

EXPERTISE AND SERVICE PROVISION  
QUALITY OF LABORATORIES

EXTERNAL QUALITY ASSESSMENT  
IN VETERINARY DIAGNOSIS

**DEFINITIVE GLOBAL REPORT**

**Proficiency Testing in Veterinary Diagnosis  
Enzootic Bovine Leukosis**

**SURVEY 2020/7**

**Sciensano/PT VET EBL/1-E**

Expertise and service provision  
Quality of laboratories  
J. Wytsmanstreet, 14  
1050 Bruxelles | Belgique

[www.sciensano.be](http://www.sciensano.be)

<b>COMMITTEE OF EXPERTS</b>
-----------------------------

<b>Sciensano</b>			
Secretariat		PHONE:	02/642.55.22
		FAX:	02/642.56.45
Name scheme coordinator	Bernard China	PHONE:	02 642 53 85
		e-mail:	Bernard.China@sciensano.be
Name alternate scheme coordinator	Arnaud Capron	PHONE:	
		e-mail:	Arnaud.Capron@sciensano.be
<b>Experts</b>	<b>Institute</b>		
<b>Ann Brigitte Cay</b>	<b>Sciensano</b>		
<b>Marylene Tignon</b>	<b>Sciensano</b>		

A preliminary version of this report was submitted to the National reference laboratory: 30/10/2020

**Authorization to release the report:**

By Bernard China, scheme coordinator, on 06/11/2020.

*Bernard China*



All the reports are also available on our webpage:

[https://www.wiv-isp.be/QML/activities/PT%20VET/fr/originaux/rapports\\_annee.htm](https://www.wiv-isp.be/QML/activities/PT%20VET/fr/originaux/rapports_annee.htm)

[https://www.wiv-isp.be/QML/activities/PT%20VET/nl/originaux/rapports\\_annee.htm](https://www.wiv-isp.be/QML/activities/PT%20VET/nl/originaux/rapports_annee.htm)

## TABLE OF CONTENTS

.....	3
<b>INTRODUCTION</b> .....	<b>4</b>
THE SAMPLES .....	4
SURVEY TIMELINE .....	5
<b>RESULTS</b> .....	<b>6</b>
<i>Results per sample</i> .....	6
1.1. <i>Used methods</i> .....	6
<b>ANNEXES</b> .....	<b>7</b>
ANNEX 1. QUANTITATIVE DATA FOR BTV SEROLOGY .....	7
ANNEX 2: ADDITIONNAL INFORMATION .....	11
PRELIMINARY REPORT .....	11
GRAPHICAL REPRESENTATION .....	12

## **Introduction**

This survey was dedicated to the detection of antibodies specific to Enzootic Bovine Leukosis virus in serum using ELISA.

## **The samples**

The samples were prepared by the National Reference Laboratory, Enzootic viral, vectorborne and bees diseases, Infectious diseases in animals Directorate, Sciensano.

### **Homogeneity**

Six different samples were produced by the reference laboratory  
PT2020 EBLSERNS1, PT2020 EBLSERNS2, PT2020 EBLSERPS1, PT2020 EBLSERPS2  
PT2020 EBLSERPS3 and PT2020 EBLSERPS4

The homogeneity of the samples were tested by the NRL before the survey on 10 replicates. The samples were considered as homogeneous.

### **Target Values**

The target value was determined by the NRL based on the homogeneity tests.  
PT2020 EBLSERNS1, and PT2020 EBLSERNS2 are negative  
PT2020 EBLSERPS1, PT2020 EBLSERPS2 PT2020 EBLSERPS3 and PT2020 EBLSERPS4  
are positive

### **Stability**

The stability was determined by comparison of the pre-survey results and the results obtained by the NRL during and after the survey. The samples were considered as stable.

