)
Norman Muzhinji	University of Pretoria, South Africa
Meshack Mwenda	Agricultural Research Institute Uyole Mbeya
Bita Naseri	Kermanshah Agricultural and Natural Resources Research Center
Kedar Nath	Navsari Agricultural University
Nilceu R.X. de Nazareno	Instituto Agronomico do Parana
Innocent Ndikumana	Rwanda Agriculture Board
Stephen Neate	University of Southern Queensland
Cley Donizeti Martins Nunes	Embrapa Clima Temperado (Brazilian Agricultural Research Corporation)
Sunao Ochi	National Agriculture and Food Research Organization
Christopher Yao Ocloo	Plant Protection and Regulatory Services Ministry of Food and Agriculture
Godfried Ohene-Mensah	Crops Research Institute
Ricardo Oliva	IRRI (International Rice Research Institute)
Richard Oliver	Centre for Crop and Disease Management, Curtin University
Kirsty Owen	University of Southern Queensland
Ayu Kartini Parawansa	Muslim University of Indonesia
Monica Parker	CIP (International Potato Center)
Salina Parvin Banu	BARI (Bangladesh Agricultural Research Institute)
Silvia Pereyra	INIA (National Institute of Agricultural Research of Uruguay)
Willmer Perez Barrera	CIP (International Potato Center)
Bui Xuan Phong	Plant Protection Department Vietnam
Danilo Batista Pinho	Universidade de Brasilia
T.L. Prakasha	IARI (Indian Agricultural Research Institute) Regional Station Indore Madhya Pradesh
Godfried J. Prinsloo	Agricultural Research Council Small Grain Institute
Alejandro Rago	INTA (Instituto Nacional de Tecnología Agropecuaria)
Senthil Ramu	Central Integrated Pest Management Centre Vijayawada
Angel Rebollar Alviter	Universidad Autonoma Chapingo
Abdul Rehman	University of Agriculture, Faisalabad Pakistan
Ailton Reis	Embrapa
Erlei Melo Reis	OR melhoramento de sementes Ltda
Bert Rijk	WUR (Wageningen University and Research)
Alison Robertson	Iowa State University
Gianfranco Romanazzi	Marche Polytechnic University
Vittorio Rossi	Department of Sustainable Crop Production, University of Piacenza
Hannah Rostad	University of Southern Queensland
Concepcion Rubies Autonell	Department of Agricultural Sciences, Universitàdi Bologna

Jason Rudd	Rothamsted Research
M.S. Saharan	IARI (Indian Agricultural Research Institute) New Delhi
Flavio Santana	Embrapa (Brazilian Agricultural Research Corporation)
Serge Savary	INRA (French National Institute for Agricultural Research)
Parthasarathy Seethapathy	Tamil Nadu Agricultural University
Ane Sesma	Centre for Plant Biotechnology and Genomics
S.K. Sethi	Haryana Agricultural University India
Rajiv Sharma	CIMMYT (International Maize and Wheat Improvement Center)
Arslan Shehroz	University of Agriculture, Faisalabad
Meena Shekhar	Indian Institute of Maize Research New Delhi
Abubacker Siddick	Hand in Hand India
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Richard W. Smiley	Oregon State University
Damon Smith	University of Wisconsin
Marcella Viana de Sousa	Monsanto, Brazil
Gomathinayagam Subramanain	University of Guyana
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W. Tadesse	ICARDA (International Center for Agricultural Research in the Dry Areas
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Atma Nand Tripathi	ICAR India Institute of Vegetable Research IIVR, Varanasi UP
Dimitrios Tsitsigiannis	Agricultural University of Athens
Anne D. Turner	Independent Consultant
Gupta Vadakattu	CSIRO (Commonwealth Scientific and Industrial Research Organisation)
Johnnie van den Berg	North West University South Africa
Jacquie E. van der Waals	University of Pretoria
Joseph-Alexander Verreet	Institute of Phytopathology, University of Kiel Germany
Antonio Vicent	IVIA (Instituto Valenciano de Investigaciones Agrarias)
Hugh Wallwork	SARDI (South Australian Research and Development Institute)
Jianhua Wang	Shanghai Academy of Agricultural Sciences
Shiwen Wang	CNRRI (China National Rice Research Institute)
K. L. Wasantha Kumara	University of Ruhuna
Johnson Belamai Weefah	Cuttington University
Caroline Wesp Guterres	Cooperativa Central Gaucha Ltda
Jonathan S. West	Rothamsted Research
Calum Wilson	University of Tasmania
Kaoru Zenbayashi-Sawata	National Agriculture and Food Research Organization
Yilin Zhou	Institute of Plant Protection of Chinese Academy of Agricultural Sciences
Xiaoyang Zhu	Ottawa Research and Development Center

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Paul Esker, University of Costa Rica;
Neil McRoberts, UC Davis, USA.

