

Report of the Proficiency Test Committee

by Günter Müller

Committee Members

- Günter Müller (Chair)
- Didier Demilly (Vice Chair)
- Caroline Cadger
- Sharon Davidson
- Ronald Don
- Timothy Gutormson
- Mari Jürman
- Joël Léchappé
- Pamela Strauss*
- Rita Zecchinelly
- Joane Hinke**
- Sylvia Zanettie**

*till 2008

**from 2008

Summary and discussion of the Proficiency Test rounds 04-2 to 07-1

In-round rating system for germination, moisture and tetrazolium

Score	Sum of absolute Z-scores
A	Sum of absolute Z-scores ≤ 3.5
B	$3.5 < \text{Sum of absolute Z-scores} \leq 5.3$
C	$5.3 < \text{Sum of absolute Z-scores} \leq 7.0$
BMP	Sum of absolute Z-scores > 7.0

Thresholds based on the actual retrieval rate

Total retrieval rate (%)	Assigned value
≥ 90	3
≥ 85	2
≥ 80	1

In-round rating for other seed determination

Score	Percentage of retrieved and identified seeds
A	≥ 90
B	≥ 80
C	≥ 70
BMP	< 70

Overall rating based on in-round rating values

Score	Attributed value	Overall score	Range
A	5	A	28-30
B	4	B	21-27
C	3	C	16-20
BMP	0	BMP	below 16

Proficiency Test Rounds in 2004

Round	Species	Tests
04-1	<i>Brassica napus</i>	P, G, OSD
	<i>Triticum aestivum</i>	M, TZ
04-2	<i>Helianthus annuus</i>	G
04-3	<i>Phleum pratense</i>	P, G, OSD, OIC

Proficiency Test Rounds in 2005

Round	Species	Tests
05-1	<i>Cynodon dactylon</i>	Withdrawn from evaluation
	<i>Zinnia</i>	G
05-2	<i>Secale cereale</i>	P, G, OSD, M, OIC
05-3	<i>Capsicum annuum</i>	Withdrawn from evaluation
	<i>Pisum sativum</i>	Vigour

Proficiency Test Rounds in 2006

Round	Species	Tests
06-1	<i>Sorghum bicolor</i>	P, G, OSD, OIC
06-2	<i>Beta vulgaris</i>	P, G, OSD
06-3	<i>Phaseolus vulgaris</i>	G

Proficiency Test Rounds in 2007

Round	Species	Tests
07-1	<i>Panicum maximum</i>	P, G, OSD, TZ, OIC
	<i>Helianthus annuus</i>	Seed Health
07-2	<i>Medicago sativa</i> *	P, G, OSD, M, TZ
07-3	<i>Raphanus sativus</i> *	P, G, OSD

*in preparation

Number of Species contained in the ISTA Universal Species List

Species	ISTA Universal Species List	Proposed to ISTA List of Stabilized Plant Names
Weed	83	10
Crop	47	2
Sum	130	12

Test Round 04-2

Phleum pratense Lot 1

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Anthemis cotula</i>	4	96.2	Yes	Yes
<i>Lotus corniculatus</i>	2	92.6	Yes	Yes
<i>Panicum capillare</i>	3	95.3	Yes	Yes
<i>Silene noctiflora</i>	2	98.4	Yes	Yes

Test Round 04-2

Phleum pratense Lot 2

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Plantago major</i>	2	90.2	Yes	Yes
<i>Poa pratensis</i>	4	95.4	Yes	Yes
<i>Tripleurospermum perforatum</i>	2	92.4	Yes	Yes

Test Round 04-2

Phleum pratense Lot 3

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Capsella bursa-pastoris</i>	4	92.4	Yes	Yes
<i>Cirsium arvense</i>	2	97.3	Yes	Yes
<i>Echinochloa crus-galli</i>	2	97.3	Yes	Yes
<i>Trifolium repens</i>	2	98.4	Yes	Yes

Test Round 05-1

Cynodon dactylon Lot 1

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Portulaca oleracea</i>	4	89.1	Yes	Yes
<i>Holcus lanatus</i>	3	73.3	Yes	Yes
<i>Setaria pumila</i>	3	92.1	Yes	No*
<i>Phalaris arundinacea</i>	2	90.6	No	Yes

*Genus only

Test Round 05-1

Cynodon dactylon Lot 2

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Eleusine indica</i>	3	75.6	Yes	Yes
<i>Panicum maximum</i>	3	52.5	Yes	Yes
<i>Echinochloa crus-galli</i>	2	93.6	Yes	Yes
<i>Rumex crispus</i>	2	97.0	Yes	Yes

Test Round 05-1

Cynodon dactylon Lot 3

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Setaria italica</i>	3	76.6	No*	Yes
<i>Polygonum convolvulus</i>	2	90.6	Yes	Yes
<i>Digitaria ischaemum</i>	4	85.5	No*	No*

*Genus only

Test Round 05-2

Secale cereale Lot 1

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Triticum aestivum</i>	4	99.1	Yes	Yes
<i>Bromus hordeaceus</i>	5	94.2	Yes	Yes
<i>Sinapis alba</i>	4	92.2	Yes	Yes

