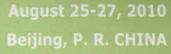
SHAO





## 种子健康与农业发展

**Proceedings** of

the 3<sup>rd</sup> International Symposium on SHAD

the 6th National Symposium on Seed Pathology

# Seed Health in Agricultural Development

**Programme, Abstracts and Participants** 

Edited by:

Dr. JIAN-QIANG LI

Dr. XI-LI LIU

Dr. CARMEN N. MORTENSEN

Dr. OLE S. LUND

中国农业科学技术出版社 China Agricultural Science and Technology Press

August 25-27, 2010 Beijing, P. R. CHINA



### 种子健康与农业发展

**Proceedings** of

the  $3^{\text{rd}}$  International Symposium on SHAD

the 6th National Symposium on Seed Pathology

## Seed Health in Agricultural Development

**Programme, Abstracts and Participants** 

Edited by:

Dr. JIAN-QIANG LI

Dr. XI-LI LIU

Dr. CARMEN N. MORTENSEN

Dr. OLE S. LUND

中国农业科学技术出版社 China Agricultural Science and Technology Press

#### 图书在版编目 (CIP) 数据

种子健康与农业发展 = Seed Health in Agricultural Development / 李健强等主编. —北京:中国农业科学技术出版社,2010.8
ISBN 978-7-5116-0256-5

I. ①种··· II. ①李··· III. ①种子 - 研究 - 文集 - 汉 IV. ①S33 - 53

中国版本图书馆 CIP 数据核字 (2010) 第 146331 号

经 销 者 新华书店北京发行所

印刷者 北京富泰印刷有限责任公司

开 本 889 mm×1 194 mm 1/16

印 张 12

字 数 280 千字

版 次 2010年8月第1版 2010年8月第1次印刷

定 价 70.00元

── 版权所有·翻印必究 ▶──

### **Proceedings**

The 3<sup>rd</sup> International Symposium on SHAD The 6<sup>th</sup> National Symposium on Seed Pathology August 25-27, 2010 Beijing, P. R. CHINA

## Seed Health in Agricultural Development

Chairperson: Dr. JIAN-QIANG LI

**Organising Committee:** 

Dr. OLE S. LUND

Dr. CARMEN N. MORTENSEN

Dr. H. S. PRAKASH

Dr. S. R. NIRANJANA

Dr. R. B. MABAGALA

Dr. XI-LI LIU

Dr. SHUI-FANG ZHU

Dr. LAI-XIN LUO (Secretary)

#### Organized by:

Danish Seed Health Centre for Developing Countries Asian Seed Health Centre African Seed Health Centre Seed Health Centre of China Agricultural University 主办单位: 中国农业大学种子健康中心

M 址: http://cab.cau.edu.cn/shccau/

地 址:北京市海淀区圆明园西路2号

中国农业大学西校区植保楼 148 室

**華** 箱: shad2010@cau.edu.cn

#### **PREFACE**

Welcome to Beijing, China. Welcome to join the 3<sup>rd</sup> International Symposium on Seed Health in Agricultural Development (3<sup>rd</sup> SHAD) taking place in Beijing, August 25-27, 2010.

The 3<sup>rd</sup> SHAD is organized by the Danish Seed Health Centre for Developing Countries (DSHC), Denmark, the Asian Seed Health Centre (ASHC), Mysore, India, African Seed Health Centre (AfSHC), Morogoro, Tanzania, and the Seed Health Centre of China Agricultural University (SHC-CAU), Beijing, China that hosts the symposium. The Symposium includes 28 oral presentations covers by four sessions and 9 key invited speakers, 24 posters, and 22 paper abstracts. To encourage Chinese seed scientists to attend the symposium, we have accepted several abstracts and papers in Chinese since this is also the sixth national symposium of seed pathology in China.

This is the third Symposium of a series of meeting to be organized on a regular basis and under the auspices of the DSHC in different partner countries. The SHC-CAU established in 2007 has become a member of the international recognized group of the seed health centres in Europe, Asia and Africa. The SHC-CAU is growing fast and trying best to boost the seed health system in China.

