INSTRUCTION

CONCERNING THE REPORT OF A CECALAIT

MICROBIOLOGICAL QUALITATIVE

PROFICIENCY TESTING

GENERAL PRINCIPLE OF THE DATA TREATMENT:

The general principle consists in an evaluation of the accuracy performances of the laboratory on the basis of the results obtained on the samples sent. **The qualitative statistical data treatment only concerns "the presence" or "the absence" of microbial strain**.

SALMONELLA

➢ All the information concerning the methods used by all the laboratories for the analysis of the samples are indicated in the **Table I.**

➢ The serotype and the level of *Salmonella* contained in each sample are indicated in the **Table II.**

The answers of all the participating laboratories: "Y" for yes and "N" for no to the question "Presence of *Salmonella*" in the sample, are indicated in the **Table III,** and the expected answers are indicated at the end of this table (line "REF").

The individual results of the laboratory (extraction of **Table III**) and the expected answers by sample are indicated in the **Table IV**

"Y" for "yes" to the question "Presence of *Salmonella*"
"N" for "no" to the question "Presence of *Salmonella*"

Table IV : Laboratory results

N°	1	2	3	4	5
52	**Y**	**N**	**Y**	**N**	**Y**
REF	Y	N	Y	N	Y

Answers: Y = YES; N = NO; to the question: Presence of Salmonella

REF: Presence or absence according to the initial contamination

TREATMENT OF THE LABORATORY'S PERFORMANCE:

The objective of the evaluation is to obtain a relative frequency in right answers (FLR%) of 100%.

Table of the laboratory's accuracy by frequency of correct answers (Table V)