### **The participants**

5 laboratories participated to the IBR Virology survey:

Sciensano ; Arsia (Ciney) , DGZ (Torhout), Anses (Niort), LMVE (Luxemburg)

## Randomisation and panel composition

Since a specific number has been assigned to each laboratory, the randomisation has been performed as follow:

Sample ID	Group 1 (97505, 97507, 97513)	Group 2 (97508, 97516)
<b>EBLSER2001</b>	PT2020 EBLSERNS1	PT2020 EBLSERPS1
<b>EBLSER2002</b>	PT2020 EBLSERNS2	PT2020 EBLSERPS2
<b>EBLSER2003</b>	PT2020 EBLSERNS1	PT2020 EBLSERPS2
<b>EBLSER2004</b>	PT2020 EBLSERNS1	PT2020 EBLSERPS3
<b>EBLSER2005</b>	PT2020 EBLSERNS1	PT2020 EBLSERPS3
<b>EBLSER2006</b>	PT2020 EBLSERNS1	PT2020 EBLSERPS4
<b>EBLSER2007</b>	PT2020 EBLSERNS1	PT2020 EBLSERNS2
<b>EBLSER2008</b>	PT2020 EBLSERPS2	PT2020 EBLSERPS2
<b>EBLSER2009</b>	PT2020 EBLSERPS3	PT2020 EBLSERPS2
<b>EBLSER2010</b>	PT2020 EBLSERPS2	PT2020 EBLSERNS1
<b>EBLSER2011</b>	PT2020 EBLSERPS3	PT2020 EBLSERPS3
<b>EBLSER2012</b>	PT2020 EBLSERPS2	PT2020 EBLSERNS1
<b>EBLSER2013</b>	PT2020 EBLSERPS3	PT2020 EBLSERPS4
<b>EBLSER2014</b>	PT2020 EBLSERPS2	PT2020 EBLSERNS1
<b>EBLSER2015</b>	PT2020 EBLSERPS1	PT2020 EBLSERPS4
<b>EBLSER2016</b>	PT2020 EBLSERPS3	PT2020 EBLSERNS1
<b>EBLSER2017</b>	PT2020 EBLSERPS4	PT2020 EBLSERPS4
<b>EBLSER2018</b>	PT2020 EBLSERPS4	PT2020 EBLSERNS1
<b>EBLSER2019</b>	PT2020 EBLSERPS4	PT2020 EBLSERPS3
<b>EBLSER2020</b>	PT2020 EBLSERPS4	PT2020 EBLSERNS1

The panel was constituted of 20 samples of 250 µl.

## **Survey Timeline**

Transfer of the samples from NRL to QL: 03/06/2020

Randomization of the samples by QL: 05/06/2020

sending samples to participants: 15/06/2020. The samples were sent on dry ice.

Deadline for the results encoding: 17/07/2020

Preliminary report: 22/07/2020

## Results

### Results per sample

5 laboratories encoded results.

Table R1. Results per sample

Sample ID	Expected result	Number of repetitions (total results)	Observed result
PT2020EBLSERNS1	Negative	6 (30)	29 negative results 1 “not determined” result
PT2020EBLSERNS2	Negative	1 (5)	5 negative results
PT2020EBLSERPS1	Positive	1 (5)	5 positive results
PT2020EBLSERPS2	Positive	4 (20)	19 positive results 1 “not determined” result
PT2020EBLSERPS3	Positive	4 (20)	20 positive results
PT2020EBLSERPS4	Positive	4 (20)	20 positive results

Globally, on 98 encoded results, 100% were correct. 2 results were considered as “not determined”.

### Results per method

Table R2. Results per method

Method	N	NR	NCR	%	FP	FN	ND
Zoetis SERELISA BLV Ab Mono Blocking	4	80	78	97.5	0	0	2
In House	1	20	20	100	0	0	0
Total	5	100	98	98	0	0	2

NR: number of results

NCR: number of correct results

FP: false positive

FN: false negative

ND: not determined

### Results per laboratory

Laboratory	Method	NR	NCR	%	ND
97505	Zoetis	20	20	100	0
97507	Zoetis	20	18	90	2
97508	Zoetis	20	20	100	0
97513	In house	20	20	100	0
97516	Zoetis	20	20	100	0
Total		100	98	98	2

Conclusion.