The DSHC was established in 2004 by combining the activities of the former Danish Government Institute of Seed Pathology (DGISP) with development activities of the Department of Plant Biology and Biotechnology, Faculty of Life Sciences, University of Copenhagen, Denmark. The DSHC conducts research and training within the areas of seed health technology and plant pathology with the primary objective of improving farm-saved seed and locally produced seed in developing countries. DSHC sustains and expands the research and training activities implemented in collaboration with the regional centres and other partners of Africa and Asia.

Prior to the symposium a meeting with the local coordinators of Seed Health Improvement

Programmes will be held. The meeting will focus on the progress made and future research strategies. This year the nomination of a scientist as adjunct professor at the SHC-CAU will be announced. A poster winner award will be presented during the meeting.

or munosystem 1.2 koster (1.111101 a.) munos a krassenten annen 8 mar 111101.

The 3<sup>rd</sup> SHAD in Beijing is a great opportunity for China to embrace the world and for our guests to enjoy our city and its wealth of attractions. The symposium offers the possibility for seed pathologists and other subject matter specialists from different countries to come together and to share information that will contribute to improved disease management and environmental protection in agricultural production. We do hope that all of the participants will enjoy their stay in Beijing during and after the symposium. We are also sure that participants will have the opportunity to tour on your own in China.

#### Organising Committee of 3<sup>rd</sup> SHAD

Dr. JIAN-QIANG LI

Dr. H. S. PRAKASH

Dr. OLE S. LUND

Dr. R. B. MABAGALA

Dr. CARMEN N. MORTENSEN

Dr. XI-LI LIU

Dr. SHUI-FANG ZHU

Dr. S. R. NIRANJANA

Beijing, P. R. China, August 24, 2010

#### **CONTENTS**

PREFACE
PROGRAMME
ABSTRACTS OF ORAL PRESENTATIONS19
SPECIAL LECTURES2
The value of seed health testing in preventing introduction and spread of bacterial diseases of plants23
Improved PCR-based assays for the detection of plant pathogenic Xanthomonas2
The role of Foundation Plant Services in the creation of Clean Plant stock
Review on plant quarantine on seeds and seedlings in China
SESSION 1 Economic Significance of Seed-borne Diseases3
Seed health status of farmers saved rice3
Seed health and its implications4
Health status of TLS (Truthfully Labeled Seeds) in the markets of Bangladesh4
Development of seed treatments for control of loose smut in barley and wheat ( <i>U. nuda</i> , <i>U. tritici</i> ) is organic agriculture
SESSION 2 Management of Seed-borne Diseases4
Detection and management of bacterial canker disease of tomatoes during and after hybrid see production
The control of seed-borne pathogens of sorghum with two aqueous extracts made from Yucca schidiger
Increase in rice yield through clean seed technology, a farmer's participatory approach4
The effect of plant extracts and essential oils on the control of brown spot disease of rice5
The effect of plant extracts as seed treatments on the control of bacterial leaf spot of tomato5
Ecofriendly seed treatment strategy for the management of important vegetable seed-borne diseases.  India
Seed sanitation under new physical methods with special reference to electron treatment
Isolation, identification, pathogenicity and genetic diversity of the black rot pathogen <i>Xanthomona</i> campestris pv. campestris in Brassica seed and crops from Mozambique
Effect of cultivar, foliar fungicide, and harvest on seed infection of soybean in Arkansas, USA