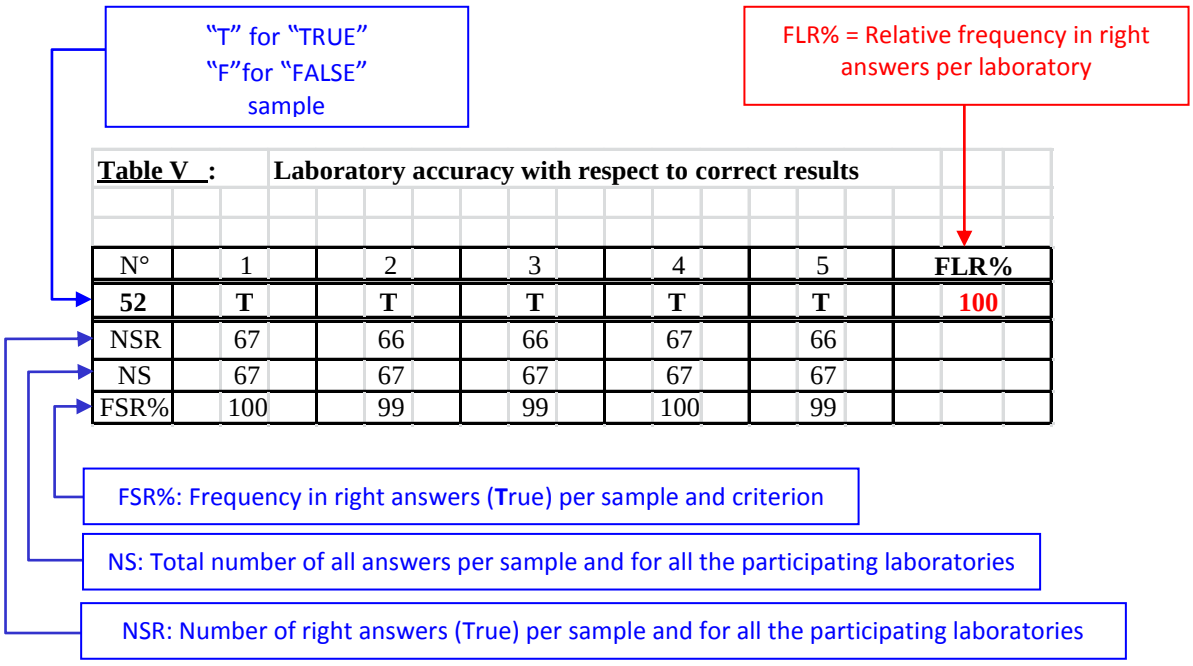


Table V : Laboratory accuracy with respect to correct results

N°	1	2	3	4	5	FLR%
52	**T**	**T**	**T**	**T**	**T**	**100**
NSR	67	66	66	67	66	
NS	67	67	67	67	67	
FSR%	100	99	99	100	99	

The data of the evaluated laboratory are compared to the reference values to establish the "accuracy".

The answer is consistent = true result (T)
The answer is not consistent = false result (F)

FLR% is the relative frequency in right answers ("True") of the laboratory, which corresponds to the percentage of the right answers "T" in relation to the number of samples analysed by the laboratory.

$$FLR\% = \frac{\sum V}{Nb.samples}.100$$

FSR% is the frequency in right answers ("True") per sample and criterion of all the participating laboratories, which corresponds to the percentage of the true answers "T" in relation to the number of laboratories for the analysis of the sample.

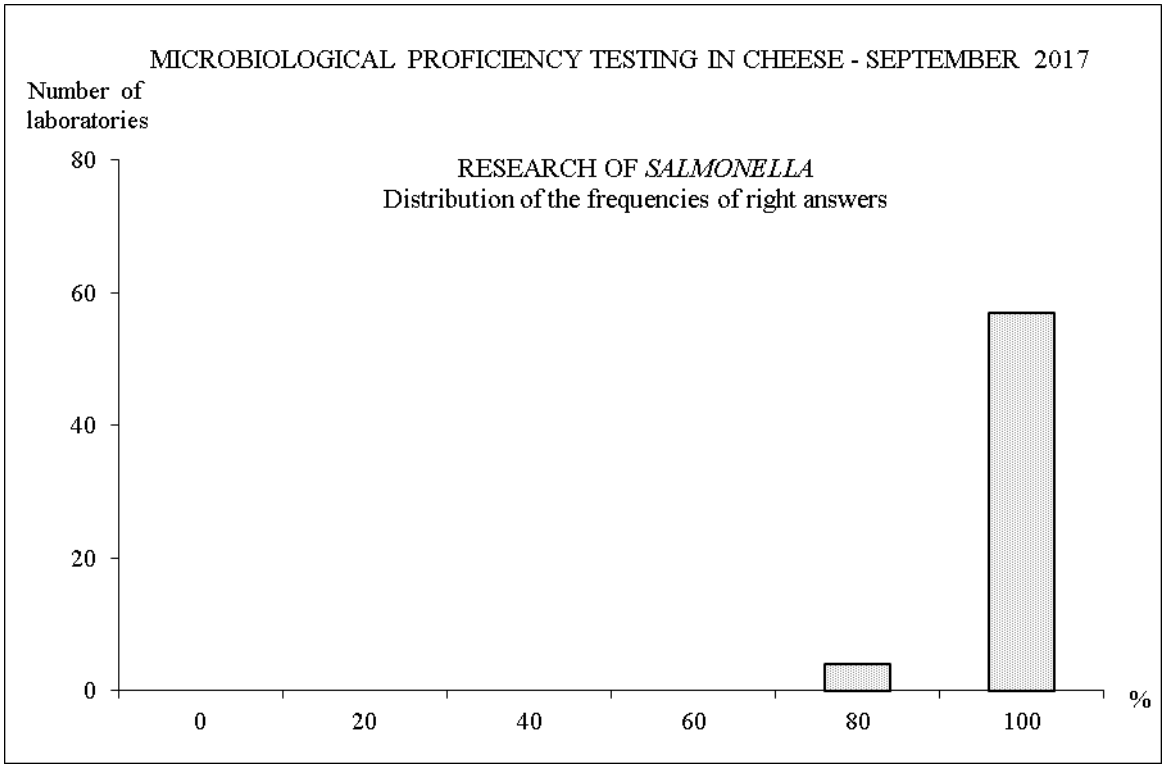
$$FSR\% = \frac{NSR}{NS}.100$$

Performance indicator

Individual performance :	For this evaluation, the goal has been reached ☺

A performance indicator informs you if obtaining a relative frequency in response to FLR% of 100% is reached.

