



INTERNATIONAL SEED TESTING ASSOCIATION (ISTA)

Secretariat, Zürichstrasse 50, 8303 Bassersdorf, CH-Switzerland

Phone: +41-44-838 60 00, Fax: +41-44-838 60 01, Email: ista.office@ista.ch, <http://www.seedtest.org>

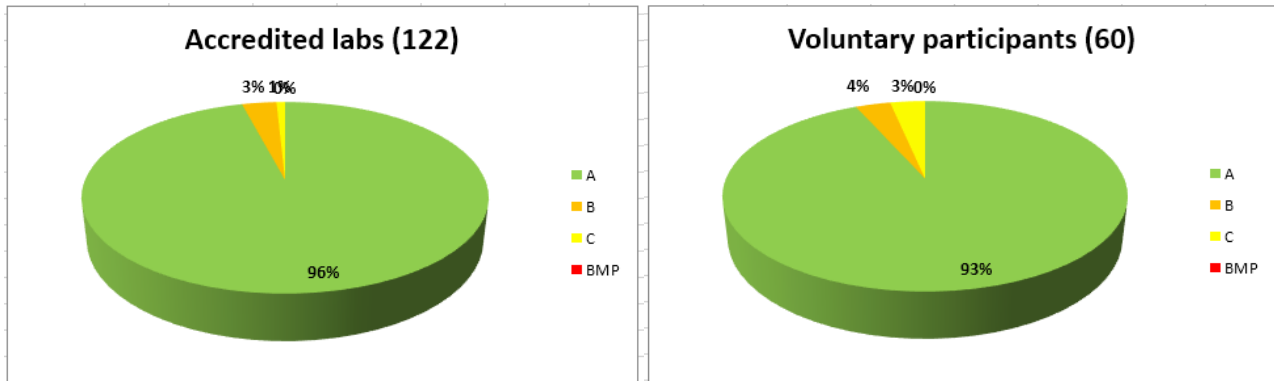
Summary results: PT 19-3 H.vul

Species: *Hordeum vulgare*

Scope: PUR, OSD, GER, TZ

PURITY Ratings

Total number of participants = 182



Means and Standard Deviation

of the obligatory accredited participants
calculated for the category of pure seed

Categories	Mean Values %			Standard Deviation		
	Lot 1	Lot 2	Lot3	Lot 1	Lot 2	Lot 3
Pure seed	99.7	99.8	99.8	0.11	0.10	0.10
Other seed	0.1	0.1	0.0	-	-	-
Inert matter	0.2	0.1	0.2	-	-	-



