

SASA



ISTA-Seed Health Committee
Report 2006-07
Brazil

Valerie Cockerell

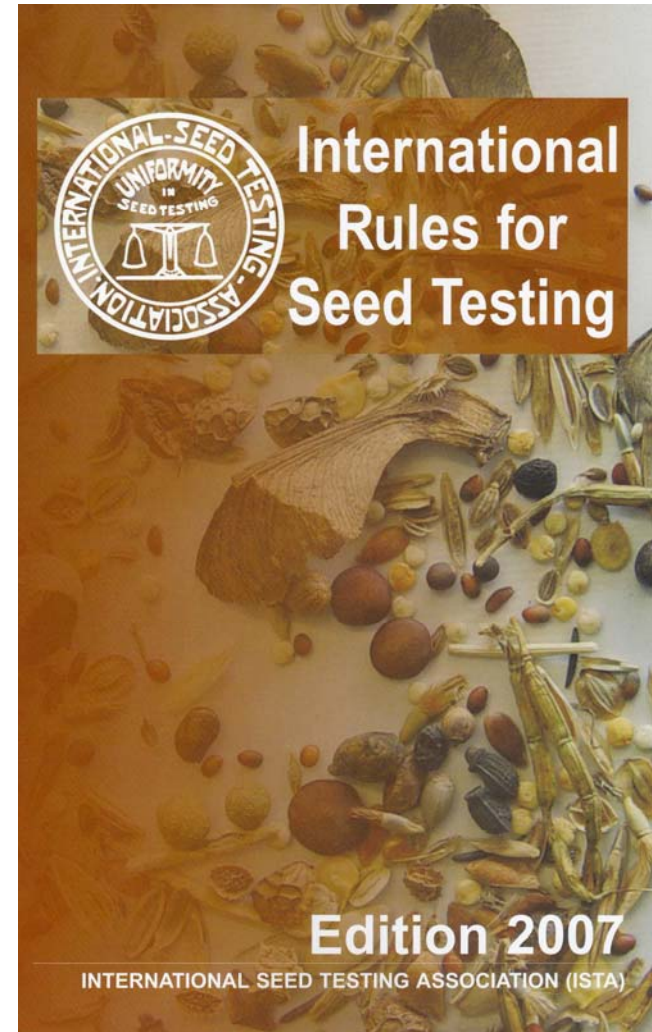
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- ❖ Rules Development & Maintenance
- ❖ Seed Health Method Validation Programme
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- ❖ Working Group Reports
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- ❖ Training Courses/Workshops

RULES DEVELOPMENT

CHAPTER 7

- ❖ Rules proposals (three new, one minor modification)
- ❖ Review of methods 2006
- ❖ Review of Methods 2007



Rules Proposals: New Method 7-022

Crop: *Triticum* spp.

Pathogen: *Microdochium nivale*

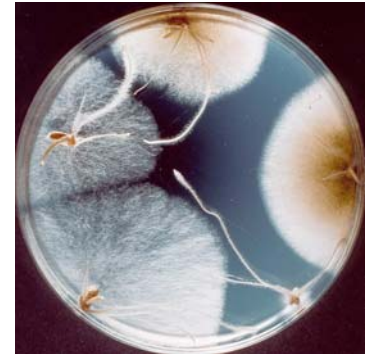
Authors: V Cockerell and A M I Roberts

Proposer: ISTA SHC WG

Submitted : September 2006

Approved: January 2007

Brief Description: Seeds pre-treated in NaOCl and plated on PDA or MA with streptomycin sulphate. Plates incubated at 20°C in the dark for 7 days. .



Rules Proposals: New Method

7-023

Crop: *Phaseolus vulgaris*

Pathogen: *Pseudomonas savastanoi* pv. *phaseolicola*

Authors: C Kurowski and P M Remeeus

Proposer: ISHI-Veg

Submitted : September 2005

Approved: February 2007

Brief Description: seed soak followed by plating on MT and MSP media with suspect colonies confirmed by pathogenicity test.



