

Adam H. Sparks

Plant Disease Management Specialist@IRRI

skills

GIS
modelling
agricultural statistics

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personal summary

I am a plant pathology epidemiologist and ecologist who can effectively communicate and collaborate with diverse partners and stakeholders in an international setting. My work encompasses traditional field-based research, epidemiological modeling, climate change, GIS and statistical methods. In turn, I use this work to understand what drives crop disease epidemics and derive disease control recommendations farmers and make recommendations for policy makers and other decision makers.

experience

since 2012	International Rice Research Institute (IRRI) <i>Develop tools and strategies for farmers to use in addressing rice diseases</i>	Scientist I
2011-2012	International Rice Research Institute (IRRI) <i>Linked plant disease models with GIS tools</i>	Post-Doctoral Fellow
2009-2010	Kansas State University <i>Developed and refined predictive Fusarium head blight models for wheat</i>	Post-Doctoral Research Associate
2002-2004	University of Nebraska-Lincoln <i>Managed maize and soybean plant pathology extension field research</i>	Research Technologist
2000-2003	University of Nebraska-Lincoln <i>Managed maize and sorghum plant pathology extension field research</i>	Research Technician
1999-2000	Purdue University <i>Coordinated training events for Purdue Diagnostic Training and Research Center</i>	Assistant Director
1997-1999	Purdue University <i>Managed soybean and canola production research studies</i>	Research Technician

education

2009	Ph.D. Plant Pathology Plant Disease Epidemiology and Ecology Dissertation: <i>Disease risk mapping with metamodels for coarse resolution predictors: global potato late blight risk now and under future climate conditions</i>	Kansas State University
2007	Graduate Certificate Geography Geographic Information Science	Kansas State University
2000	B.Sc. Agronomy Soil and Crop Management	Purdue University

publications

peer-reviewed

Climate change may have little effect on global risk of potato late blight

A H Sparks, G A Forbes, R J Hijmans, K A Garrett

Global Change Biology (2014). DOI: 10.1111/gcb.12587

A review on crop losses, epidemiology and disease management of rice brown spot to identify research priorities and knowledge gaps

M K Barnwal, A Kotasthane, N Magculia, P K Mukherjee, S Savary, A K Sharma, H B Singh, U S Singh, A H Sparks, M Variar, N Zaidi

European Journal of Plant Pathology 136.3 (2013) pp. 443–457. DOI: 10.1007/s10658-013-0195-6

Taking transgenic rice drought screening to the field.

A C M Gaudin, A Henry, A H Sparks, I H Slamet-Loedin

Journal of Experimental Botany 63.2 (2012) pp. 695–709. DOI: 10.1093/jxb/ers313

An Economic Assessment of the Impact of Mango Pulp Weevil on the Agricultural Sector of Palawan, Philippines

J D Mckinley, A H Sparks, V O Pede, B Duff

The Philippine Agricultural Scientist 95.3 (2012) pp. 286–292

Complexity in climate-change impacts: an analytical framework for effects mediated by plant disease

K A Garrett, G A Forbes, S Savary, P Skelsey, A H Sparks, C Valdivia, A H C van Bruggen, L Willocquet, A Djurle, E Duveiller, H Eckersten, S Pande, C Vera Cruz, J Yuen

Plant Pathology 60.1 (2011) pp. 15–30. DOI: 10.1111/j.1365-3059.2010.02409.x

International agricultural research tackling the effects of global and climate changes on plant diseases in the developing world

S Savary, A Nelson, A H Sparks, L Willocquet, E Duveiller, G Mahuku, G Forbes, K A Garrett, J Padgham, S Pande, M Sharma, J Yuen, A Djurle

Plant Disease 48 (2011) pp. 1–40

A metamodeling framework for extending the application domain of process-based ecological models

A H Sparks, G A Forbes, R J Hijmans, K A Garrett

Ecosphere 2.8 (2011) art90. DOI: 10.1890/ES11-00128.1

Beyond yield: plant disease in the context of ecosystem services.

M R Cheatham, M N Rouse, P D Esker, S Ignacio, W Pradel, R Raymundo, A H Sparks, G A Forbes, T R Gordon, K A Garrett

Phytopathology 99.11 (2009) pp. 1228–36. DOI: 10.1094/PHYTO-99-11-1228

Ecology and epidemiology in R: disease forecasting

P D Esker, A H Sparks, L Campbell, Z Guo, M Rouse, S D Silwal, S Tolos, B Van Allen, K A Garrett

The Plant Health Instructor (2008)

Ecology and epidemiology in R: modeling plant disease progress over time

A H Sparks, P D Esker, M Bates, W Dall'Acqua, Z Guo, V Segovia, S D Silwal, S Tolos, K A Garrett (2008)

Ecology and epidemiology in R: spatial analysis

A H Sparks, P D Esker, G Antony, L Campbell, E E Frank, L Huebel, M N Rouse, B Van Allen, K A Garrett

The Plant Health Instructor (2008)

Introduction to the R programming environment

K A Garrett, P D Esker, A H Sparks

The Plant Health Instructor (2007)

Ecology and epidemiology in R: modeling dispersal gradients

P D Esker, A H Sparks, G Antony, M Bates, W Dall'Acqua, E E Frank, L Huebel, V Segovia, K A Garrett

The Plant Health Instructor (2007)

Writing teaching documents as a class project

K A Garrett, P D Esker, A H Sparks, L C Scharmann

The Plant Health Instructor (2007)

conferences/proceedings

- Modeling the impact of disease resistance on rice yields in the Philippines and Indonesia
A H Sparks, J Anaurio, C Duku, M Noel, D Raitzer
In Proceedings of the Australasian Plant Pathology Society 2013 Meeting (2013)
- Preventing what ails rice with a strategic, statistical, prescriptive model system
A H Sparks, S Savary, A Nelson
Phytopathology vol. 102:S4.113.7 (2012)
- Predisposition factors affecting brown spot disease development in rice
N F Magculia, A H Sparks
Phytopathology vol. 102:S4.74.7 (2012)
- Putting information to use: Decisions at different scales
S Savary, A H Sparks, N Nelson, N McRoberts, P D Esker
Phytopathology vol. 102:S4.162 (2012)
- An economic assessment of the impact of mango pulp weevil on the agricultural sector of Palawan, Philippines
J McKinley, V O Pede, A H Sparks, B Duff
The Conference Secretariat, 2011 PAEDA Biennial Convention (2011)
- Income inequality and economic growth in the Philippines
G B Ballesefin, V O Pede, A H Sparks
The Conference Secretariat, 2011 PAEDA Biennial Convention (2011)
- Crop losses in highly populated areas: A global perspective
L Willocquet, A Nelson, A Sparks, A Laborte, S Savary
Phytopathology vol. 101:S223 (2011)
- Metamodels for scaling potato late blight risk analysis in climate change scenarios
A H Sparks, G Forbes, R Hijmans, K Garrett
Phytopathology vol. 100:S121 (2010)
- Anticipating and responding to biological complexity in the effects of climate change on agriculture
K Garrett, G Forbes, S Pande, S Savary, A Sparks, C Valdivia, C Vera Cruz, L Willocquet
IOP Conference Series: Earth and Environmental Science vol. 6.37 (2009)
- Adapting disease forecasting models to coarser scales: Global potato late blight prediction
A H Sparks, G Forbes, K A Garrett
Phytopathology vol. 99:S122 (2009)
- Adapting global disease forecasting models for readily available weather data sets in GIS
A H Sparks, K A Garrett, G A Forbes
In Proceedings of the 10th International Epidemiology Workshop (2009). Geneva, NY, USA
- Regional predictions of potato late blight risk in a GIS incorporating disease resistance profiles, climate change, and risk neighborhoods
A H Sparks, R Raymundo, R Simon, G Forbes, K A Garrett
Phytopathology vol. 98:S149 (2008)

book chapters

- Chap. An introduction to key distributions and models for epidemiology using R
K A Garrett, P D Esker, A H Sparks
Stevenson, K and M Jeger, APS Press, Minneapolis, MN, "Exercises in Plant Disease Epidemiology", In Press
- Chap. Cambio climático, enfermedades de las plantas e insectos plaga
K A Garrett, G A Forbes, L Gómez, M A Gonzáles, M Gray, P Skelsey, A H Sparks
Jiménez, E, "Cambio climático y adaptación en el Altiplano boliviano", 2013
- Chap. Plant pathogens as indicators for climate change
K A Garrett, M Nita, E D De Wolf, L Gomez, A H Sparks
Letcher, T, Elsevier, "Climate Change Indicators", 2009

reports

Evaluation of seed treatment for controlling seedling diseases and compatibility with Rhizobium inoculants, 2003.

L J Geisler, A H Sparks

Fungicide and Nematicide Tests 59:ST025

Evaluation of seed treatment fungicides for controlling soybean seedling diseases, 2003

L J Geisler, A H Sparks

Fungicide and Nematicide Tests 59:ST025

invited talks

2013

Biosecurity Risks in Southeast Asia Impacting on Human Food Supplies

Forum: Pacific Environmental Safety Forum Australian Department of Defence and U. S. Pacific Command
Sydney, New South Wales, Australia

2010

Global potato late blight risk in response to climate change, possible futures for a historic disease

Symposium: Emerging Infectious Diseases in Response to Climate Change.
New York Academy of Sciences, New York, New York

extramural support

2013-2017

PRISM Philippine Rice Information System
Component B – Crop Health Monitoring, Co-PI: A Nelson

\$2,765,783

2013-2015

Syngenta
Phase II, Project 2 – Crop Health Management

\$454,640

professional certifications

PRINCE2 Foundation (2014) candidate number: P2R/009385 – HiLogic Pty Ltd.

professional affiliations

American Phytopathological Society (APS)

Australasian Plant Pathology Society (APPS)

International Society of Plant Pathology (ISPP)

International Association for the Plant Protection Sciences (IAPPS)