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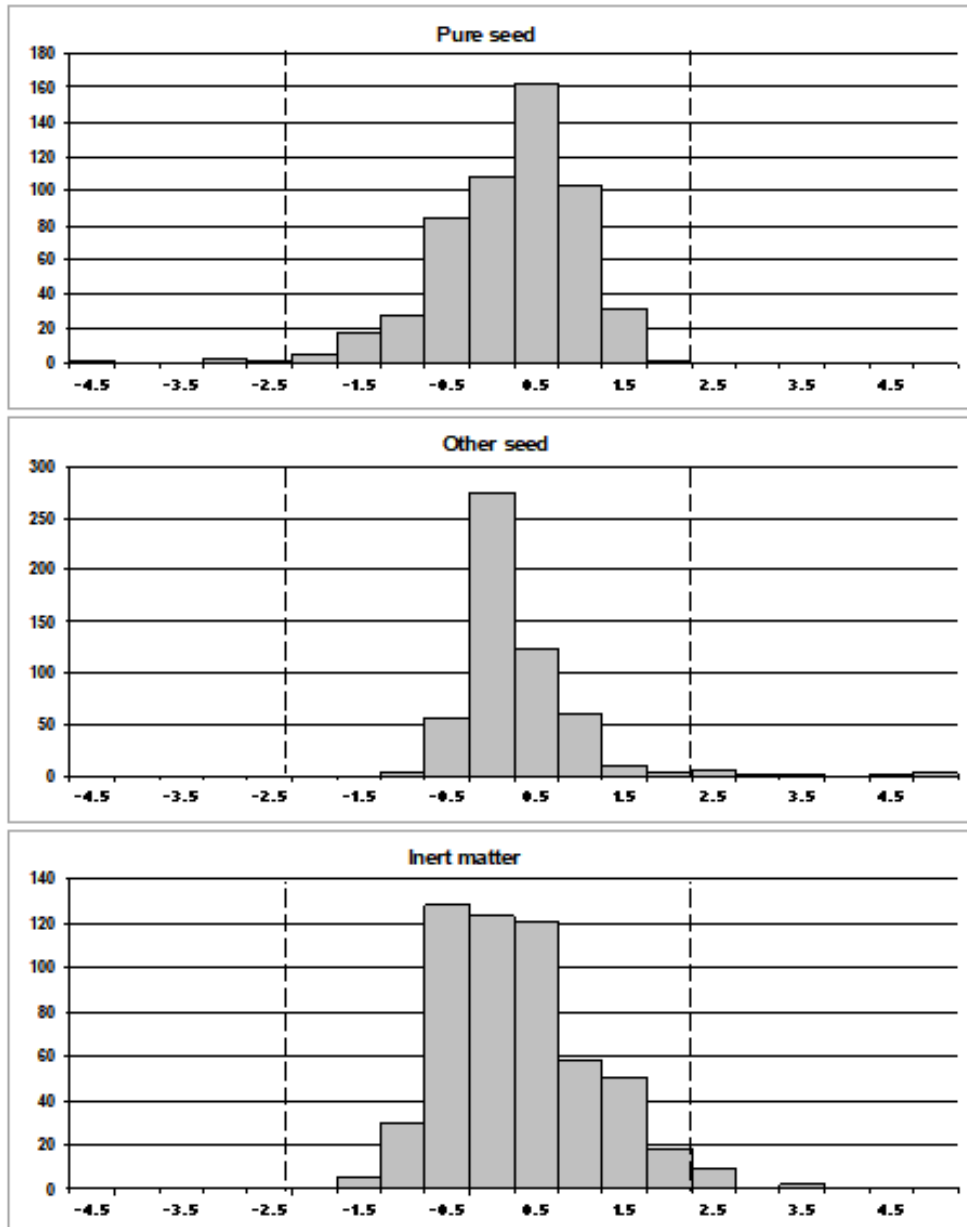
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Z-score Distribution

Species: *Hordeum vulgare*

Scope: Purity

The following histograms show the frequency distributions of all participants Z-Scores for the relevant components, i.e. **Pure seed** and **Inert matter** and **Other seed**. The Z-Scores from all three samples are included in each histogram. For further explanations, please refer to the document 'The ISTA Proficiency Test Programme'





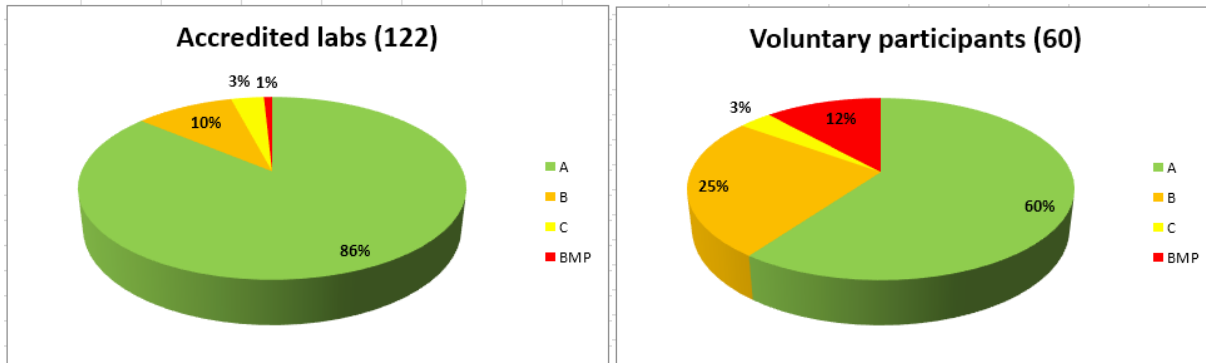
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OSD Ratings

