



## 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](mailto:ista.office@ista.ch), <http://www.seedtest.org>

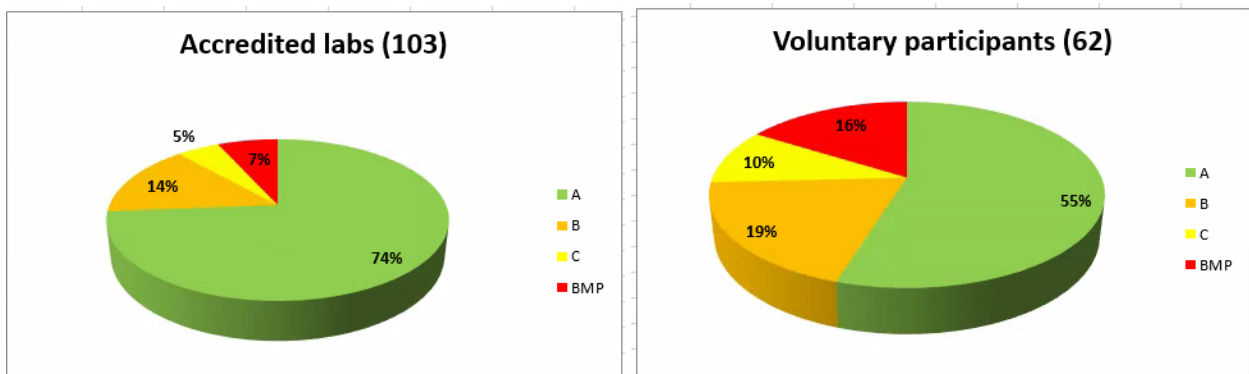
### Summary results: PT 20-1 P.vul

Species: *Phaseolus vulgaris*

Scope: GER, MOI, VIG (Conductivity test)

### GERMINATION Ratings

Total number of participants = 165



### 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	91	90	90	2.83	3.12	2.22
Abnormal seedlings	7	8	9	-	-	-
Non-germinated seed	2	2	1	-	-	-



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### Method used

overview for all participants

presented for the temperature, substrate and pretreatment

Temperature °C	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
<b>20&lt;=&gt;30</b>	42	27	<b>69</b>
<b>20</b>	32	17	<b>49</b>
<b>25</b>	29	18	<b>47</b>

Substrate	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
<b>S</b>	68	24	<b>92</b>
<b>BP</b>	25	30	<b>55</b>
<b>O</b>	5	2	<b>7</b>
<b>PP</b>	4	4	<b>8</b>
<b>TPS</b>	1	1	<b>2</b>
<b>TP</b>	0	1	<b>1</b>

Pretreatment	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
<b>No Treatment</b>	98	58	<b>156</b>
<b>light</b>	5	2	<b>7</b>
<b>H<sub>2</sub>O</b>	0	2	<b>2</b>



