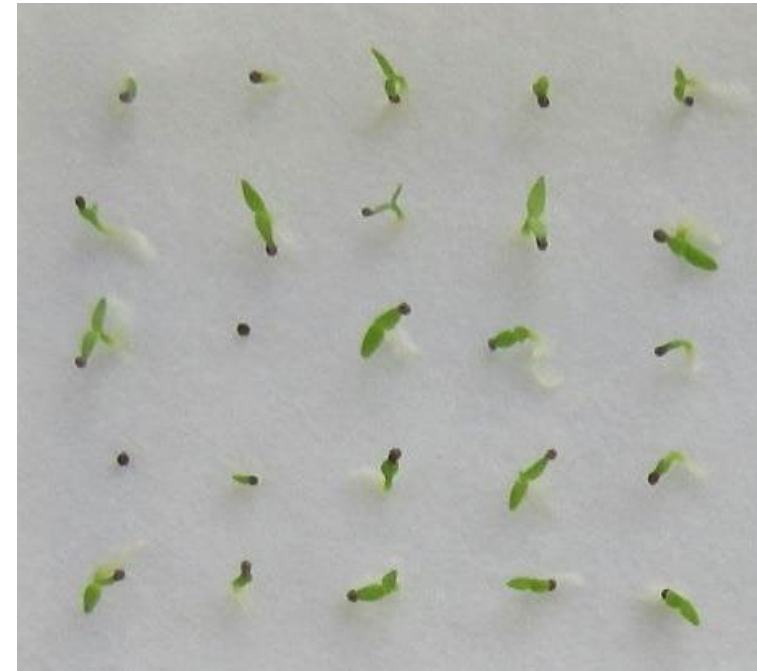


**ISTA GERMINATION COMMITTEE
ACTIVITY REPORT 2022-2023**

Presenter: Gillian Musgrove
Location: Verona, Italy
Date: 30 May 2023

ISTA GERMINATION COMMITTEE ACTIVITY REPORT 2022 - 2023

- Germination Committee Members
- Rules Proposals
- Method Development
- Proficiency Testing
- Publications
- Special Projects
- Workshops
- Open Meeting
- Acknowledgments



MEMBERSHIP



CHAIR	Gillian Musgrove	United Kingdom
VICE-CHAIR	David Johnston	United States of America
	Ignacio Aranciaga	Argentina
	Janek Bartel	Canada
	Sarah Dammen	United States of America
	Gill Durrant	United Kingdom
	Meriam Dekalo-Keren	Israel
	Sylvie Ducournau	France
	Erik van Egmond	Netherlands
	Lesly Gonzalez	Chile
	Aidin Hamidi	Iran
	Andrea Jonitz	Germany
	Augusto Martinelli	Argentina
	Dot Vittrup Pedersen	Denmark
	Melissa Phillips	United States of America
	Takayuki Okuda	Japan (re-joined December 2022)
	Elena Perri	Italy (joined December 2022)

Germination Rule Proposals



- **C.5.1 Revision of retesting when fresh seed is present**
- **C.11.2 Revision of Chapter 11, Testing Coated Seeds, germination related sections**
- **C.13.1 Revision of Chapter 13, Testing Seeds by Weighted Replicates, germination related sections**
- **Editorial Change – Table 5A (double tests), column number corrected**
- **Editorial Change – change of alphabetical order:**

<i>Centrosema pascuorum</i>	TP	35	3	7	–
<i>Centrosema molle</i>	TP	20 \leftrightarrow 35	4	10	–

C.5.1 Revision of retesting when fresh seed is present



- Currently the ISTA Rules require retesting using a dormancy breaking treatment when 5% or more fresh ungerminated seeds are found at the end of a test. The initial germination test is deemed “unsatisfactory” and cannot be reported until retesting has taken place.
- This rule proposal offers an alternative by allowing laboratories to report the initial germination test result including the % fresh ungerminated seeds (once determined to be fresh) instead of having to go to automatically retest.
- This follows the same principle as reporting % hard seeds.
- Allows flexibility and may be very useful for native or wild species where a high level of fresh seeds would be expected.