Total number of participants = 182



Retrieval rates

Species: *Hordeum vulgare*

Scope: Other Seed Determination

Average of seeds retrieved and identified correctly

The following table shows the retrieval rates of each species added by the test leader prior to sample dispatch. Every species that was added is assigned a value based on the actual retrieval rate of all seeds added. Thresholds are as follows:

- >=90 % -> 3
- >=85 % -> 2
- <85 % -> 1

This score is multiplied with the number of seeds your laboratory reported and identified correctly. The percentage of retrieved and identified seeds is then determined and does define the in-round rating. The thresholds are as follows:

- >=90 % -> A
- >=80 % -> B
- >=70 % -> C
- <70 % -> BMP

For further details please refer to the document: "The ISTA Proficiency Test Programme".

Lot #	Species name	# of seeds added	Average # of seeds found	Retrieval rate [%]	Assigned value
Lot 1	1 <i>Avena sativa</i>	3	2.6	87.5	2
	2 <i>Medicago sativa</i>	4	3.4	84.3	1
	3 <i>Sorghum bicolor</i>	4	3.4	85.9	2
Lot 2	1 <i>Bassia scoparia</i>	2	1.1	55.0	1
	2 <i>Fagopyrum esculentum</i>	2	1.7	87.1	2
	3 <i>Phleum pratense</i>	4	2.9	72.9	1
	4 <i>Setaria pumila</i>	3	2.6	85.8	2
Lot 3	1 <i>Echinochloa esculenta</i>	4	3.4	84.3	1
	2 <i>Persicaria lapathifolia</i>	2	1.7	82.7	1
	3 <i>Thlaspi arvense</i>	3	2.6	88.0	2



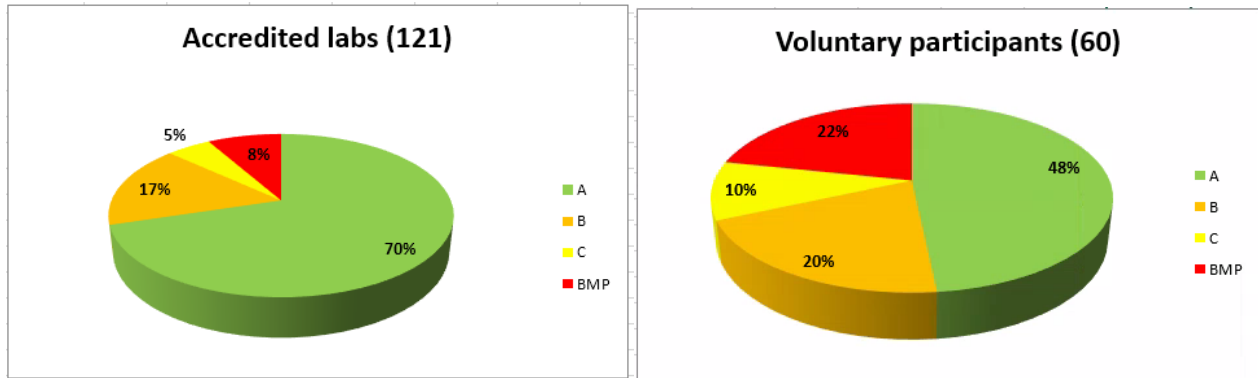
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GERMINATION Ratings

Total number of participants = 181



Means and Standard Deviation

of the obligatory accredited participants
calculated for the category of normal seedlings