All laboratories encoded correct results. One laboratory did not encoded results for 2 samples due to the bad quality of the samples. The results for these samples were considered as “not determined”.

## **ANNEXES**

### **Annex 1. Quantitative data for EBL serology (not under accreditation)**

#### Sample PT2020EBLSERNS1

Table A1. Quantitative normalized values (%)

	<b>97505</b>	<b>97507</b>	<b>97508</b>	<b>97513</b>	<b>97516</b>
<b>R1</b>	1,310	3,157	2,553	-1,10181	-18,866
<b>R2</b>	4,468	ND	-0,774	-1,01813	-8,015
<b>R3</b>	-2,284	6,885	-13,230	-0,33473	-19,852
<b>R4</b>	-0,437	5,591	3,482	-0,58577	-23,305
<b>R5</b>	-2,519	5,972	3,482	-0,55788	-18,002
<b>R6</b>	-0,907	4,907	1,315	-0,934	-9,125
<b>Mean</b>	-0,062	5,302	-0,529	-0,755	-16,194
<b>SD</b>	2,616503	1,396009	6,425748	0,305182	6,18427
<b>CV</b>	-4248,7%	26,3%	-1215,4%	-40,4%	-38,2%

Rn: repetition n

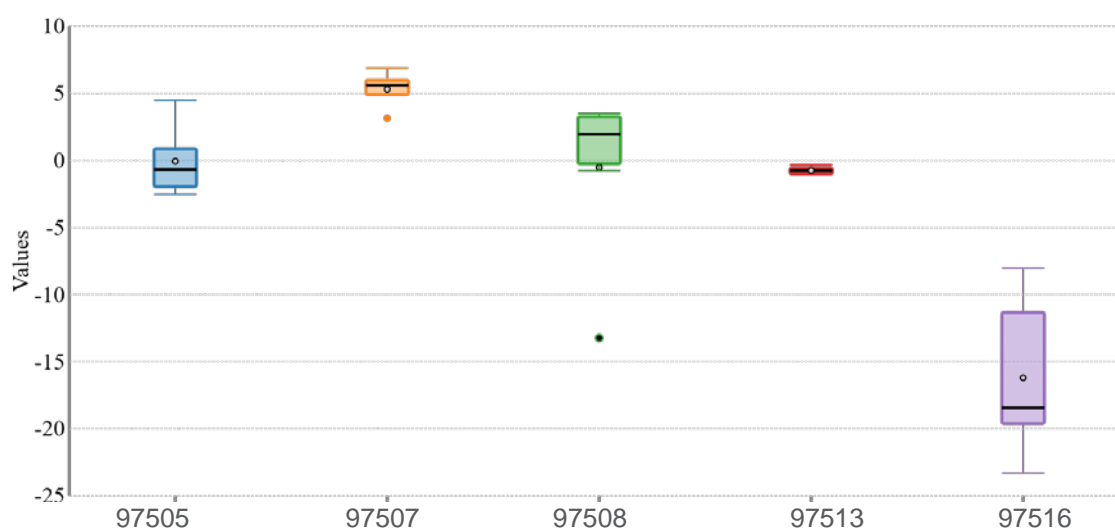


Figure A1. Boxplot dispersion of the results per participant for the sample PT2020EBLSERNS1

## Sample PT2020EBLSERPS2

Table A2. Quantitative normalized values (%)

	97505	97507	97508	97513	97516
<b>R1</b>	84.145	83.872	82.166	386.709	88.903
<b>R2</b>	77.864	ND	81.702	391.269	91.492
<b>R3</b>	79.845	81.666	78.994	421.450	93.218
<b>R4</b>	78.703	83.34	81.625	410.279	93.711
<b>Mean</b>	80.139	82.959	81.122	402.427	91.831
<b>SD</b>	2.791	1.151	1.438	16.280	2.172
<b>CV</b>	3.48%	1.39%	1.77%	4.05%	2.37%