The figure 1 shows the distribution in frequency of right answers of all the participating laboratories.



LISTERIA

➢All the information concerning the methods used by all the laboratories for the analysis of the samples are indicated in the **Table I.**

➢ The serotype and the rate of *Listeria* contained in each sample are indicated in the **Table II.**

The answers of all the participating laboratories: "Y" for yes and "N" for no to the question "Presence of *Listeria* in the sample", are indicated in the **Table III,** and the expected answers are indicated at the end of this table (line "REF").

The individual results of the laboratory (extraction of **Table III**) and the expected answers by sample are indicated in the **Table IV**

"Y" for "yes" to the question:
"N" for "no" to the question:
11 ; 21 ; 31 ; 41 ; 51 : "Presence of *Listeria*"
12 ; 22 ; 32 ; 42 ; 52 : "Presence of *L monocytogenes*"
13 ; 23 ; 33 ; 43 ; 53 : "Presence of *L innocua*"
14 ; 24 ; 34 ; 44 ; 54 : "Presence of specific *Listeria*"
15 ; 25 ; 35 ; 45 ; 55 : "Presence of other species of *Listeria*"

Table IV : Laboratory results

N°			1					2					3					4					5				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
5	**Y**	**N**	**N**	**Y**	**N**	**Y**	**Y**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**Y**	**Y**	**Y**	**N**	**N**	**Y**	**Y**	**N**	**N**	**N**
REF	Y	N	N	Y	N	Y	Y	N	N	N	N	N	N	N	N	Y	Y	Y	N	N	Y	Y	N	N	N

Answers: Y = YES; N = NO; to the questions:
1: Presence of Listeria
2: Presence of L. monocytogenes
3: Presence of L. innocua
4: Presence of L. ivanovii
5: Presence of other species of Listeria

REF: Presence or absence in relation to the initial contamination

Nota: The answers 11, 21, 31, 41 and 51 will be included in the **Table Vc**

Nota: The answers 12, 22, 32, 42 and 52 will be included in the **Table Vb**

TREATMENT OF THE LABORATORY'S PERFORMANCE:

The objective of the evaluation is to obtain a relative frequency in right answers (FLR%) of 100%.

The accuracy of the laboratory is presented in 3 tables according to the type of detection and identification performed by the participating laboratory.

For detection and identification of the species of *Listeria*: **Table Va**

For detection of *Listeria monocytogenes* only: **Table Vb**

For detection of the genus *Listeria* only: **Table Vc**

Tables of the laboratory's accuracy by frequency of correct answers (Table V)

Table Va: DETECTION AND IDENTIFICATION OF THE SPECIES OF *LISTERIA*

"T" for "TRUE"
"F" for "FALSE"
sample

FLR% = Relative frequency in right answers per laboratory

N°	1					2					3					4					5					FLR%
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
5	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**100**
NSR	20	23	22	19	23	23	22	22	23	22	23	23	23	23	23	23	22	21	23	22	23	23	23	23	23	
NS	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
FSR%	87	100	96	83	100	100	96	96	100	96	100	100	100	100	100	100	96	91	100	96	100	100	100	100	100	