Categories	Mean Values %			Standard Deviation		
	Lot 1	Lot 2	Lot 3	Lot 1	Lot 2	Lot 3
Normal seedlings	95	98	94	1.53	0.74	1.35
Abnormal seedlings	3	1	2	-	-	-
Non-germinated seed	2	1	4	-	-	-

Method used

overview for all participants
presented for the temperature, substrate and pretreatment

Temperature °C	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
20	119	59	178
25*	1	1	2
20<=>30*	1		1

* not in accordance with the ISTA Rules



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Substrate	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
BP	90	44	134
Sand	18	10	28
PP	13	4	17
TP and Soil*	1	1	2

* not in accordance with the ISTA Rules

Pretreatment	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
No Treatment	65	51	116
Prechill	40	14	54
KNO3	4	2	6
Prechill+GA3	3		3
GA3	1	1	2



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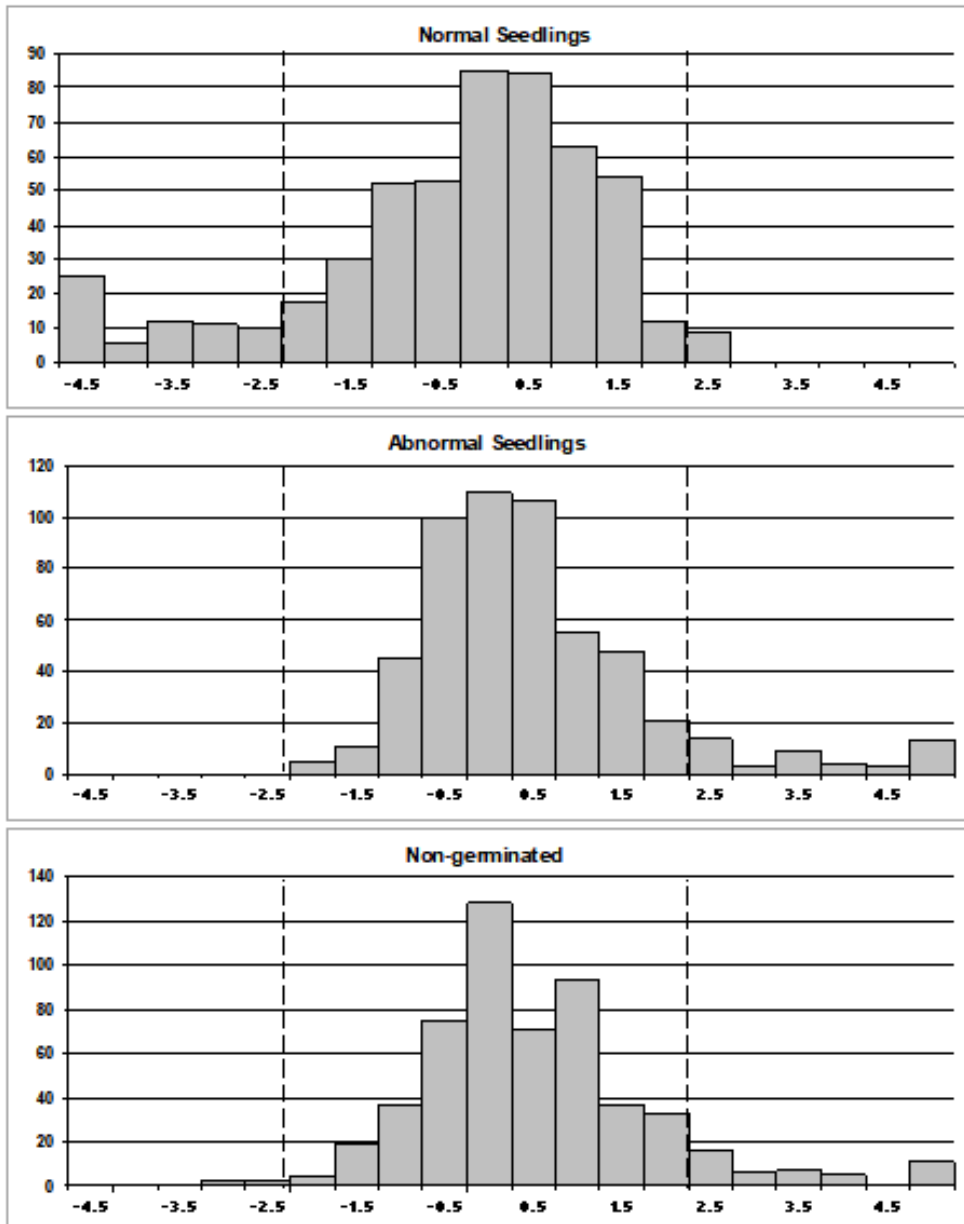
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Z-score Distribution