Utilization of wheat genotypes resistant to spot blotch, Karnal bunt and loose smut in breeding for disease resistance in India
Possibilities for control of seed-borne <i>Phoma</i> spp., <i>Curvularia</i> spp. and <i>Colletotrichum graminicola</i> in sorghum ( <i>Sorghum bicolor</i> ), using aqueous extracts of <i>Acacia gourmaensis</i> , <i>Balanites aegyptiaca</i> and <i>Eclipta alba</i>
Chemical analysis and mammalian toxicity of four aqueous plant extracts used for seed treatment64
Histology of infection mode of Acidovorax avenae subsp. citrulli, the causal agent of fruit blotch of watermelon
SESSION 3 Diagnosis Technology on Seed-borne Diseases67
Molecular detection and multiplexing of some important seed-borne pathogens
Characterization of bacterial leaf spot causing <i>Xanthomonas</i> of sweet pepper in Tanzania by PCR, pathogenicity and race determination
Molecular identification and genetic diversity of Lasidiplodia theobroma, the causal agent of Jatropha curcus collar rot disease
SEM study on speed and process of seed-borne infection of Fusarium moniliforme on soybean seed72
SESSION 4 Quarantine and Certification of Seeds and Vegetatively Propagated Plant
Materials 77
Quarantine, certification and eradication: a U.S. perspective to viral disease management in fruits crops 79
New emerging grapevine viruses and prevention in the Midwest of USA81
ABSTRACTS OF POSTERS83
Biocontrol of kernel smut of sorghum and detection of the causal organism, <i>Sporisorium sorghi</i> , in plant tissue
2,4-Diacetylphloroglucinol producing <i>Pseudomonas fluorescens</i> mediated disease resistance against early blight of tomato
A PCR-based diagnostic assay for the detection of Alternaria padwickii in rice seeds
Preventive control of seed borne anthracnose in lupine
The effects of seed treatment on Ascochyta blight infection progress in pea in different agro ecosystems 89
Improvement of seed quality in organic herb and medicinal plant farming90
Activity of SYP-Z048 Z-, E- isomers on plant pathogenic fungi
Determination of SYP-Z048 in soil with dispersive solid phase extraction and high performance liquic chromatography

Study on the testing of seed associated fungi from <i>Populus euphratica</i> and <i>P. pruinosa</i> 93
The first report of viable but non-culturable (VBNC) state of Clavibacter michiganensis subsp.  michiganensis
Testing of seed-associated fungi and disinfecting effect of six fungicides on rice seeds from 35 varieties 96
Seed health testing and chemical treatment effect on watermelon seeds in Beijing region97
Study on control of seed and seedling diseases of Panax quinquefolium by seed-coating formulations99
Control efficacy of 0.8% myclobutanil-tebuconazole SCF on take-all of wheat101
The antifungal activity and the mode of uptake and transportation of several QoI fungicides103
The detection method research for Clavibacter michiganensis subsp. nebraskensis
Research of detection technique of two important pathogens in Burkholderia genus
Detection of live and dead cell of <i>Pantoea stewartii</i> subsp. <i>stewartii</i> in polymerase chain reaction assay using a DNA binding dye
Detection of Cucumber Green Mottle Mosaic Virus on seeds
Detection of <i>Acidovorax citrulli</i> in watermelon leaves by polymerase chain reaction with co-amplification of host DNA
Evaluation of biocontrol preparation "Shu De Kang" with different application methods of pepper in the field
ABSTRACTS AND PAPERS111
The establishment of rapid detection method for the pathogen of crucifer bacterial black spot
Seed-borne fungi of Onobrychis viciaefolia
Seed-borne fungi of Sorghum sudanense and its pathogenicity
Effects of <i>Neotyphodium</i> endophytes on seed germination of three grass species under different pH conditions
Effects of <i>Neotyphodium</i> endophyte on germination of <i>Hordeum brevisubulatum</i> under temperature and water stress conditions
Effects of pathogenic fungus Embellisia astragali on the germination of Astragalus adsurgens
Cloning and analysis of NBS type resistance gene analogs in citrus
Rapid detection of Acidovorax avenae subsp. citrulli using protein macroarray
Rapid detection of <i>Acidovorax avenae</i> subsp. <i>citrulli</i> using protein macroarray

Potato verticillium wilt was founded in Urumqi, Xinjiang	131
Quality analysis of seed potato produced in Yunnan province	132
Registration current situation and development of crop seed treatment fungicide in China	134
One-step multiplex RT-PCR for simultaneous detection of four potato viruses	136
Detection of Pantoea agglomerans, causal agent of dry stalk rot, in maize seeds and i	
Detection of pathogens causing common blight in dry bean seeds	138
Detection of Acidovorax avenae subsp. citrulli in exported seeds	139
Study on harmless treatment technology of import watermelon seeds	144
Detection of Cucumber green mottle mosaic virus using MNP Real-time RT-PCR method	145
Development of a real-time fluorescent quantitative RT-PCR method for the detection of P	
Identification of viruses infecting Capsicum annuum in Hexi area of Gansu province	155
Detection of three quarantine virus and endogenous genes of soybean seeds by single-tube r	
APPENDIX	
Danish Seed Health Centre	159
Asian Seed Health Centre	161
African Seed Health Centre	163
Seed Health Centre of China Agricultural University	165
List of Participants	166
DOCTCODIDT	170

#### **PROGRAMME**

		·	

#### August, 24<sup>th</sup>, 2010 (Tuesday)

#### 8:00-23:00 Registration and DSHC Coordinator Meeting

- Arrival of guests for the 3<sup>rd</sup> SHAD symposium (Jin Ma Hotel)
- Registration of symposium participants (at the Lobby of Jin Ma Hotel)
- Registration and poster set-up (Jin Ma Hotel, poster set-up at the Lobby of Meeting Hall, 3<sup>rd</sup> floor)
- Pre-symposium DSHC Coordinator Meeting (Closed)

#### Important Notes to participants and speakers

- Please pick up your registration materials.
- Please speakers bring their power point presentations on a CD or Data Traveler (USB Flash Drive) to the person at the symposium registration desk on Tuesday (August 24<sup>th</sup>) or Friday morning (before 22:00, August 25<sup>th</sup>). Please mark your CD with your last name, session title and your presentation title. No Zip drive or other devices will be available to transfer your presentation to our computer.
- See the programme for the details.

#### August, 25<sup>th</sup>, 2010 (Wednesday)

	The second of th
7: 00-8:20	Breakfast (23 <sup>rd</sup> floor, Jin Ma Hotel)
8:30-8:50	Short Time Interview  Venue: Room for VIP (3 <sup>rd</sup> floor, Jin Ma Hotel)
	<ul> <li>Dr. QI-XIN SUN (Vice President for R &amp; D, China Agricultural University)</li> <li>Meet the conventioneers from DSHC, ASHC, AfSHC, USDA, Cornell Univ., Univ. of California at Davis, Missouri State Univ., ISPP, CSPP, BSPP, and governmental people from AQSIQ of China.</li> </ul>
	<b>Opening Ceremony</b>
	Venue: Meeting Hall (3 <sup>rd</sup> floor, Jin Ma Hotel)
	Chair: Dr. JIAN-QIANG LI (Head of the Seed Health Centre - CAU, China) Co-Chair: Dr. OLE S. LUND (Head of the Danish Seed Health Centre, Denmark)
	Introduce the background of 3 <sup>rd</sup> SHAD, and very important participants (Dr. JIAN-QIANG LI)
	Call upon guests to address the Symposium (speakers as below)
	Dr. QI-XIN SUN (Vice President for R & D, CAU, China)
9:00-10:20	Issue an adjunct professor certificate of CAU to Dr. CARMEN N. MORTENSEN from DSHC.
9:00-10:20	Dr. OLE S. LUND (Head of the Danish Seed Health Centre, Dept. of Plant
	Biology and Biotechnology, Faculty of Life Sciences, Univ. of Copenhagen, Denmark)
	Dr. H. S. PRAKASH (Coordinator of the Asian Seed Health Centre; Dept.
	of Applied Botany and Biotechnology, Univ. of Mysore, India)
	Dr. R. B. MABAGALA (Head of the African Seed Health Centre, Dept. of
	Crop Science and Production, Sokoine University of Agriculture, Morogoro,
	Tanzania)
	Mr. HOU-LIN LU (Deputy Head, Dept. of Supervision on Animal and Plant
	Quarantine, General Administration of Quality Supervision, Inspection and Quarantine, China)
	Dr. HUI-MIN WANG (President, Beijing Society for Plant Pathology, China)
	Dr. ZE-JIAN GUO (President, Chinese Society for Plant Pathology, China)