Germination Rule Proposals

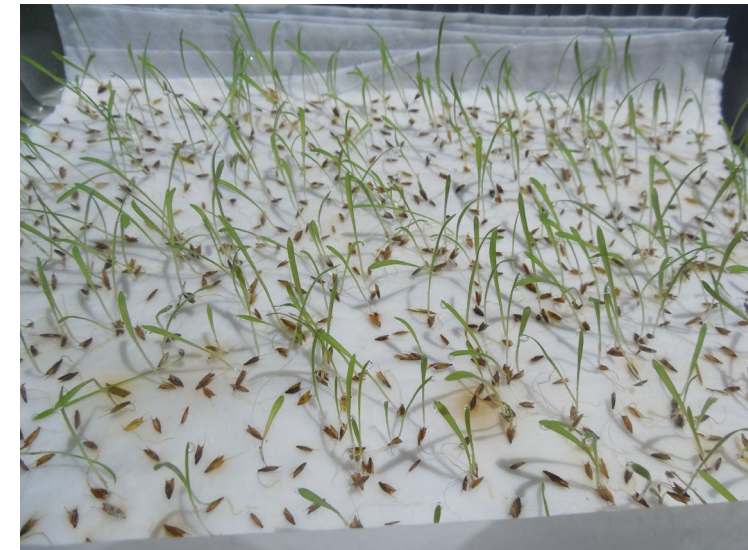


- **C.11.2 Revision of Chapter 11, Testing Coated Seeds, germination related sections**
- **PURE SEEDS** - Clarification that pelleted seeds for germination tests must be made with pellets from the pure pellet fraction of a purity test or pure pellets from a representative fraction of the submitted sample.
- **REPORTING** – Clarification to report the percentage of pellets or seed in tapes with % normal seedlings, % abnormal seedlings, % hard seeds, % fresh seeds and % dead seeds.
- **REPORTING** – Possibility to include the % of coated seeds that did not contain a seed in ‘Other Determinations’.

Germination Rule Proposals



- **C.13.2 Revision of Chapter 13, Testing Seeds by Weighted Replicates, germination related sections**
- **REPORTING** – the number of normal seedlings in the total weight of seed tested must be reported under ‘Other Determinations’.
- Provides clearer information on the germination of the seed lot.



Method Development - ongoing

- Some examples are.....



- Method Validation Study in progress for **the pre-washing of *Beta vulgaris* by soaking** (Lesly Gonzalez, Chile) – germination tests completed and statistical analysis underway.
- Method Validation Study in progress for **a germination method for *Diplotaxis spp.*** (Erik van Egmond, Netherlands) – test plan approved, seed lots to be sourced.
- Method Validation Study germination method for ***Vachellia erioloba* [Persian Camelthorn]** (Aidin Hamidi, Iran) – seed lots from different areas to be sourced and a draft test plan to be written.

Method Development - ongoing



- And some more
- Method Validation Study (Peer Validated Test Method) for the **addition of 20°C** for ***Solanum tuberosum* [True Potato Seed]** (Erik van Egmond, Netherlands) – test plan prepared and seed lots to be sourced.
- Preliminary work on methods to efficiently break ***Helianthus annuus* [Sunflower]** **seed dormancy** (Sylvie Ducournau, France).
- Preliminary work on ***Zea mays* [Maize]** to examine the possibility of defining **evaluation criteria of the secondary root system, identifying a minimum number and length of secondary roots to allow a seedling to be normal** (Aidin Hamidi, Iran & Marija Milivojevic, Republic of Serbia).
- Preliminary work on the **optimal amount of water required to be added to media for germination testing *Spinacia oleracea* [Spinach]** (Takayuki Okuda, Japan).

Method Development - Unsuccessful



When things do not go so well.....

- Method Validation Study for the addition of 20 \leq 30 for *Papaver somniferum* (Vladislava Gregorová, Czechia) – results were not repeatable and reproducible.
- Method Validation Study for the addition of germination method for *Basella alba* [Malabar Spinach] (Roopa Anantareddy and Sue Alvarez, USA) based on the work carried out by AOSA laboratories – results were not reproducible at the 14 day count.

Unfortunately both Method Validation Studies were unsuccessful.

Proficiency Tests



Round	Species	Test round scope	Crop group number	Crop group
PT22-1	<i>Glycine max</i>	GER	4	Pulses
PT22-2	<i>Spinacia oleracea</i>	PUR, OSD, GER	6	Vegetables, spices, herbs, and medicinal species
PT22-3	<i>Lolium perenne</i>	PUR, OSD, GER, TZ, OIC	1	Grasses

Thank you to the organisers of each round
suppliers of the seed
Didier Demilly
Branka Opra