Species: *Hordeum vulgare*

Scope: Germination

The following histograms show the frequency distributions of all participants Z-Scores for the relevant components, i.e. **Normal and Abnormal Seedlings** and **Non-germinated Seeds**. The Z-Scores from all three samples are included in each histogram. For further explanations, please refer to the document 'The ISTA Proficiency Test Programme'





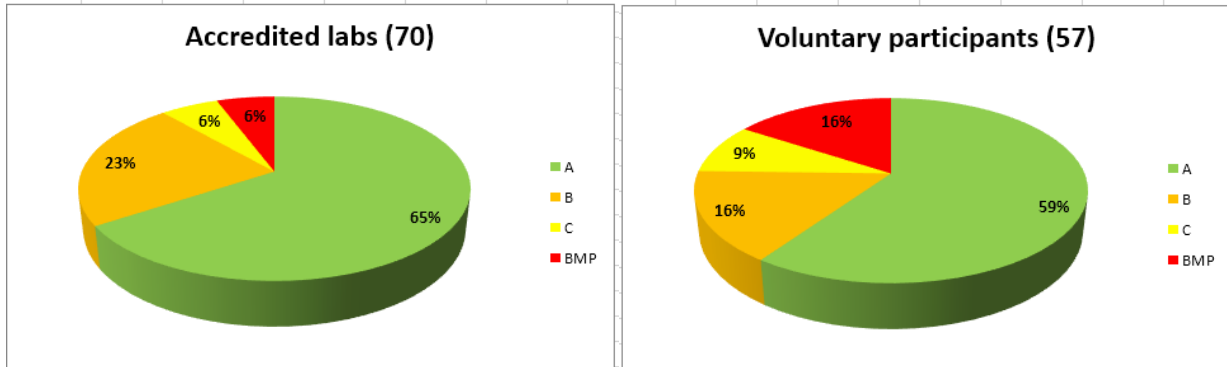
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TETRAZOLIUM TEST Ratings

Total number of participants = 127



Means and Standard Deviation

of the obligatory accredited participants

Categories	Mean Values %			Standard Deviation		
	Lot 1	Lot 2	Lot3	Lot 1	Lot 2	Lot 3
Viable	96	98	93	1.75	1.05	1.88

Method used

overview for all participants

presented for the preparatory method, solution concentration, temperature and staining time duration

Method	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
Longitudinal cut	65	47	112
Excision of embryo	4	7	11
Removal of the seed coat		1	1
No preparation*	1	2	3

* not in accordance with the ISTA Rules



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Solution %	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
0.1	1		1
0.5	4	2	6
1.0	66	54	120

Temperature °C	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
18 and 20	1	2	3
25 and 30	68	54	122
35 and 40	2		2

Staining time (hours)	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
0.75 and 1.5	2	1	3
2 and 3	65	54	119
4 and 5.5	1	1	2
18	2	1	3



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Z-score Distribution

Species: *Hordeum vulgare*

Scope: Tetrazolium

The following histogram shows the frequency distributions of all participants Z-Scores for the viability test. The Z-Scores from all three samples are included in each histogram. For further explanations, please refer to the document 'The ISTA Proficiency Test Programme'.