Test Round 05-2

Secale cereale Lot 2

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Hordeum vulgare</i>	5	96.2	Yes	Yes
<i>Lolium sp.</i>	5	97.4	Yes	Yes
<i>Galium aparine</i>	4	91.1	Yes	Yes

Test Round 05-2

Secale cereale Lot 3

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Avena sativa</i>	5	94.8	Yes	Yes
<i>Avena fatua</i>	3	90.2	Yes	Yes
<i>Tripleurospermum perforatum</i>	5	97.0	Yes	Yes

Test Round 06-1

Sorghum bicolor Lot 1

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Amaranthus retroflexus</i>	4	89.3	Yes	Yes
<i>Pennisetum glaucum</i>	2	51.7	Yes	Yes
<i>Setaria pumila</i>	4	87.8	Yes	No*

Test Round 06-1

Sorghum bicolor Lot 2

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Echinochloa crus-galli</i>	3	89.3	Yes	Yes
<i>Triticum aestivum</i>	4	95.5	Yes	Yes
<i>Setaria viridis</i>	3	87.3	Yes	Yes

Test Round 06-1

Sorghum bicolor Lot 3

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Avena fatua</i>	2	95.9	Yes	Yes
<i>Sorghum halepense</i>	2	91.3	Yes	Yes
<i>Bromus inermis</i>	4	83.3	No*	Yes

*Genus only

Test Round 06-2

Beta vulgaris Lot 1

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Helianthus annuus</i>	4	92.7	Yes	Yes
<i>Triticum aestivum</i>	3	98.3	Yes	Yes
<i>Medicago sativa</i>	2	85.4	Yes	Yes

Test Round 06-2

Beta vulgaris Lot 2

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Avena sativa</i>	4	96.0	Yes	Yes
<i>Polygonum convolvulus</i>	3	76.4	Yes	Yes
<i>Convolvulus arvensis</i>	2	91.7	Yes	Yes

Test Round 06-2

Beta vulgaris Lot 3

Species	Added Seeds	Retrieved %	ISTA Universal List	Stabilized Plant Names
<i>Daucus carota</i>	4	89.4	Yes	Yes
<i>Hordeum vulgare</i>	3	98.1	Yes	Yes
<i>Cichorium intybus</i>	2	87.5	Yes	Yes

Advices for Proficiency Test Leaders regarding OSD

- Seeds of the same genus as the species tested shall not be added, have to identified only to the genus level.
- More than 60 % of the seeds must be included in the ISTA Universal Species List. All species must be on the ISTA List of Stabilized Plant Names.

- Not less than two seeds of each species and not more than six seeds of a weed or crop species should be added to a sample.
- The seeds must be typical for the species with regard to shape and colour.
- The other seeds must be heat treated.

Advice to the Participating Laboratories regarding OSD

- The participants have to report the scientific name of other seeds using the ISTA List of Stabilized Plant Names. Synonymes are not accepted.

Advice for Proficiency Test Leaders regarding Germination

- Seed lots for Proficiency Test Rounds shall not be damaged in order to avoid special kinds of abnormal seedlings.
- Seed should be free from diseases or saprophytes influencing the germination.
- Samples of *Arachis hypogaea* and *Beta vulgaris* should be sent to the participants with a fungicide treatment. This avoids that two sets of results are to be evaluated

Proposed Proficiency Test Rounds 2008-2010

ISTA Proficiency Test Programm Plan 2008

Round	Group	Species	Tests*
08-1	1	<i>Lolium multiflorum</i>	P, G, OSD, M, TZ, OIC
08-2	2	<i>Zea mays</i>	G
	8	<i>Portulaca oleracea</i>	P, G, OSD
08-3	2	<i>Daucus carota</i>	P, G, OSD

*P-Purity; G-Germination; OSD- Other Seed Determination; M-Moisture; TZ-Tetrazolium; OIC-Orange International Certificate

ISTA Proficiency Test Programm Plan 2009

Round	Group	Species	Tests*
09-1	2	<i>Hordeum vulgare</i>	P, G, OSD, TZ
09-2	5	<i>Linum usitatissimum</i>	P, G, OSD
09-3	2	<i>Oryza sativa</i>	P, G, OSD, OIC

*P-Purity; G-Germination; OSD- Other Seed Determination; M-Moisture; TZ-Tetrazolium; OIC-Orange International Certificate

ISTA Proficiency Test Programm Plan 2010

Round	Group	Species	Tests*
10-1	6	<i>Agrostis sp.</i>	P, G, OSD
10-2	3	<i>Medicago lupulina</i>	P, G, OSD, TC, OIC
10-3	4	<i>Vicia faba</i>	G, M

*P-Purity; G-Germination; OSD- Other Seed Determination; M-Moisture; TZ-Tetrazolium; OIC-Orange International Certificate

Seed Health Proficiency Test Rounds

Pathogen	Seed Species
<i>Ustilago nuda</i>	<i>Hordeum vulgare</i>
<i>Ascochyta pisi</i>	<i>Pisum sativum</i>
<i>Xanthomonas hortorum</i> pv. <i>carotae</i>	<i>Daucus carota</i>

Seed Vigour Proficiency Test Round

Vigour Test	Species
Conductivity	<i>Pisum sativum</i>

Thank you for your attention!