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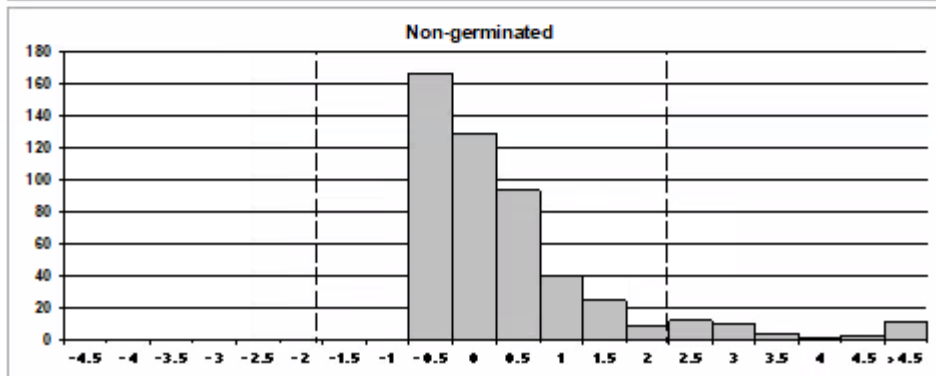
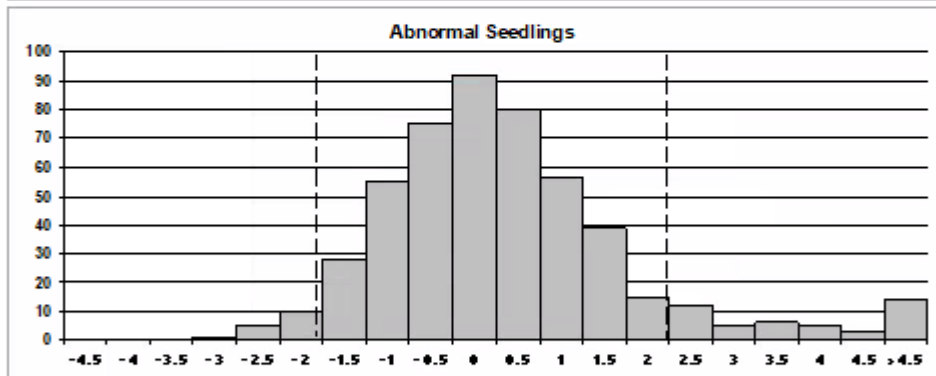
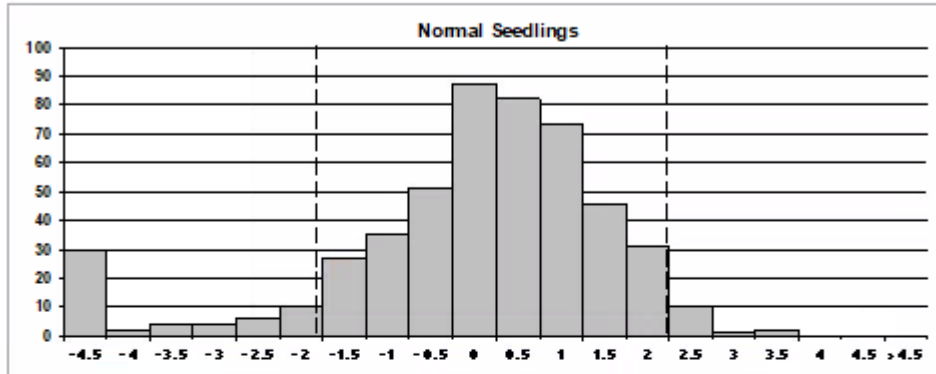
### Z-score Distribution

#### Proficiency Test Report – Test Round 20-1 P.vul

Species : *Phaseolus vulgaris*

Scope: Germination

The following histograms show the frequency distributions of all participants Z-Scores for the relevant components, i.e. **Normal Seedlings** 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'





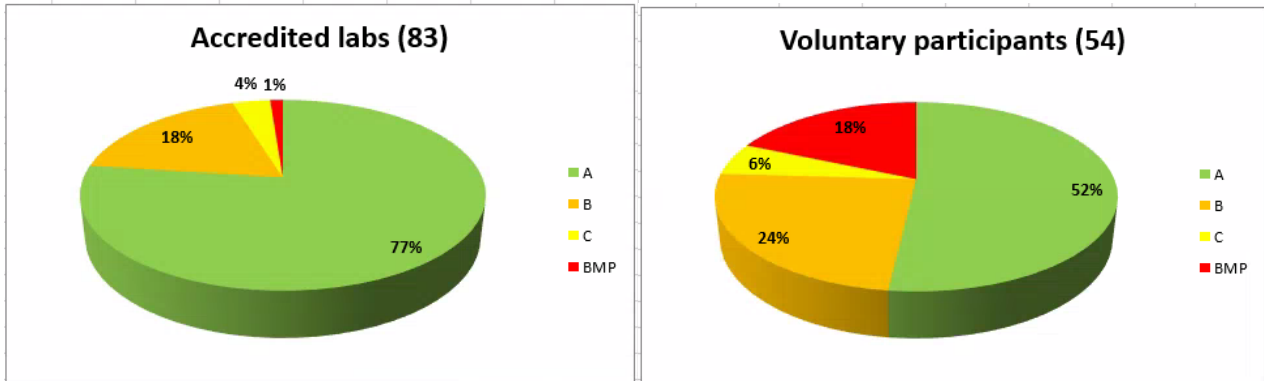
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### MOISTURE Ratings