Rn: repetition n

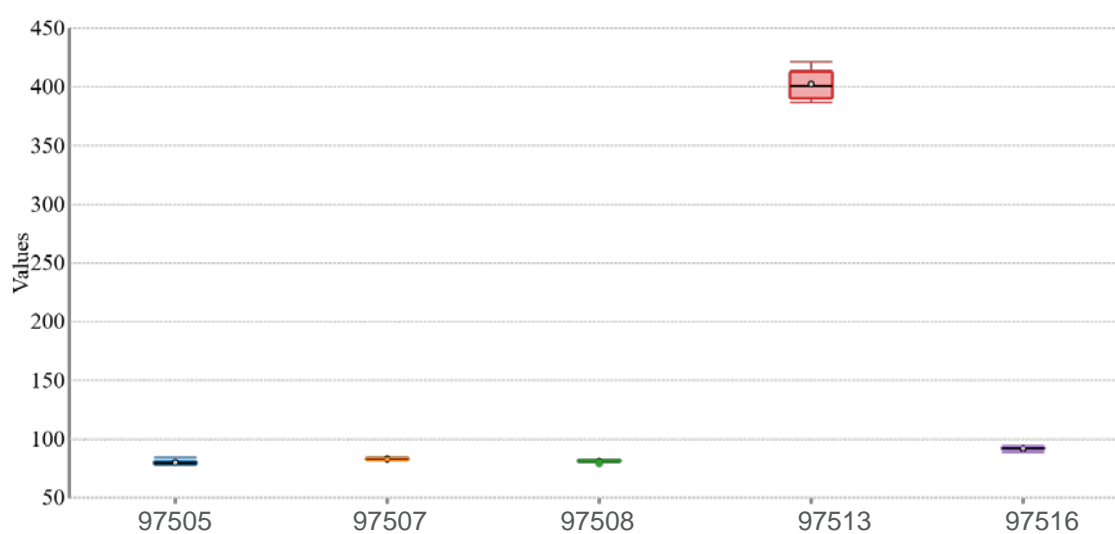


Figure A2. Boxplot distribution of the values (%) per participant



Sample PT2020EBLSERPS3

Table A3. Quantitative normalized results (%)

	97505	97507	97508	97513	97516
<b>R1</b>	97.212	98.402	98.259	262.678	98.274
<b>R2</b>	95.969	97.718	97.950	280.642	100.370
<b>R3</b>	96.809	96.805	98.027	300.279	99.014
<b>R4</b>	97.414	97.566	98.259	247.238	99.137
<b>Mean</b>	96.851	97.623	98.124	272.709	99.199
<b>SD</b>	0.639	0.655	0.159	22.894	0.869
<b>CV</b>	0.66%	0.67%	0.16%	8.40%	0.88%

