

# Adam H. Sparks

Plant Disease Management Specialist@IRRI

## contact

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## skills

GIS  
modelling  
agricultural statistics

## research interests

field crop disease management; epidemiology and ecology; geophytopathology; climate change

## education

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

## experience

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

## 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

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

L J Geisler, A H Sparks

## 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

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|-----------|--|-------------|
| 2013-2017 | <b>PRISM</b> Philippine Rice Information System<br>Component B – Crop Health Monitoring, Co-PI: A Nelson | \$2,765,783 |
| 2013-2015 | <b>Syngenta</b><br>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)