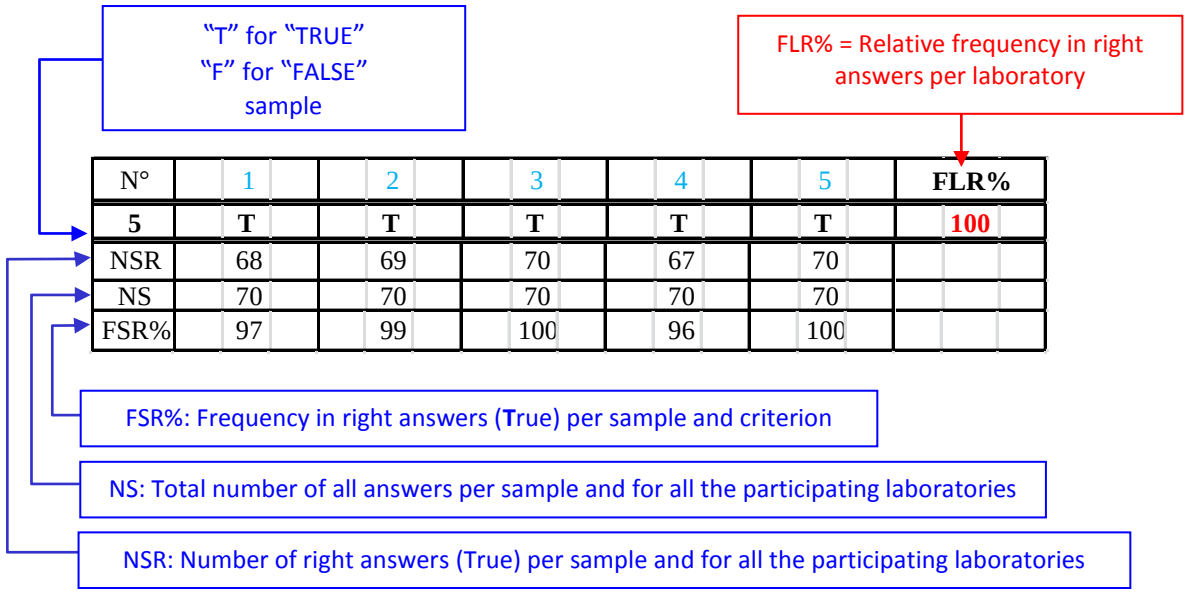
FSR%: **F**requency in **R**ight answers (True) per **S**ample and criterion

NS: Total **N**umber of all answers per **S**ample and for all the participating laboratories

NSR: **N**umber of **R**ight answers (True) per **S**ample and for all the participating laboratories