	Group photo: Move to the front of the Main building of CAU (eastern campus)
10:20-10:30	Coffee and tea
	Symposium Report: Invited Speaker
10 20 12 20	Venue: Meeting Hall (3 <sup>rd</sup> floor, Jin Ma Hotel)
10:30-12:30	Chairperson: Dr. OLE S. LUND (Head of the Danish Seed Health Centre, Dept. of Plant Biology and Biotechnology, Faculty of Life Sciences, Univ. of Copenhagen, Denmark)
10:30-11:00	(Invited Speaker-1) The Value of Seed Health Testing in Preventing Introduction and Spread of Bacterial Diseases.
	NORMAN SCHAAD. Department of Agriculture, Agriculture Research Service, Foreign Disease-Weed Science Research Unit, USA.
	(Invited Speaker-2) Improved PCR-based assays for the detection of plant pathogenic Xanthomonas.
11:00-11:30	O. S. LUND, J. ADRIKO, E. R. MBEGA, J. KUBIRIBA, V. ARITUA, R. B. MABAGALA, <u>C. N. MORTENSEN</u> . Danish Seed Health Centre for Developing Countries, Department of Plant Pathology and Biotechnology, Faculty of Sciences, University of Copenhagen, Denmark.
11:30-12:00	(Invited Speaker-3) The Role of Foundation Plant Services in the Creation
	and Distribution of Clean Plant Stock.  DEBORAH ANNE GOLINO. Foundation Plant Services, University of California at Davis, USA.
	(Invited Speaker-4) Progress of Seed and Clean Plant Quarantine in China.
12:00-12:30	SHUI-FANG ZHU, JIAN-JUN GE, MEI-SHENG WEI, HOU-LIN LU. Head of the Institute of Animal and Plant Quarantine, Chinese Academy of Inspection and Quarantine, China.
12:30-14:00	Lunch (2 <sup>nd</sup> floor, Jin Ma Hotel)
	SESSION 1:
14:00-16:00	Economic Significance of Seed-borne Diseases.
	Venue: Meeting Hall (3 <sup>rd</sup> floor, Jin Ma Hotel)
	Chairperson: Dr. H. S. PRAKASH (Coordinator of the Asian Seed Health Centre; Department of Studies in Biotechnology, University of Mysore, India)

	Economic significance of seed-borne diseases: Reports on emerging diseases or new introduced crops, the economic losses and threshold levels, e.g., biofuel, sweet sorghum, hybrid rice, climate changes; vegetatively propagated crop problems including transplants, pastures and forestry seed crops.
14:00-14:20	Seed Health Status of Farmers Saved Rice.  C. RETTINASSABABADY, T. RAMANADANE. Department of Plant Pathology, Pandit Jawaharlal Nehru College of Agriculture and Research Institute (PAJANCOA & RI), Karaikal, India.
14:20-14:40	Seed Health and Its Implications.  SIHAM ASAAD. International Center for Agricultural Research in the Dry Areas (ICARDA), Biodiversity and Integrated Gene Management Program, Aleppo, Syria.
14:40-15:00	Health Status of TLS (Truthfully Labeled Seeds) in the Markets of Bangladesh.  N. NABI, L. SULTANA, M. K. UDDIN, M. K. SIDDIQUA, A. ALI, M. B. MEAH. IPM Lab, Department of Plant Pathology, Bangladesh Agricultural University, Mymensingh, Bangladesh.
15:00-15:20	Seed-borne Neotyphodium endophytes of Grasses.  CHUN-JIE LI. College of Pastoral Agriculture Science and Technology, Lanzhou University, China.
15:20-15:40	Development of Seed Treatments for Control of Loose Smut in Barley and Wheat ( <i>U. nuda</i> , <i>U. tritici</i> ) in Organic Agriculture.  E. KOCH, J. WUNDERLE, M. ORLIK. <i>JKI</i> , Federal Research Centre for Cultivated Crops, Institute for Biological Control, Darmstadt, Germany.
16:00-17:30	Visit the Western Campus of CAU  Center for Life Sciences (CLS)
18:00-20:00	Symposium Dinner (2 <sup>nd</sup> floor, Jin Ma Hotel)  Art Performance  Chinese traditional music: College students  Tea show: Beijing Shining-herb Bio-tech Co., LTD (Mr. SI-XIN KONG)