Total number of participants = 137



### 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
Moisture	10.41	10.29	10.13	0.2	0.14	0.17

### Method used

overview for all participants

Method	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
130°, 1h coarse grinding	82	52	134
130°, 24h* Coarse grinding	1		1
moisture meter		1	1
not specified		1	1

\* Not prescribed ISTA method for this species



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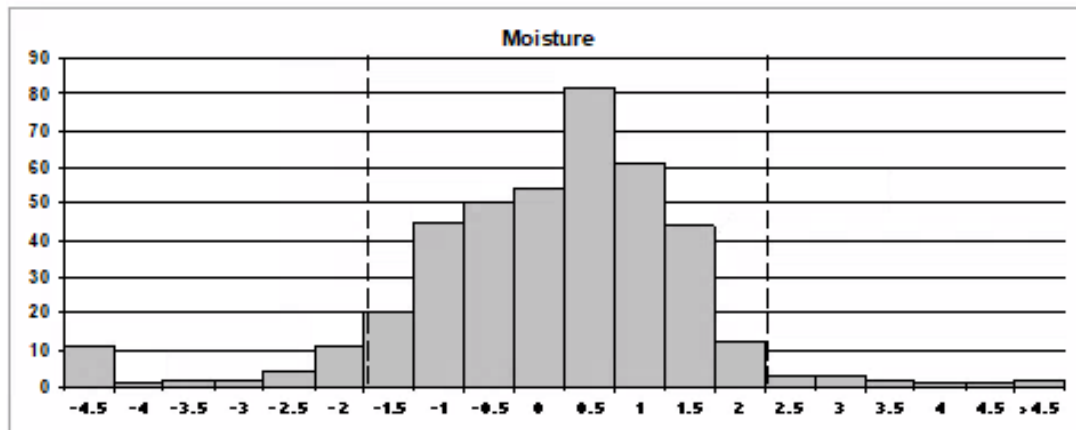
### Z-score Distribution

#### Proficiency Test Report – Test Round 20-1 P.vul

Species : Phaseolus vulgaris

Scope: Moisture

The following histogram shows the frequency distributions of all participants Z-Scores for the moisture 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'.



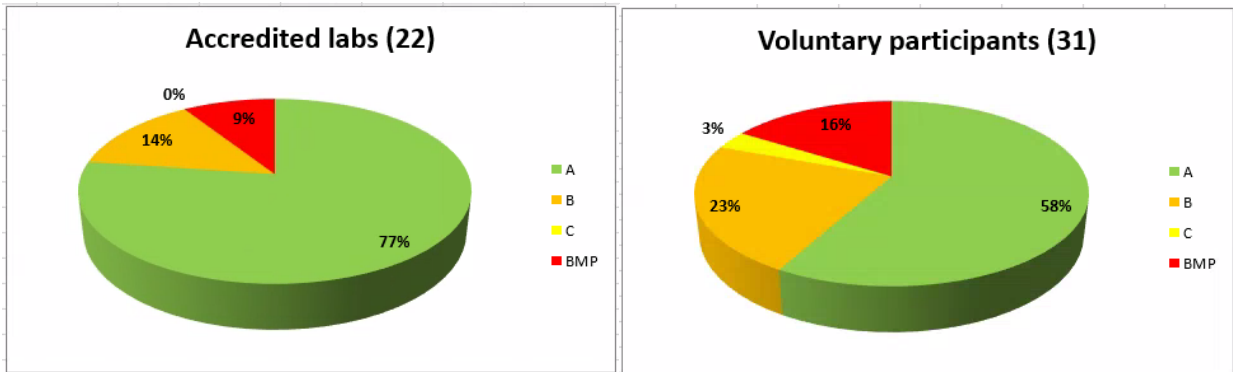


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**VIGOUR TEST (Conductivity test) Ratings**

**Total number of participants = 53**



**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
Conductivity	43.36	60.45	53.17	7.75	6.37	6.37

**Z-score Distribution**

**Species :** Phaseolus vulgaris

**Scope:** Vigour

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