Table Vb: DETECTION OF *LISTERIA MONOCYTOGENES*

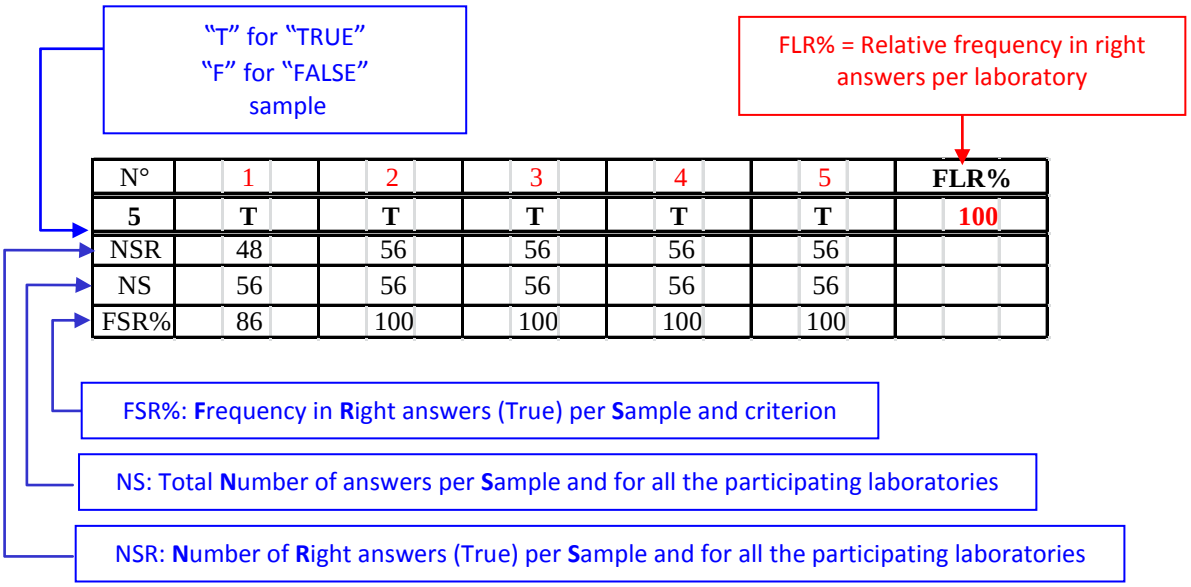
See answers 12, 22, 32, 42 and 52



N°	1	2	3	4	5	FLR%
5	**T**	**T**	**T**	**T**	**T**	**100**
NSR	68	69	70	67	70	
NS	70	70	70	70	70	
FSR%	97	99	100	96	100	

Table Vc: DETECTION OF THE GENUS *LISTERIA*

See answers 11, 21, 31, 41 and 51



N°	1	2	3	4	5	FLR%
5	**T**	**T**	**T**	**T**	**T**	**100**
NSR	48	56	56	56	56	
NS	56	56	56	56	56	
FSR%	86	100	100	100	100	

The data of the evaluated laboratory are compared to the reference values to establish the "accuracy".

The answer is consistent = true result (T)
The answer is not consistent = false result (F)

FLR% is the relative frequency in true answers ("True") of the laboratory, which corresponds to the percentage of the true answers "T" in relation to the number of samples analysed by the laboratory.

$$FLR\% = \frac{\sum V}{Nb.samples}.100$$

FSR% is the frequency in true answers ("True") per sample and criterion of all the participating laboratories, which corresponds to the percentage of the true answers "T" in relation to the number of laboratories for the analysis of the sample.

$$FSR\% = \frac{NSR}{NS}.100$$

Performance indicator for

- DETECTION AND IDENTIFICATION OF THE SPECIES OF *LISTERIA*
- DETECTION OF *LISTERIA MONOCYTOGENES*
- DETECTION OF THE GENUS *LISTERIA*

Individual performance :	For this evaluation, the goal has been reached ☺

A performance indicator informs you if obtaining a relative frequency in response to FLR% of 100% is reached.

Figure 1a

The figure 1a shows the distribution in frequency of right answers of all the participating laboratories performing detection and an identification of the species of *Listeria*.

(Answers 11, 21, 31, 41 and 51) et (Answers 12, 22, 32, 42 and 52) et
(Answers 13, 23, 33, 43 and 53) et (Answers 14, 24, 34, 44 and 54) et
(Answers 15, 25, 35, 45 and 55)