Janaki Ammal is the reason your sugar tastes sweeter

"In recognition of international women's day held on 8 March every year is this inspiring story of a woman who braved a largely patriarchal, ultra-conservative society to fulfil her academic dreams."

One of the first women scientists to receive the Padma Shri way back in 1977, Edavaleth Kakkat Janaki Ammal lived a life only a handful of other women of her time lived. In an age when most Indian women didn't make it past high school, Janaki Ammal didn't just obtain a PhD at one of America's finest public universities, she went on to make seminal contributions to her field. She also remains one of the few Asian women to be conferred an honorary doctorate (DSc. honoris causa) by her alma mater, the University of Michigan, and that was in 1931!

A pioneering botanist and cytogeneticist, Janaki Ammal is credited with putting sweetness in India's sugarcane varieties, speaking against the hydro-electric project in Kerala's Silent Valley and the phenomenal study of chromosomes of thousands of species of flowering plants. There is even a flower named after her, a delicate bloom in pure white called Magnolia Kobus Janaki Ammal.

Yet, at a time when the country is focussing on educating the girl child, Janaki Ammal's contribution to Indian botanical research remains mostly unknown outside academic circles. This is the story of an extraordinary Indian woman who braved a largely patriarchal, ultra-conservative society to fulfil her academic dreams.

Read this inspiring story.

(Sanchari Pal, The Better India, 16 November 2016)

Plant Pathology in the 21st Century ISPP and Springer book series

ISPP is pleased to announce the broadening of the book series Plant Pathology in the 21st Century.

Under an agreement with Springer, the book series based on the invited lectures at the 9th International Congress of Plant Pathology ICPP2008, was initiated and four books covering key themes were published. Three additional volumes in the series were published on themes which were key topics at ICPP2013, held in Beijing, China. In light of the initial seven volumes' success, the ISPP has reached an agreement with Springer to broaden the scope of the series and publish additional volumes.

The aim of the series is to highlight the latest international findings and advances in plant pathology and plant medicine. ISPP Subject Matter Committees representatives, plant pathology topic specialists and workshop organisers are invited to consult with the Series Editor, Prof M Lodovica Gullino (marialodovica.gullino@unito.it), regarding their topic's potential inclusion in the series.

Plasma prevents food from spoiling

Kirsty Bayliss from Murdoch University is using plasma and electrical currents to stop mould from taking hold on fresh food, bread, meats, grains, and dairy products such as milk and cheese. The technology also kills bacteria associated with food-borne illness, such as salmonella and listeria.

The technology - which is already widely used in medicine and dentistry - works by producing plasma generated by an electrical charge, conducted through two electrodes using the air around us. This then produces a plasma flame which is applied to food.

"That plasma coats the surface of the food, and what you do when you treat that surface is kill the mould spores on the surface so they can't infect the fruit," Dr Bayliss said. "It seems to be stimulating the resistance response in the fruit as well so it's actually defending itself against infection - it's really clever and completely chemically free,"

Dr Bayliss says the technology could lead to a massive reduction in food waste. Right now more than 30 per cent of purchased food in Australia ends up in the bin. "Food wastage contributes to a lot of the food insecurity - a developed country such as the US or Europe wastes around 100 kilograms of food per person every year.

The researchers are taking their work to San Francisco to pitch it to industry and philanthropists to improve global health outcomes, and have even had interest from NASA to help with their space exploration.

(Sarah Collard, ABC News, 22 March 2017)

Milton Zaitlin (1927 - 2016)

Milton Zaitlin, professor emeritus of plant pathology, died 11 October, 2016, in Ithaca, New York. He was 89.

Zaitlin, who joined Cornell University, Ithaca, Department of Plant Pathology in 1973, was an influential pioneer of plant virology research. He made important contributions to the study of virus replication and tobacco mosaic virus, a pathogen that infects a wide range of plants in the nightshade family (Solanaceae). He also added to the understanding of virions and viroids, among other areas. As an instructor, he taught courses in plant virology, plant-virus interactions and plant biotechnology.

"Milt's reputation attracted many postdocs and sabbatical visitors representing a broad cross-section of the international community,"

said Peter Palukaitis, an adjunct professor of plant pathology at Cornell, who is also currently a professor of horticultural sciences in the Seoul Women's University in Seoul, South Korea. Palukaitis is a former postdoctoral researcher and faculty member in the former Department of Plant Pathology, where he was a colleague of Zaitlin's. "Milt was an excellent mentor and good friend to all, and he maintained long-term relationships with many of those who passed through his lab," he said.

Zaitlin received his bachelor's degree in plant pathology from the University of California, Berkeley, in 1949 and earned a doctorate in botanical sciences from the University of California, Los Angeles, in 1954. Zaitlin served as a research officer at the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Canberra, Australia (1954-58); an assistant professor of horticulture at the University of Missouri, Columbia (1958-60); and as a professor of agricultural biochemistry at the University of Arizona, Tucson.

During a sabbatical leave in 1966-67, Zaitlin was supported by a Fulbright scholarship and Guggenheim fellowship to work at the CSIRO Division of Plant Industry. Two more sabbaticals took him to the Department of Biochemistry and Biophysics at University of California, Davis, in 1979-80, and at the John Innes Institute in Norwich, U.K., in 1986-87.

Zaitlin authored and co-authored more than 30 review articles, many of which influenced the development of the study of plant pathology. He served twice as an associate editor of the journal Virology (1966-71 and 1982-84), and as editor for plant viruses (1972-81). He was also the first senior editor for virus-plant interactions in the journal Molecular Plant-Microbe Interactions (1987-90). He was a founding member of American Society for Virology and organised the society's first meeting at Cornell in 1982 and its 10th meeting in 1992.

Zaitlin was elected as a fellow of the American Association for the Advancement of Science (1969) and the American Phytopathological Society (1978), from which he received the APS Award of Distinction (2006).

Zaitlin is survived by his wife of 65 years, Marjorie, four children, six grandchildren and one great-grandchild.

Zaitlin extensive career is highlighted on the APS Award of Distinction.

(Krishna Ramanujan, Cornell Chronicle, 28 March 2017)

IV International Symposium on Postharvest Pathology - draft programme available

Program for the IV International Symposium on Postharvest Pathology to be held at Kruger National Park, South Africa during 28 May to 3 June, 2017 is now available on the updated website, www.postharvest2017.co.za.

Science Protecting Plant Health 2017 - speakers list

Plenary and keynote speakers for the Science Protecting Plant Health 2017, a joint conference of the Australasian Plant Pathology Society and the Plant Biosecurity Cooperative Research Centre, to be held in Brisbane, Australia during 26-28 September 2017 has been listed on the website, www.sciplant2017.com.au.

Royal rivalry over the safety of GM farming fuel letters to Editor

An article in The Times dated 22 March 2017 titled "Princess backs GM" has resulted in several letters to the Editor being published the following day, including one by Richard Strange.

Sir, Wouldn't the whole GM debate be defused if it were recognised that genetic modification is merely a technique which, like so many other techniques, may be used for good or ill? Thus it is the product that should be carefully scrutinised rather than the technique by which it was obtained. In the case of crop plants, wouldn't it be good to alleviate the "hidden hunger" suffered by an estimated two billion of the world's population owing to vitamin or micronutrient deficiencies? This could be done effectively and safely by introducing the appropriate genes into the plants they eat.

Richard Strange Editor-in-chief, Food Security

(The Times, 23 March 2017)

***Phytophthora cinnamomi* A1: An ancient resident of New Guinea and Australia**

A paper by Frans Arentz titled "*Phytophthora cinnamomi* A1: An ancient resident of New Guinea and Australia of Gondwanan origin?" was published in February 2017 by Forest Pathology (early view). The abstract is as follows:-

This article re-examines the hypothesis, first proposed by Shepherd (Search, 6(11-12), 1975, 484), that *Phytophthora cinnamomi* is an ancient organism in Australia and New Guinea. It further evaluates data that suggest the A1 mating type is Gondwanan in origin and may have been present in New Guinea for up to 10 million years. It is postulated that there has been a mating type change in *P. cinnamomi* from A1 to A2 in relatively recent times as a result of genetic transformation of the A1 mating type.