Rules Proposals: New Method

7-024

Crop: *Pisum sativum*

Pathogens: PSbMV and PEBV

Authors: H M S Koenradt and P M Remeeus

Proposer: ISHI-Veg

Submitted : November 2006

Approved: February 2007

Brief Description: Seeds ground to a fine flour and mixed with extraction buffer followed by DAS-ELISA. PSbMV and PEBV tested individually using a separate sub-sample from the seed extract and a separate microtitre plate.

Rules Proposals: Method 7-013

Ustilago nuda/Hordeum vulgare - 1

SHC Ustilago Working Group

Working Group Leader: V Cockerell

Background:



- ❖ Lactophenol not permitted in some countries.
 - ❖ Experiment to determine whether lactophenol could be replaced with a lactic acid based solution.
- Two laboratories x 3 seed lots x 4 sub-samples x 2 methods.

Review of Methods 2006 (3)

Main points

- ❖ No respondents used methods 7-008 *Caloscypha fulgens/ Picea engelmannii and Picea glauca* or 7-009 *Fusarium moniliforme var. subglutinans/ Pinus taeda and Pinus elliottii*
- ❖ 7-013 *Ustilago nuda* considered not fit for purpose by 40% of user laboratories.
(Removal of lactophenol already considered by WG)

Rules Proposals: Method 7-013

Ustilago nuda/Hordeum vulgare - 2

❖ Laboratories:

- Official Seed Testing Station for Scotland
- Austrian Agency for Health and Food Safety
Institute for Seed (Manfred Weinhappel)

❖ The experiment concluded that there was no change in test performance when lactophenol was replaced with a lactic acid solution.

Rules Proposals: Method 7-013

Ustilago nuda/Hordeum vulgare - 3

- ❖ The results of the experiment are available in ISTA Validation Reports, 2007.
- ❖ **Proposal: Minor modification change lactophenol to lactic acid solution**
- ❖ Proposed changes to method are fully described in the ISTA Rules Proposals Document 2007.



Review of Methods 2006 (1)

- ❖ Methods 7-003 – 7-014 under review in 2006
- ❖ Questionnaire available for 10 weeks (7 July 2006-15 September 2006)
- ❖ Fourteen laboratories, Europe (11), Asia (2) and USA (1), returned a completed questionnaire to the ISTA Secretariat. 13 of 14 were ISTA Member Laboratories

Review of Methods-(2) Fit for purpose?

Method	Pathogen/Crop	Laboratories using method (No.)	Fit for purpose?	
			Yes	No
7-003	<i>Botrytis cinerea/ Helianthus annuus</i>	4	3	1
7-004	<i>Leptosphaeria maculans/ Brassicaceae</i>	7	6	1
7-005	<i>Ascochyta pisi/ Pisum sativum</i>	7	6	1
7-006	<i>Colletotrichum lindemuthianum/ Phaseolus vulgaris</i>	7	7	-
7-007	<i>Botrytis cinerea/ Linum usitatissimum</i>	6	5	1
7-008	<i>Caloscypha fulgens/ Picea engelmannii and Picea glauca</i>	0	-	-
7-009	<i>Fusarium moniliforme var. subglutinans/ Pinus taeda and Pinus elliottii</i>	0	-	-
7-010	<i>Drechslera oryzae/ Oryza sativa</i>	3	2	1
7-011	<i>Pyricularia oryzae/ Oryza sativa</i>	3	2	-
7-012	<i>Alternaria padwickii/ Oryza sativa</i>	3	2	1
7-013	<i>Ustilago nuda/ Hordeum vulgare</i>	10	6	4
7-014	<i>Septoria nodorum/ Triticum aestivum</i>	7	6	1

Review of Methods 2006 (4)

Main points continued

❖ Seven further methods each considered not fit for purpose by 1 laboratory (different labs).

Various reasons, including:

- use of toxic chemicals, Method 7-004 *L. maculans* (comparative test already carried out by WG)
- multi pathogen detection
 - alignment of methods (*Linum usitatissimum* methods 7-007, 7-017 & 7-018)
 - addition of pathogens (7-005, add other pea pathogens (*M. pinodes* and *P. medicaginis* var *pinodella*))

Review of Methods 2006(5)

SHC Proposals

1. Accept all methods with new review date (2011)
2. ISTA SHC working groups set up to consider:
 - addition of pathogens to 7-005
 - amalgamation of 7-014 *Septoria nodorum* and newly proposed 7-022 *Microdochium nivale*
 - determine whether necessary to re-evaluate use of 3% malt agar in method 7-003 *Botrytis cinerea/Helianthus*.