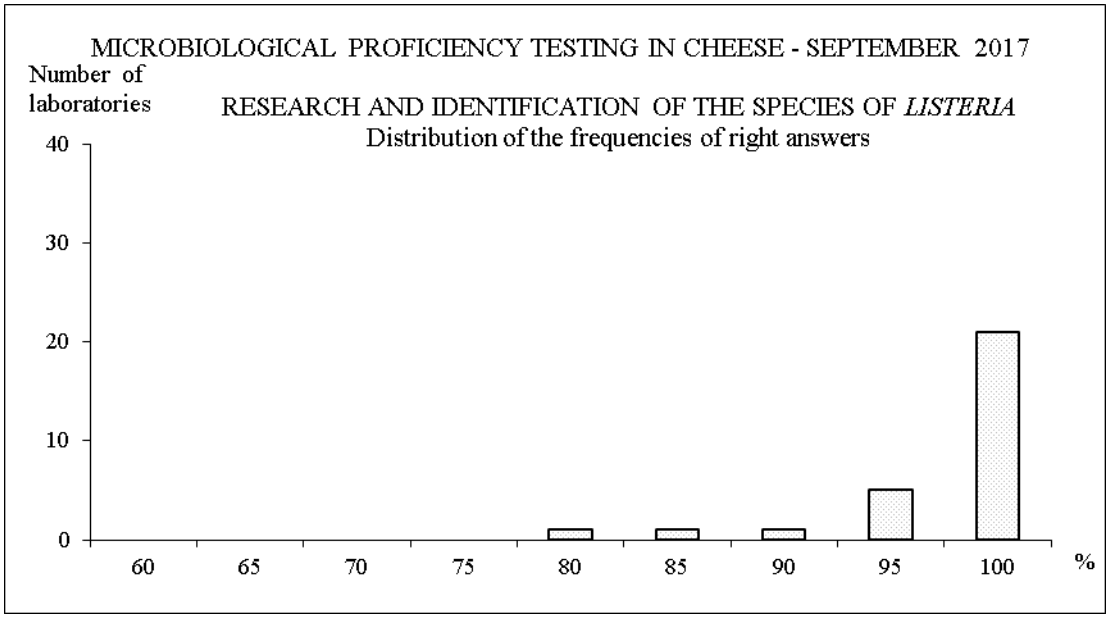


Figure 1b

The figure 2 shows the distribution in frequency of right answers of all the participating laboratories performing a detection of *Listeria monocytogenes*.
(Answers 12, 22, 32, 42 and 52)

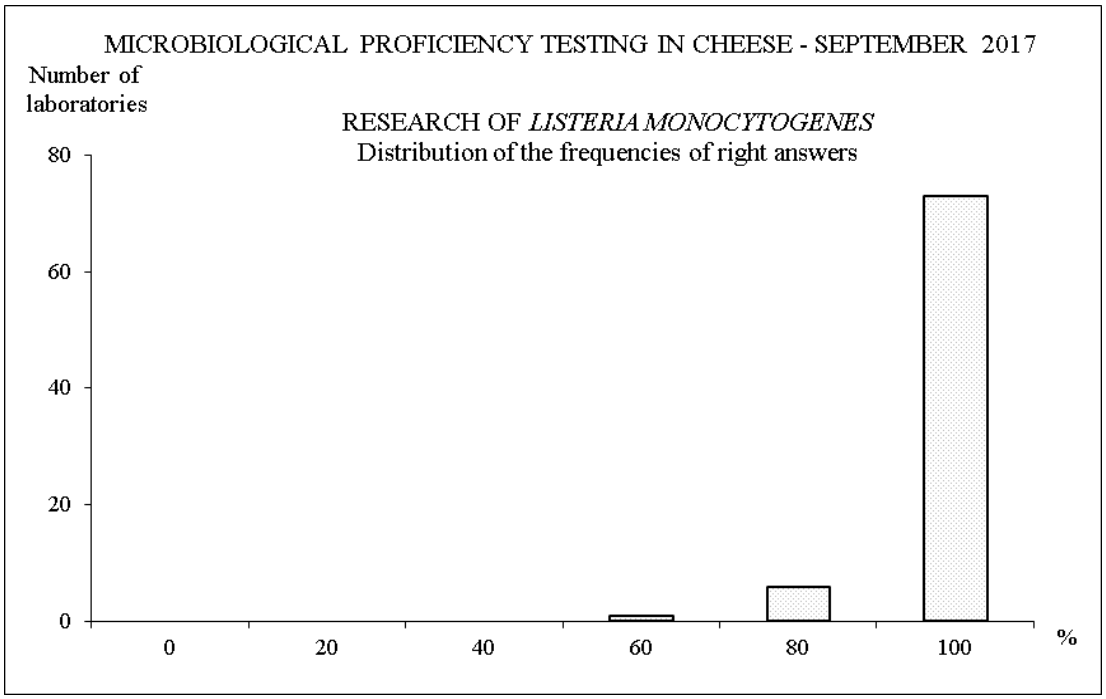


Figure 1c

The figure 3 shows the distribution in frequency of right answers of all the participating laboratories performing a detection of the genus *Listeria*.
(Answers 11, 21, 31, 41 and 51)