Read paper.

Genetically engineered potatoes approved for planting

The U.S. Environmental Protection Agency (EPA) approved the planting of three types of genetically engineered (GE) potatoes that resist *Phytophthora infestans*, the pathogen that caused the Irish potato famine. According to EPA, the GE potatoes are safe for the

environment and safe to eat.

The GE potatoes were developed by J.R. Simplot Co. According to Simplot, the GE potatoes only contain potato genes and that the resistance to late blight trait originated from an Argentine potato variety that naturally exhibited defense against the pathogen.

The decision by EPA is consistent with the safety clearance given by Food and Drug Administration in January 2017.

Read more from AP.

(Crop Biotech Update, 1 March 2017)

Novel virus breaks barriers between incompatible fungi

A virus that can weaken the ability of a fungus to avoid pairing with other incompatible fungi has been identified and is published in PLOS Pathogens. By promoting fungal pairing, the virus could aid transmission of additional unrelated viruses between fungi.

While studying *Sclerotinia sclerotiorum*, which infects hundreds of plant species worldwide, Jiatao Xie of Huazhong Agricultural University, China, and colleagues discovered a virus they named Sclerotinia sclerotiorum mycoreovirus 4 (SsMYRV4). To better understand this novel virus, they grew infected *S. sclerotiorum* alongside other vegetatively incompatible strains and investigated the molecular effects.

The researchers found that SsMYRV4 decreased expression of *S. sclerotiorum* genes that promote vegetative incompatibility. Vegetative incompatibility is a molecular process that normally causes cell death when two incompatible strains touch each other; in this study, Xie's team found a reduction in the amount of cell death that normally occurs in intermingled colonies of incompatible strains.

S. sclerotiorum infected with SsMYRV4 successfully made connections with incompatible strains by fusing filamentous structures known as hyphae. To investigate the consequences, the scientists grew SsMYRV4-infected fungi alongside fungi infected with other unrelated viruses. They found that the unrelated viruses were able to pass through the fused hyphae, crossing between fungal pairs. Vegetative incompatibility is considered a significant obstacle to using viruses to effectively control fungal diseases. These new findings could point to a new strategy that uses SsMYRV4 to weaken barriers between fungi. They could also improve understanding of virus ecology and evolution.

(Phys.org News, 23 March 2017)

Estimate iPad app

A new iPad app, called Estimate, connects plant professionals with a portable database of photographs of diseased leaves to help determine plant disease severity.

Estimate relies on Standard Area Diagrams (SADs), a series of photographs of diseased leaves, with each photo containing a leaf incrementally more diseased than the previous one. Each SAD shows disease severity in terms of the percent of the leaf that is diseased. Users then examine a leaf in the field, for example, and compare and match it with SADs to estimate the disease severity.

The app comes with an initial set of SADs of yellow and red table beet leaves affected by Cercospora leaf spot, a fungal disease that affects beets, chards and spinach. Pethybridge and Nelson hope to offer sets of SADs for five other vegetable diseases within the Estimate app by next year.

The new app expands on a previous app developed by Nelson called Leaf Doctor, which allows users to take a photo of a diseased leaf with an iPhone or iPad. The app quantifies the percentage of disease on that leaf. This algorithm allowed the creation of new, realistic SADs based on digital images. Pethybridge and Nelson will work with users to develop SADs for use in Estimate, based on their needs and diseases of interest.

Estimate lets users interactively edit or save data for future reference, verification and study. The app will also email the information for use in spreadsheets for statistical analysis.

Users can enter data as single samples from the field or they may group data according to a plot or subplot in a field experiment, such as when researchers have trial plots to test the efficacy of a fungicide or other treatment, for example.

The app is available for free download from iTunes and is compatible with an iPad Air 2 or equivalent using iOS 9.0 or greater.

(Krishna Ramanujan, Cornell Chronicle, 6 March 2017)

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