Review of Methods 2006 (6)

SHC Proposals

4. Update sample preparation section in line with methods accepted since 2002
5. Revise seed treatment statements in line with agreed decisions SHC meeting June 2006.
6. General editing: correction of errors, update taxonomy, references to Chapter 2 and formatting where necessary.

Review of Methods 2006 (7)

Outstanding issues

- ❖ Removal of working sample sizes in line with new methods and previous SHC policy rejected by ECOM until further discussion.
- ❖ Seed treatment statements to be further discussed within SHC.

Review of Methods 2007

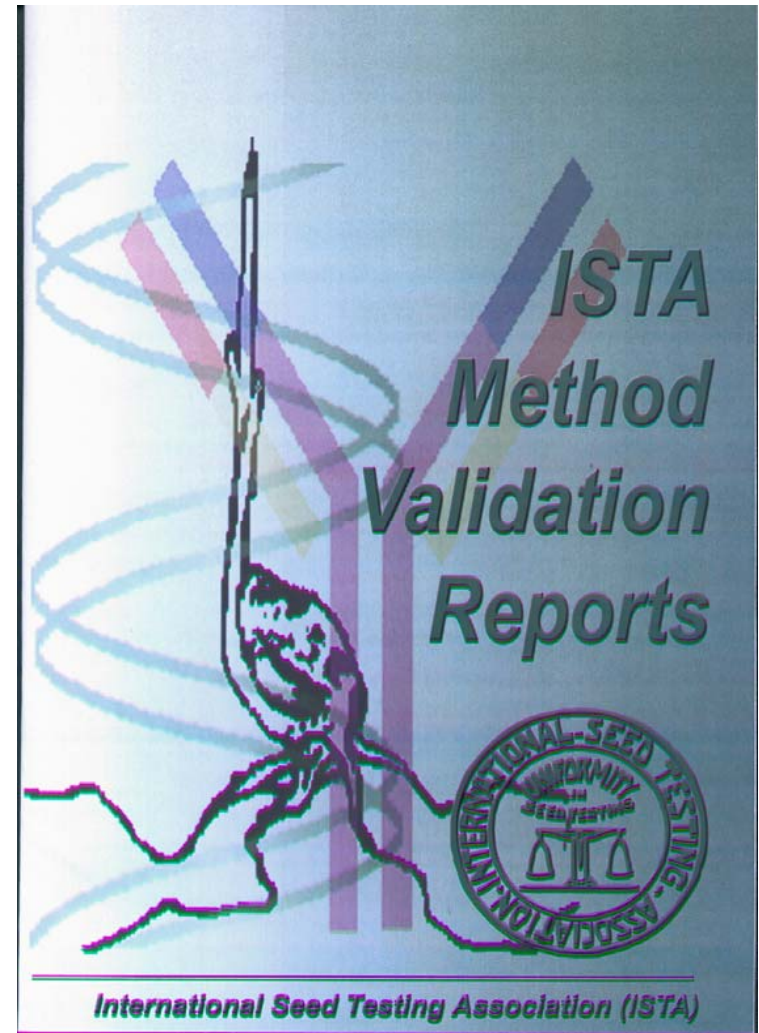
- ❖ Eight methods being reviewed.
- ❖ Questionnaire available at www.seedtest.org

Closing date: **31 July 2007**

Method No.	Pathogen	Host
7-001a (Blotter)	<i>Alternaria dauci</i>	<i>Daucus carota</i>
7-001b (Malt agar)	<i>Alternaria dauci</i>	<i>Daucus carota</i>
7-002 a (Blotter)	<i>Alternaria radicina</i>	<i>Daucus carota</i>
7-002b (Malt agar)	<i>Alternaria radicina</i>	<i>Daucus carota</i>
7-015	<i>Neotyphodium spp.</i>	<i>Festuca and Lolium spp.</i>
7-016	<i>Phomopsis complex</i>	<i>Glycine max</i>
7-017	<i>Alternaria linicola</i>	<i>Linum usitatissimum</i>
7-018	<i>Colletotrichum lini</i>	<i>Linum usitatissimum</i>

