



ISTA
Seed Quality Assurance

ISTA Secretariat

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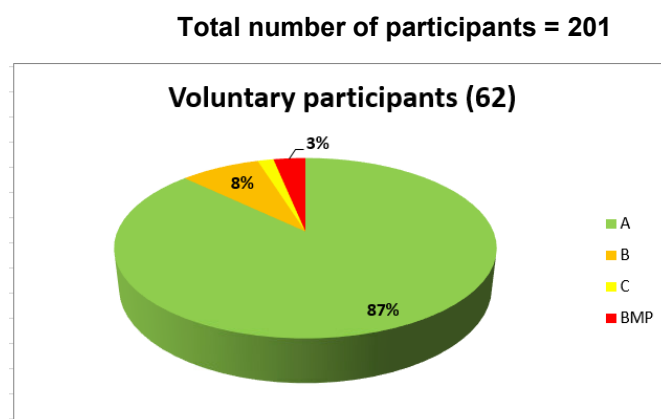
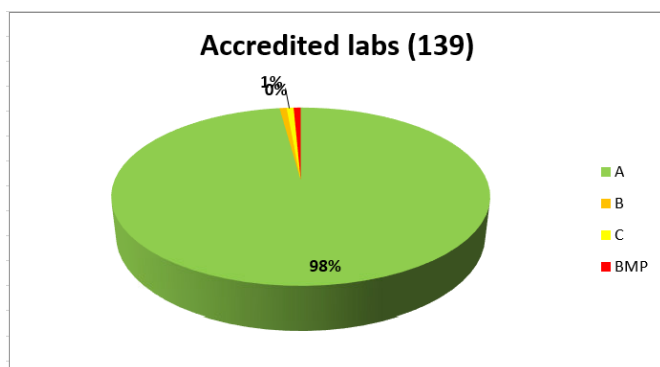
Summary report: PT 26-1 L.usi

Species: *Linum usitatissimum*

Scope: PUR, OSD, GER, OIC issuance

Crop groups: 5 (Other Agricultural Crops) and 8 (Flowers)

PURITY Ratings



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	98.6	97.7	98.4	0.23	0.30	0.25
Other seed	1.1	2.1	0.9	-	-	-
Inert matter	0.3	0.2	0.7	-	-	-

