



## 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>

To all participants  
ISTA GMO Proficiency Test  
PT22

Bassersdorf, 15 May 2019

Dear Madam, dear Sir,

### Proficiency Test Results and Rating

Please find enclosed your laboratory's test results and ratings for PT22.

### Experimental Design

Samples were either negative, i.e. did not contain any transgenic events, or positive, i.e. contained the transgenic event RF3. When preparing the positive samples, defined numbers of seeds were mixed with non-GM seeds. The purity of both seed lots used in this PT round (GM and non-GM) was checked by PCR and confirmed as meeting the purity standard required, prior to sample preparation.

Each participating laboratory received a sample set made of 8 numbered Canola seed samples, containing approximately 3000 seeds based on the 1000 seed weight.

The sample sets comprised samples with spiking levels listed in the following table:

### PT22 sample details

Spiking level	0%	0.3%	0.8%	1.3%
Event	None	RF3	RF3	RF3
Lot numbers	1, 2	7, 8	5, 6	3, 4
Number of samples	2	2	2	2
Number of non-GM seeds	3000	2991	2976	2961
Number of GM seeds	0	9	24	39

## Evaluation

Sample sets were sent to 36 laboratories. 35 participants submitted their results, 9 provided qualitative results only.

### Qualitative rating

The rating for the presence/absence (qualitative) results is based on a percentage of misclassified samples out of the total samples. Misclassification may either be a false positive or a false negative result. Missing results for individual samples are considered as misclassification.

The qualitative ratings awarded in this round were as follows:

Rate	Misclassified samples	Misclassified samples absolute numbers	Number of laboratories
A	0% - 5%	0	32
B	>5% - 10%	-	-
C	>10% - 20%	1	3
BMP	>20%	>1	-

### Quantitative rating

The quantitative rating is based on the quantification results for the positive samples and their reference value (samples with zero spiking level are not used in quantification rating). The reference value is either the number of GM seeds in percent, the mass of the GM seeds in percent or the median of the results reported by the participants in the unit '%DNA copies'. Which of the reference values is chosen is determined by the panel of experts appointed for each round, the guiding principle being:

Results reported as	Reference value
% number	% number
% mass	% mass
Other units (e.g. number DNA copies)	Median of results (%)

#### Important Note:

Before GMO PT20 round, a change in the procedure has been made in order to better take into account recognized standards regarding the precision of a quantitative result. Therefore, in the definition of the Reference intra-laboratory standard-deviation used in the computation of the z-scores, we have introduced the following change (using the same notations as in the reference document in ISTA News Bulletin No. 130):

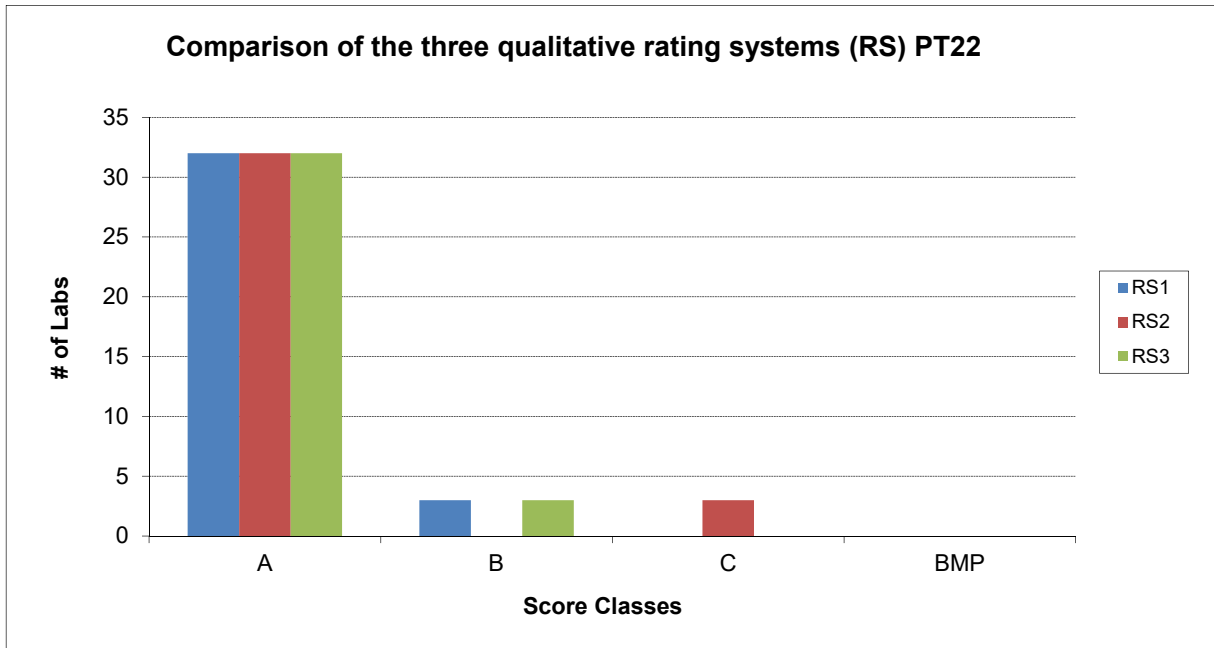
If  $(\text{reference lab stdev})/(\text{true level})$  is lower than 0.25, use  $0.25 \times (\text{true level})$  as the Reference intra-laboratory standard deviation.

The reporting units used by participants were as follows:

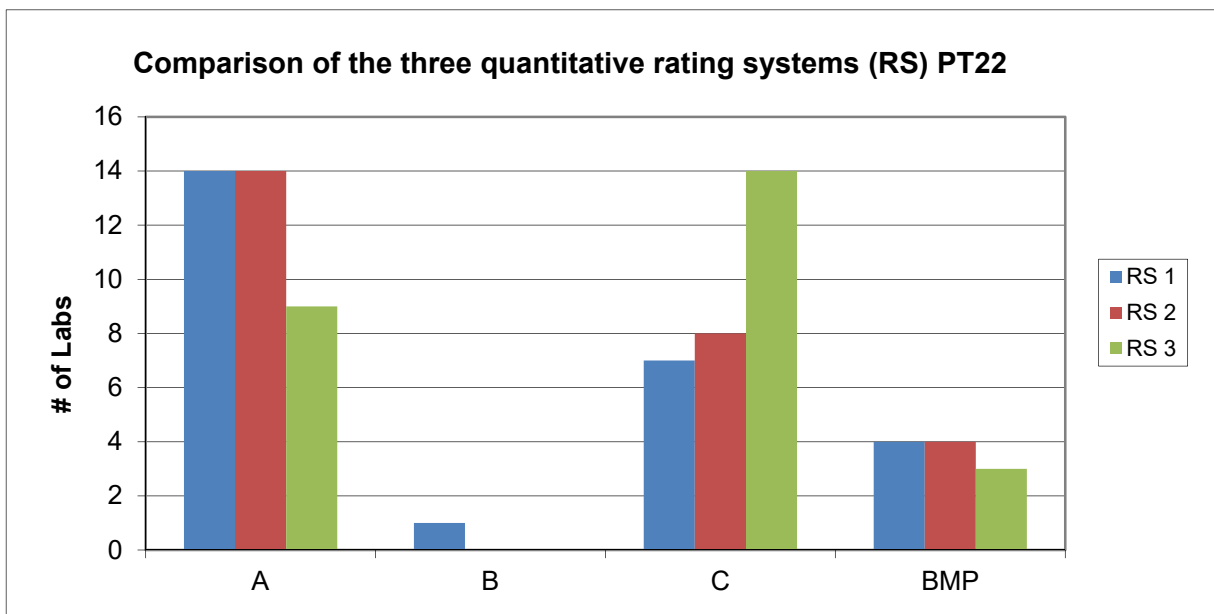
Reporting unit	Number of laboratories
% number	7
% mass	16
% DNA copies	3

Taking this into account, the quantitative ratings awarded in this round were as follows:

Rate	Number of laboratories
A	14
B	1
C	7
BMP	4



Note: The rating system adopted for qualitative results was RS2.



Note: The rating system adopted for quantitative results varied depending on the reporting unit chosen by individual laboratories.

If you require a more comprehensive explanation of the rating system, please refer to Seed Testing International, The ISTA News Bulletin No. 130 (quantitative rating) and No. 128 (qualitative rating) or contact the ISTA Secretariat.

Yours sincerely,

Nadine Ettel  
TCOM Manager