Method Validation Programme

- ❖ Methods in Programme
- ❖ Method Validation Process



Seed Health MVP: Methods submitted

- ❖ All methods submitted in 2006 have been proposed as rules.
- ❖ No methods currently in Seed Health MVP

Seed Health MV: Procedures

- ❖ Instructions to Authors reviewed no changes made
 - instructions need to be made available in every issue of ISTA Method Validation Reports
- ❖ Instructions to Reviewers question added
 - *“Is the Method proposed fully justified by Validation Report”*

Seed Health MV: Procedures

- ❖ Introduction of Validation Report Advisor
 - Terry Aveling, University of Pretoria (positive response to service)

- ❖ A Seed Health/Statistics Workshop to be organised to discuss appropriate statistics and development of statistical methods in three main areas: Validation, Proficiency and U of M.
 - place Edinburgh date to be agreed.

Proficiency Testing

- ❖ First test completed Method 7-003 *Botrytis cinerea/Helianthus annuus*.
- ❖ Two further tests being prepared.
 - 7-013 *Ustilago nuda* and
 - 7-005 *Ascochyta pisi*.
- ❖ One bacterial test (possibly Xcc) to be organised.
- ❖ Consider charge to take part in SH proficiency tests.
- ❖ Please inform V Cockerell of availability of Infected Seed stocks valerie.cockerell@sasa.gsi.gov.uk

Summary of *Botrytis cinerea* Proficiency Test

- ❖ Artificial contamination: seed lot spiked with artificially contaminated seeds
- ❖ 4 levels: healthy, low, medium, high
- ❖ 3 replicates per level: 12 samples
- ❖ 400 seeds per lot
- ❖ 11 accredited labs, 13 non accredited labs
- ❖ Countries: 19, 12 in UE, 7 out of UE (Argentina, China, Israel, Japan, New Zealand, Philippines, Paraguay)
- ❖ Test finished in organizing lab
- ❖ Results begin to be received from participating labs



Working Group Reports (1)

Working Group	Leader	Progress	Proposed finalisation
<i>L. maculans</i>	Jane Thomas	Data passed to V Cockerell to complete report.	Submission to MVP July 2007
<i>Aphelenchoides besseyi</i> Christie / <i>Oriza sativa</i>	Petra Remeeus	Comparative Test samples sent to participating laboratories April 2007	2007
SqMV / <i>Cucumis melo</i>	Harrie Koenraad	Comparative test samples sent to participating laboratories 2006	2007

Working Group Reports (2)

Working Group	Leader	Progress	Proposed finalisation
<i>Sclerotinia sclerotiorum</i> / <i>Phaseolus</i> spp.	Jose Machado	Timing of preliminary test being considered by ABRATES Seed Pathology Group May 2007	2008
<i>Ustilago nuda</i>/<i>Hordeum vulgare</i>	Valerie Cockerell	Lactophenol experiment completed. Initiate comparison of Method 7-013 with scandinavian method	2008
<i>Pyrenophora</i> spp. / <i>Hordeum vulgare</i>	Karin Sperlingsson	Comparative test samples dispatched to laboratories March 2007	2007
<i>Molecular biology WG</i>	Kathy Ophelkeller	Completed Chapter for Seed Health Handbook	Work ongoing.

Seed Health Handbook: Progress

- ❖ Most first draft chapters received and reviewed by Editorial Committee (V Cockerell, R Blanco, J Sheppard, K Tylkowska, K Sperlingsson).
- ❖ Missing components identified
 - Immunology and Storage Chapters,
 - Trouble shooting diagrams (bacteriology, virology, nematology), appropriate illustrative photographs and descriptive texts
 - Full glossary
- ❖ Organisation of Handbook described.

Example: Fungal Testing Section

- ❖ Brief description of method types
 - E.g. Seed washing, blotter, agar plate
 - Advantages/disadvantages of each method type
 - Trouble shooting for each method
 - Quality control specific to method
- ❖ General techniques (microscopy)
- ❖ Identification aids (basic)
 - Cultural characteristics
 - Morphological structures
- ❖ Fact sheets (Genus specific references e.g. *Alternaria* spp. to aid identification)
- ❖ Culture maintenance and preservation

Seed Health Handbook

Section: General techniques

- Aseptic technique
- Media preparation
- Microscopy techniques
- Centrifugation
- Molecular techniques
- Immunological techniques

Handbook: Next Steps

- ❖ Gather missing photographs/diagrams
- ❖ Identify who is going to complete missing sections or any additional sections.
- ❖ Second draft to be completed by 31 July 2007
- ❖ Send completed second draft for comment to full SHC and ISHI groups by 31 August 2007
- ❖ Editorial Meeting December 2007
- ❖ Final Copy for April 2008??

Seed Health Symposia

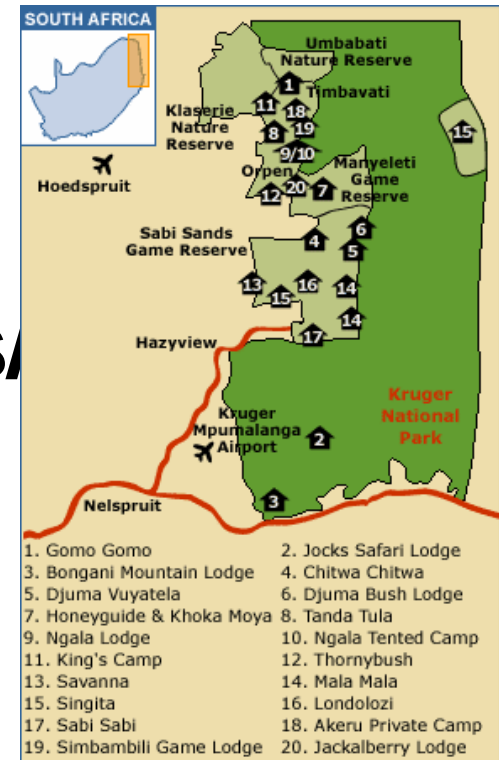
6th ISTA Seed Health Symposium

Kruger National Park, South Africa

14 - 18 April 2008

First Announcement Available

www.up.ac.za/conferences



Training Courses 2006/2007

ISTA/APSA/AVDRC Training Course

18-22 July 2006, Kasetsart University, Bangkok, Thailand

Instructors: Valerie Cockerell, Dr Steve Roberts, Plant Health Solutions, Dr Somsiri Sangchote, Kasetsart University.

Local Organiser: Mr Efren Altoveros

Participants: 19 from 7 countries (Australia, India, Japan, Phillipines, South Korea, Thailand & Vietnam)

Many thanks to all involved!



Training Courses 2006/2007

ISTA/APSA/FAO Training Course

19-23 February 2007 BPI-NSQCS, Quezon City, Philippines.

Instructors: Dr Steve Roberts, Plant Health Solutions
Dr Rick Mumford, CSL

Local Organiser: Ms Jane Bartolini

Participants: 18 from 10 countries (Afghanistan, Bangladesh, Egypt, China(Hong Kong), Korea, Malaysia, Sri Lanka, Taiwan, Thailand, Philippines)

Many thanks to all involved!



MY THANKS to SHC 2004-07

Theresa Aveling
Reyes Blanco Prieto
Henrik Hansen
Dragica Ivanović
Harrie Koenraad
Valérie Grimault
Carmi Omero
Kathy Ophelkeller
Petra Remeus
Karin Sperlingson
Krystyna Tylkowska
Manfred Weinhappel
Jose da Cruz Machado



MY SPECIAL THANKS to

ISTA Secretariat especially

Bettina Kahlert.

Adrian Roberts, Sylvain
Gregoire & Jean-Louis Laffont

Steve Jones

Steve Roberts

All Method Validation
Reviewers

Staff at OSTS Scotland and
my family for their support
and

finally to Terry for taking over!



Staff OSTS Scotland