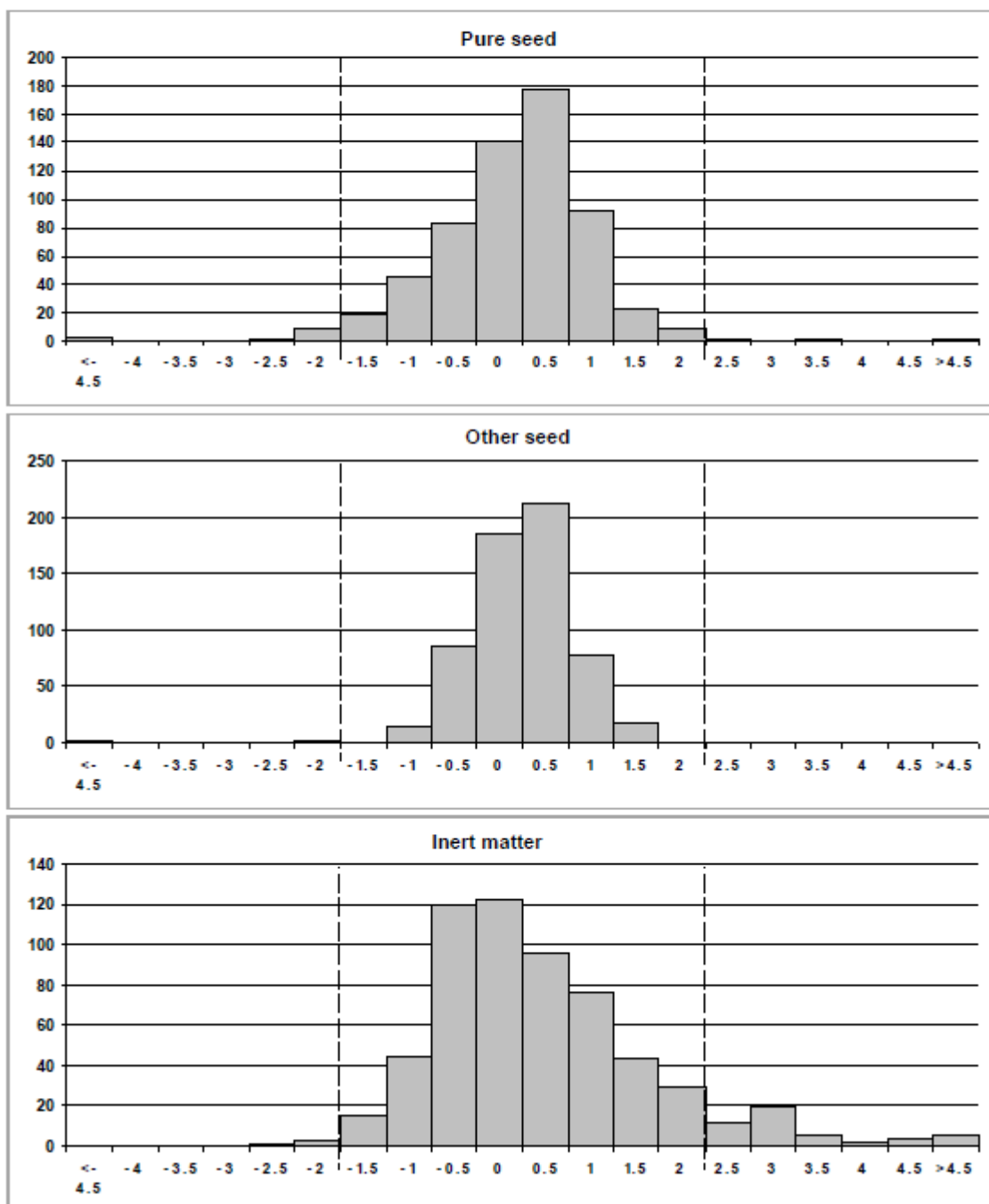
Z-score Distribution

Proficiency Test Report – Test Round 26-1 L.usi

Species : *Linum usitatissimum*

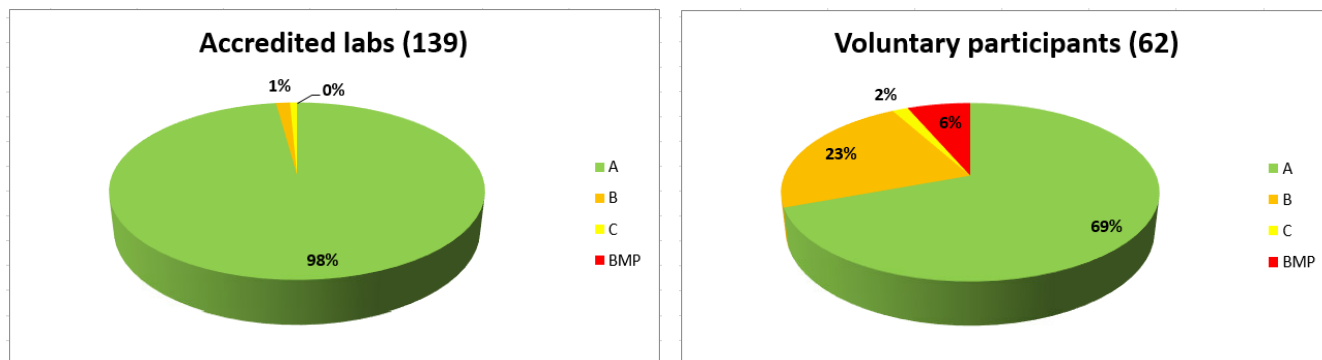
Scope: Purity

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'



OSD Ratings

Total number of participants = 201



Retrieval rates

Proficiency Test Report - Test round 26-1 L.usi

Species: *Linum usitatissimum*

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:

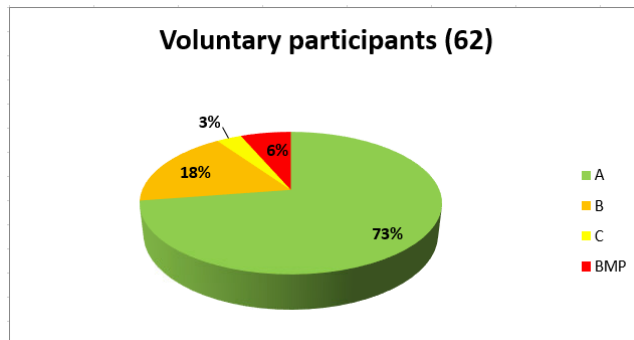
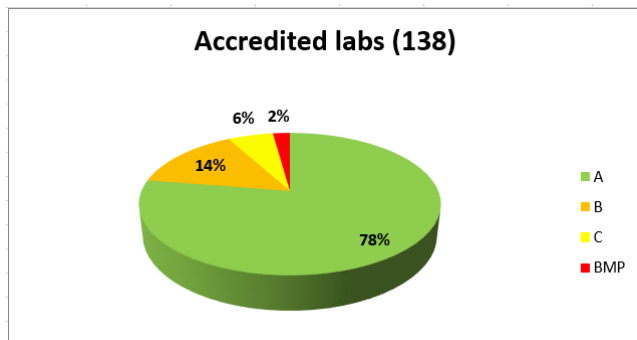
- >=90 % -> A
- >=80 % -> B
- >=70 % -> C
- <70 % -> BMP

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 factor
Lot 1	1 <i>Cirsium arvense</i>	3	2.8	93.4	3
	2 <i>Setaria viridis</i>	4	3.7	93.1	3
	3 <i>Triticum aestivum subsp.aestivum</i>	5	4.8	96.3	3
Lot 2	1 <i>Fallopia convolvulus</i>	2	1.9	93.3	3
	2 <i>Hordeum vulgare subsp.vulgare</i>	5	4.8	96.0	3
	3 <i>Panicum miliaceum</i>	4	3.7	93.0	3
Lot 3	1 <i>Avena fatua</i>	3	2.8	93.6	3
	2 <i>Bassia scoparia</i>	4	2.9	72.1	1
	3 <i>Lens culinaris</i>	2	1.9	94.0	3

GERMINATION Ratings

Total number of participants = 200



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	Lot3	Lot 1	Lot 2	Lot 3
Normal seedlings	86	86	78	3.41	2.77	2.72
Abnormal seedlings	7	5	5	-	-	-
Non-germinated seed	7	9	17	-	-	-

Method used

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

Temperature °C	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
20 ⇄ 30	63	38	101
20	74	24	98
3 *	1		1

* these temperatures are not prescribed in the ISTA Rules

Substrate	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
TP	57	26	83
BP	40	26	66
PP	41	8	49
Sand	0	2	2

Pretreatment	# Users		# Users TOTAL
	Accredited labs	Voluntary participants	
No Treatment	83	36	119
Prechill	50	26	76
Light *	4		4
H₂O	1		1

* these preparatory methods are not indicated in the Table 5A as recommended for breaking dormancy

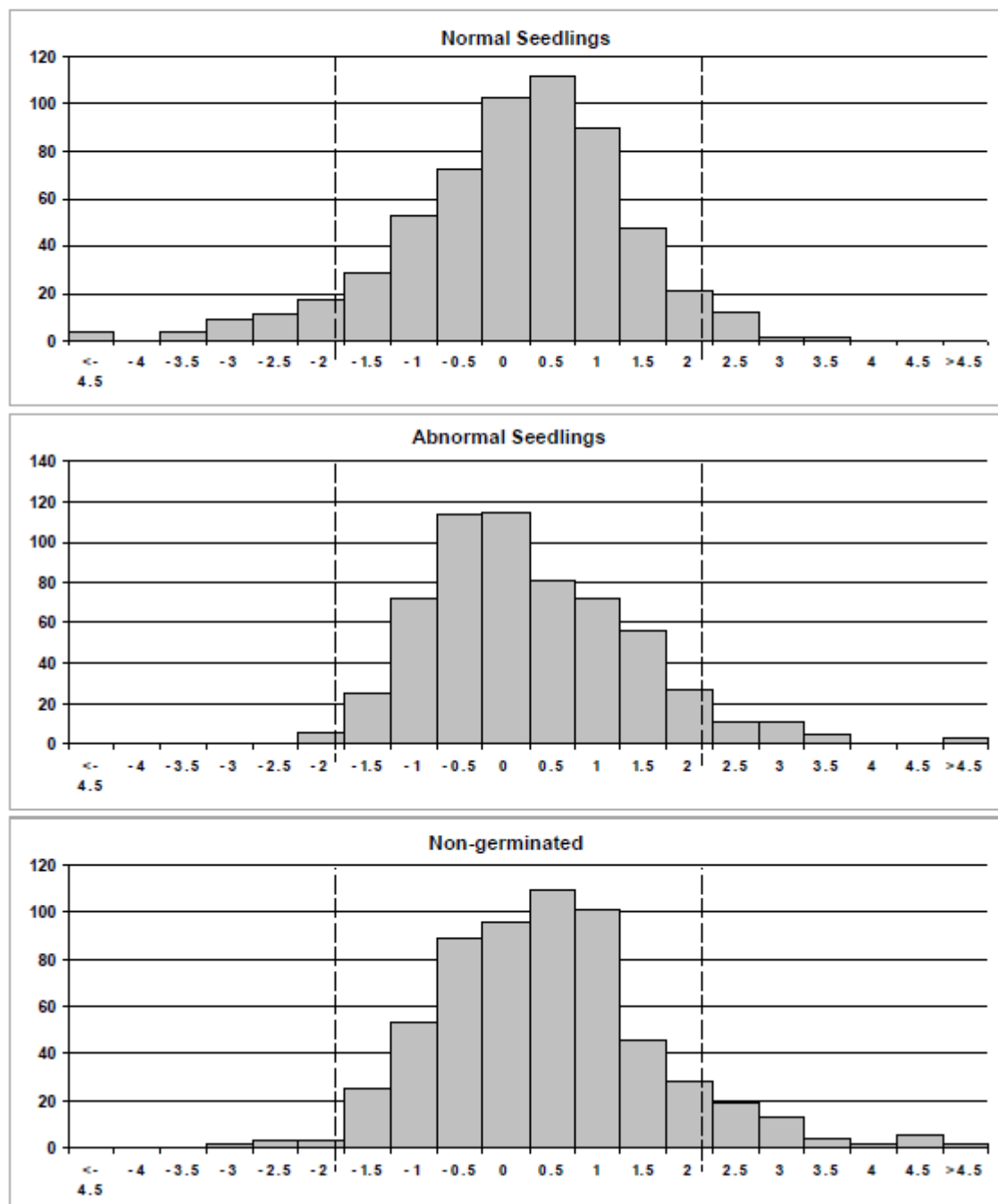
Z-score Distribution

Proficiency Test Report – Test Round 26-1 L.usi

Species : *Linum usitatissimum*

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'



Images of normal and abnormal seedlings and of non-germinated seeds

Lot 1 - Normal Seedlings



Abnormal Seedlings



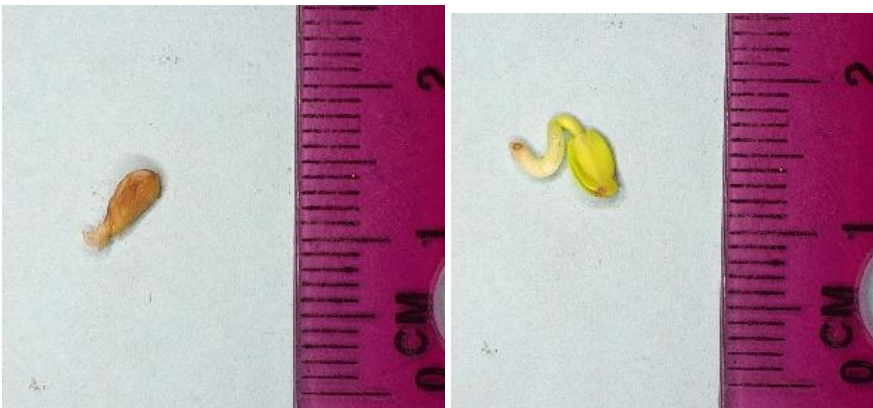
Ungerminated seeds



Lot 2 - Normal seedlings



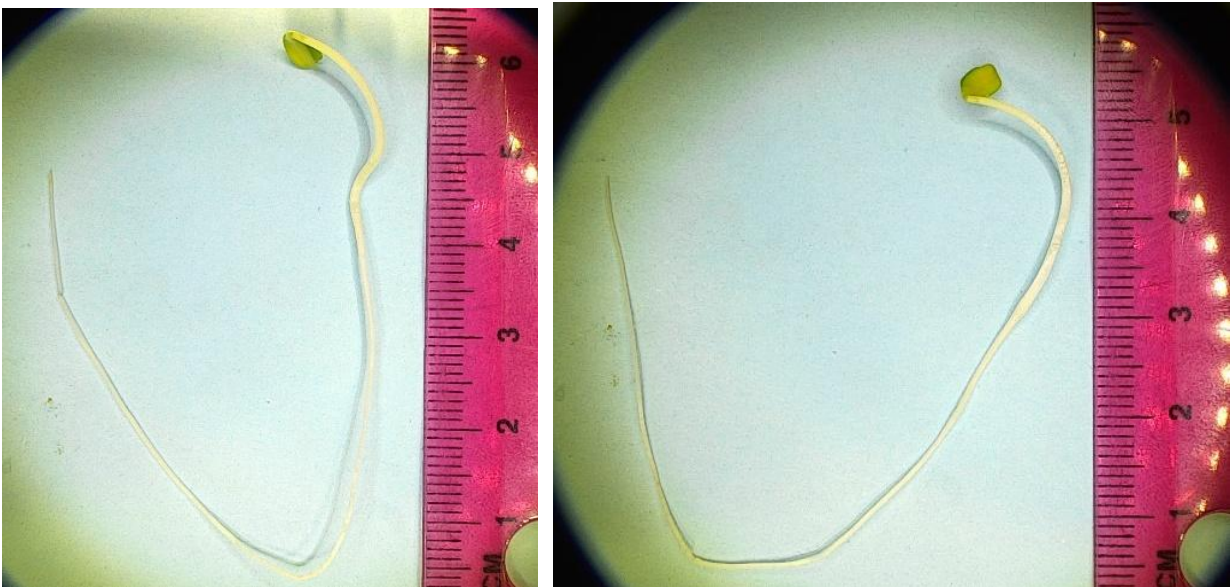
Abnormal seedlings



Ungerminated seeds



Lot 3 – Normal seedlings



Abnormal seedlings



Ungerminated seeds



REPORTING ON THE ISTA ORANGE CERTIFICATES

This exercise was voluntary for all participants.

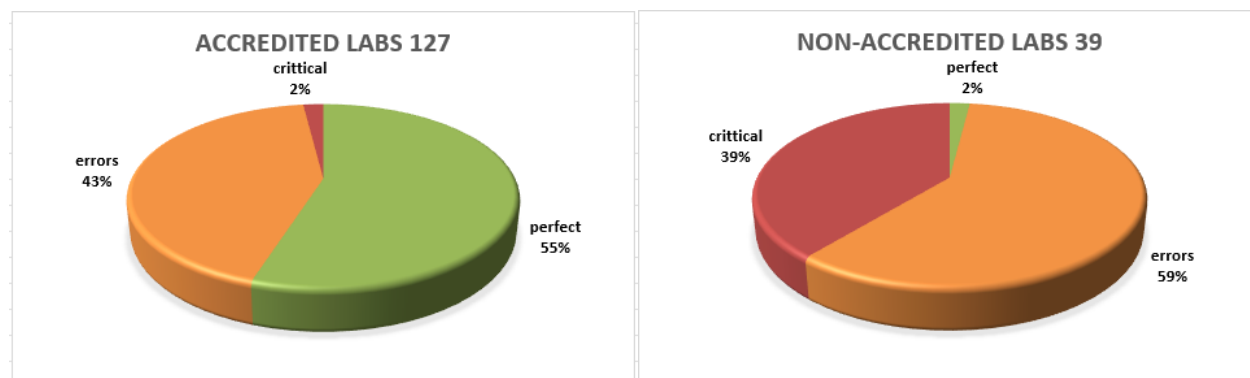
The completion of the certificate has a training purpose only and it is not rated.

Out of 203 participants, the completed certificate was submitted for review by 166 participants (82%).

Out of 166 submissions, 126 were from the accredited laboratories and 27 from non-accredited.

Quality of completing the certificates:

127 Accredited laboratories		39 Non-accredited laboratories	
NO error 70 labs	55%	NO error 1 lab	2%
Minor and major errors 54 labs	43%	Minor and major errors 23 labs	59%
Critical errors 3 labs	2%	Critical errors 15 labs	39%
Critical errors: Certificate is invalid because of • Handwriting or • Stamp missing or • Signature missing or • Date of issue missing or • Signs of data alternation/erasures			



Most frequent errors:

- OSD test - stating "complete" instead of "reduced" test
- OSD test - not reporting the results under "Other determinations"

Each participating laboratory receives a personalised report on how the Orange Certificate was completed.