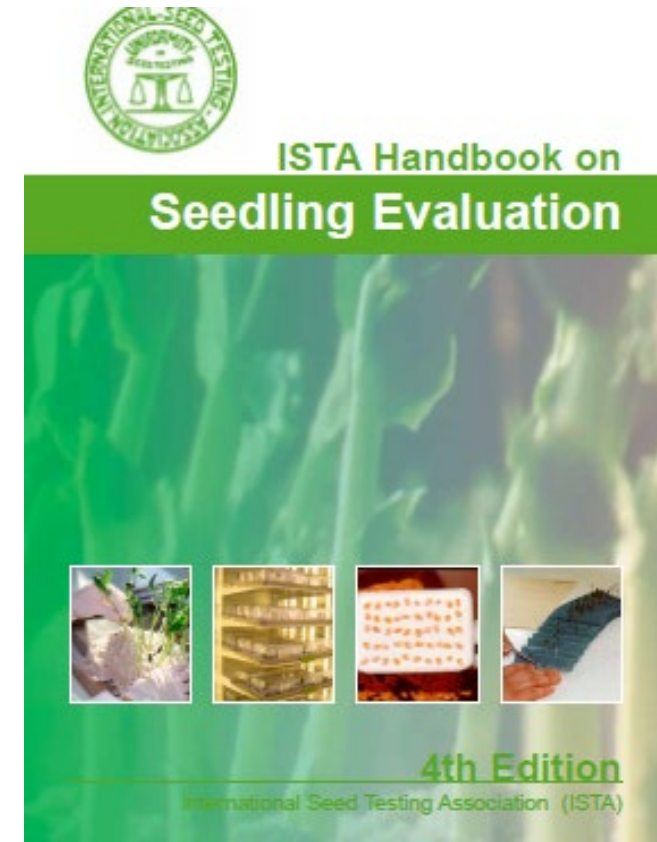
ISTA Handbook on Seedling Evaluation

Spanish translation

Augusto Martinelli

Translated and soon to be published

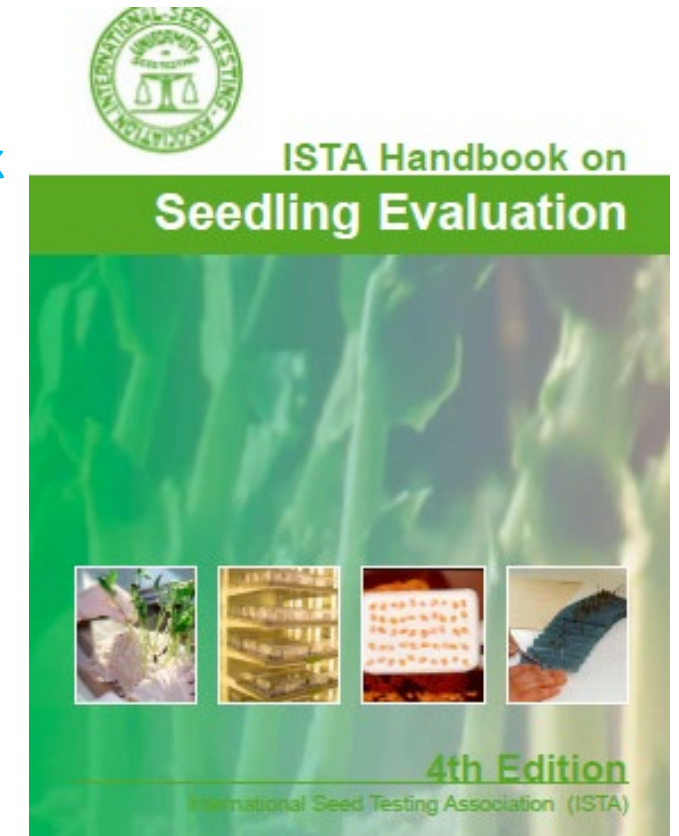
**Many thanks to Augusto for his hard work and
commitment to translating the Handbook**



Update Seedling Images for Handbooks and Training as a Basis for Regular Image Collection

Leader – Janek Bartel

- Aim is to update the images currently held in the ISTA Handbook on Seedling Evaluation.
- Many images have been captured and approval of the images to be finalised by the Germination Committee.
- The Germination Committee are very grateful to members who have sent Janek seed showing abnormalities and for Janek's continued enthusiasm and contribution to this project.



Taken place.....

- Seed Sampling, Purity, and Germination – Hyderabad, India, November 2022, **Eddie Goldschagg, Sue Cousins, Sylvie Ducournau**
- Germination – Chilanga, Zambia, April 2023, **Augusto Martinelli, Melissa Phillips**

To come.....

- Germination – Bucharest, Romania, September 2023, **Augusto Martinelli, TBD**
- Germination and Tetrazolium – Palmerston North, New Zealand, November 2023, **Augusto Martinelli, Sergio Pasquini**

Further workshops to be organised

Germination Open Meeting



Tuesday 31 May 2023, 13:30, Poschielli Room

Agenda

1. **Welcome – Gillian Musgrove**
2. **Information regarding rule proposal C.5.1 Revision of retesting when fresh seed is present – David Johnston**
3. **Special Project on Imaging Update – Janek Bartel**
4. **Questions – All**

EVERYONE WELCOME!

Special thanks to...

- All members of the Germination Committee
- The ISTA Secretariat
- The Statistics Committee, Proficiency Test Committee and all the other Committees for their support and collaboration
- ECOM
- Our ECOM Liaison Officers, Sylvie Ducournau and Ruel Gesmundo



Thank you!

Follow us on social media:

