

PRESENTATION OF THE CHANGES IN THE 2011 QUANTITATIVE PROFICIENCY TEST DATA TREATMENT REPORTS

For many years now, the proficiency test data reports have evolved according to the desires of the participating laboratories. However, we always ensure that they contain all the technical information required to search for any causes in the event of exceeding tolerance limits.

Once the individual reports for each laboratory have been set up, we will begin bringing in, in 2011, various changes to make the reports more readable, providing only information that can be used by the laboratory in their interpretation process.

The plans for the future reports have been presented to Actilait's analytical commission and the changes for 2011 validated.

The reports will always be personalised (individual performance of each participating laboratory) and include information concerning the global performance of all the participating laboratories.

The major changes are the following:

- **Suppression of the classification table**

This table, based on the Euclidean distance D calculated from the mean deviations and the standard deviation of deviations, did not provide any additional technical information for the laboratory. Moreover, this information was not directly linked to the laboratory's situation in relation to the limits of the conformity target. The laboratory could thus be "misled" with regard to its performances (a laboratory off-target could have a better classification than another laboratory within the tolerance limits).

- **Evaluation of the laboratory's repeatability**

The repeatability table will be simplified and will contain only data concerning the deviations between duplicates per sample (SL), the calculated standard deviation of repeatability of the participating laboratory (SL) and the number of data taken into account (NL).

The limit repeatability values and their origin (standardised method) will always be indicated below the table of results.

The figure presenting the repeatability performances of all the laboratories will be cancelled as it provided no information that could be used directly by the participant.

N°	1	2	3	4	5	6	7	8	9	10	SL	NL
DIFFERENCE	0.20	0.00	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.06	20

Upper limits: Differences between duplicates: $r = 0.5$ g / litre Standard deviation SL = 0.24 g / litre = $1.35Sr$ NF V 04 210

- **Evaluation of the laboratory's accuracy**

- o For the quantitative microbiological proficiency tests, the tables in "Log" and "Milliers" units will be replaced by a table in "Log" units, which will include for information purposes only a reference line in CFU / ml or / g (x 1000).

- For the chemical and microbiological tests, a z score will be added for each sample:

$$z = \frac{MOY - REF}{S^*}$$

(MOY: mean value of the laboratory, REF: reference value of the sample and S*: standard deviation of the calculation of the reference value).

This z score value will then be used for a graphical evaluation, sample by sample.

N°	1	2	3	4	5	6	7	8	9	10	\bar{d}	Sd	t
MOY	5.088	3.936	4.736	4.970	4.195	4.444	4.502	4.751	5.265	4.195			
REF.	4.925	3.769	4.531	4.798	4.128	4.337	4.393	4.585	5.112	4.222			
S*	0.246	0.212	0.231	0.243	0.226	0.215	0.247	0.289	0.198	0.248			
DIFF (MEAN-REF)	+ 0.163	+ 0.166	+ 0.205	+ 0.172	+ 0.067	+ 0.107	+ 0.109	+ 0.166	+ 0.152	- 0.027	+ 0.128	0.068	5.98
Z SCORE	+ 0.664	+ 0.784	+ 0.885	+ 0.708	+ 0.296	+ 0.498	+ 0.440	+ 0.574	+ 0.769	- 0.109			

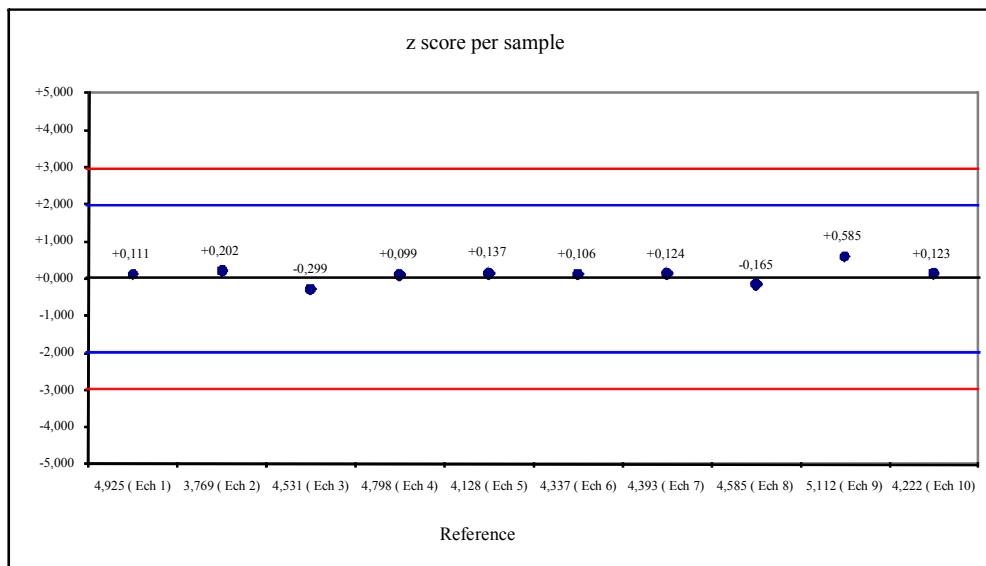
In CFU/ml

REF	84	6	34	63	13	22	25	38	130	17
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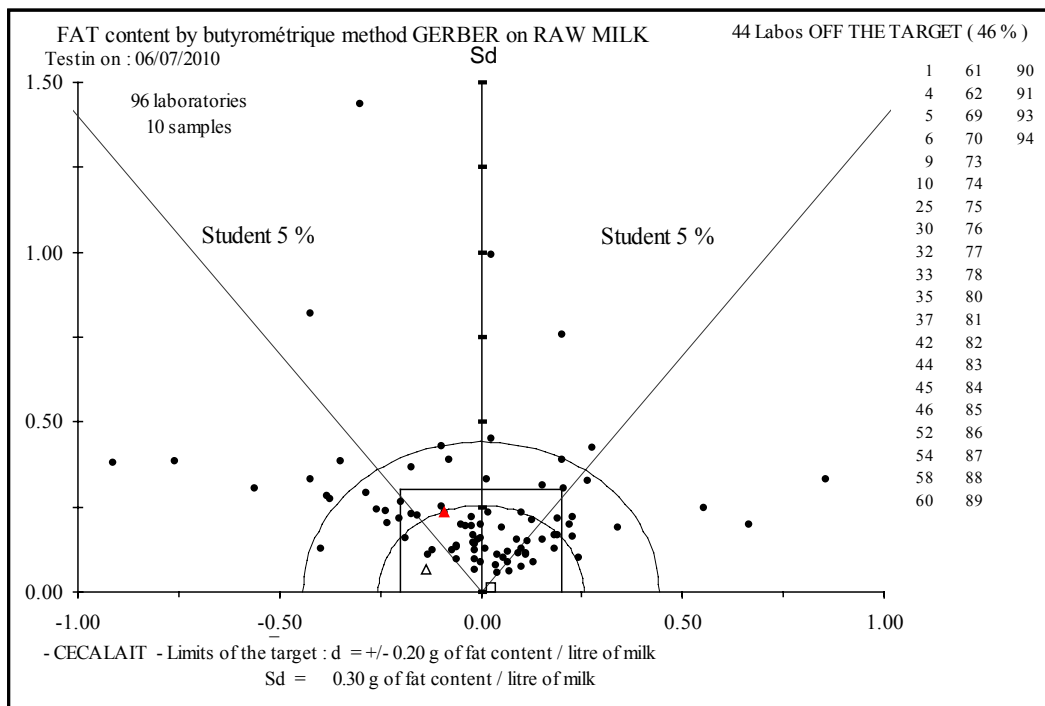
- A figure for the individual evaluation per sample, based on the calculation of the z score per sample with **warning** ($> \pm 2$) and **action** ($> \pm 3$) limits.

The Z scores calculated and presented in this figure for each sample are not inter-comparable due to their method of calculation (based on a specific standard deviation of the sample considered). It will not therefore be possible to compare the values or study any trends between the samples.

This is only an informative approach; the global performance of the laboratory is always evaluated by comparison of the performance statistics obtained with the limits of the conformity target.



- The replacement of the individual target by a general conformity target, with the participating laboratory's positioning in colour. The laboratory will then be able to quickly and clearly establish its position in relation to the tolerance limits and the performances of the other participating laboratories.



- **Communication in French and English**

To make the reports easier to read they will be written in only one language (either French or English). For each proficiency test and each criteria, a French and an English report will be drawn up and sent to each laboratory according to its choice of language (indicated on the proficiency test order form).

The English reports will be then translated in their entirety (text and figures).

The conception of these new reports replies to the requests from participating laboratories for simpler, more readable reports providing all the technical information necessary for their interpretation.

To help the laboratories in the interpretation of these new documents, the explanatory sheets (in chemistry and microbiology) will be reviewed in the near future and sent to the laboratories.