Rn: repetition n

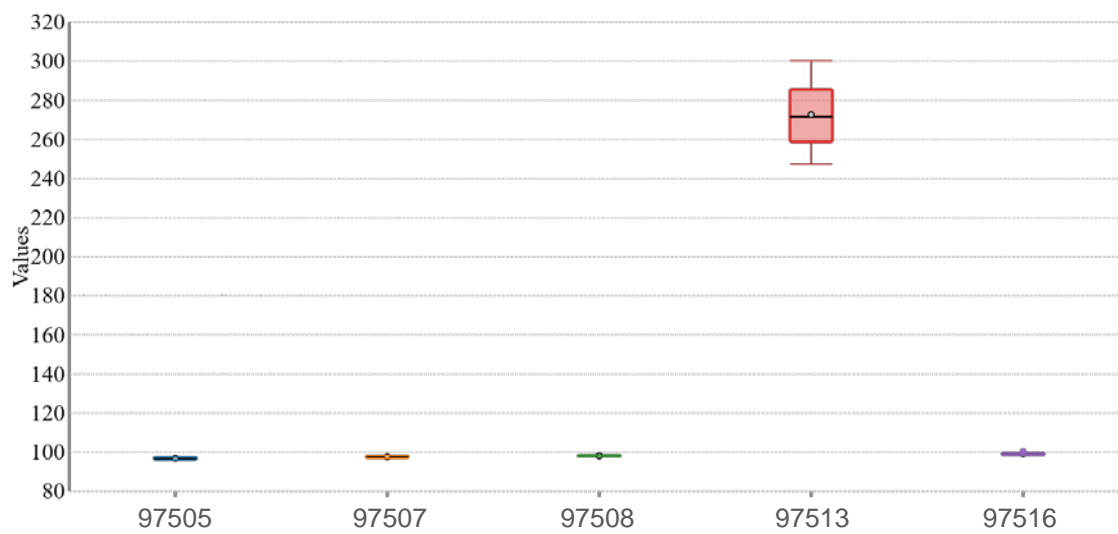


Figure A3. Boxplot dispersion of the values (%) per participant

Sample PT2020EBLSERPS4

Table A4. Quantitative normalized values (%)

	97505	97507	97508	97513	97516
<b>R1</b>	94.827	94.447	96.867	176.639	99.630
<b>R2</b>	78.435	93.001	96.015	192.134	101.110
<b>R3</b>	93.987	94.218	96.867	185.774	100.493
<b>R4</b>	95.197	93.305	97.021	210.056	100.247
<b>Mean</b>	90.611	93.743	96.692	191.151	100.370
<b>SD</b>	8.134	0.698	0.457	14.117	0.612
<b>CV</b>	8.98%	0.75%	0.47%	7.39%	0.61%

Rn: repetition n

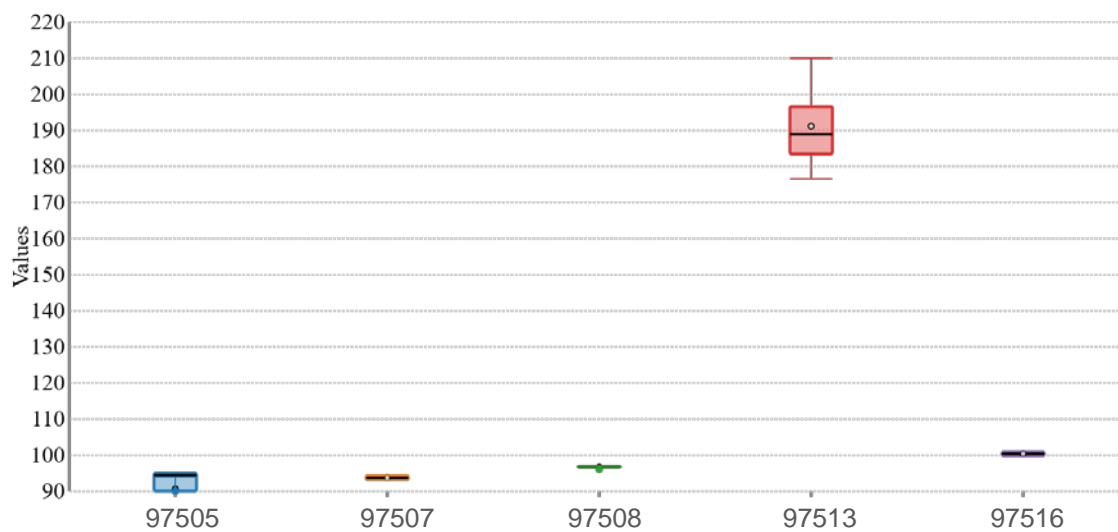


Figure A4. Boxplot dispersion of the values (%) per participant

## **Annex 2: additional information**

### **PRELIMINARY REPORT**

The preliminary report of this survey is available on our website via the following link:

[https://www.wiv-isp.be/QML/activities/PT%20VET/fr/originaux/rapports\\_annee.htm](https://www.wiv-isp.be/QML/activities/PT%20VET/fr/originaux/rapports_annee.htm)

The calendar for Proficiency Testing in Veterinary diagnosis is available on our website:

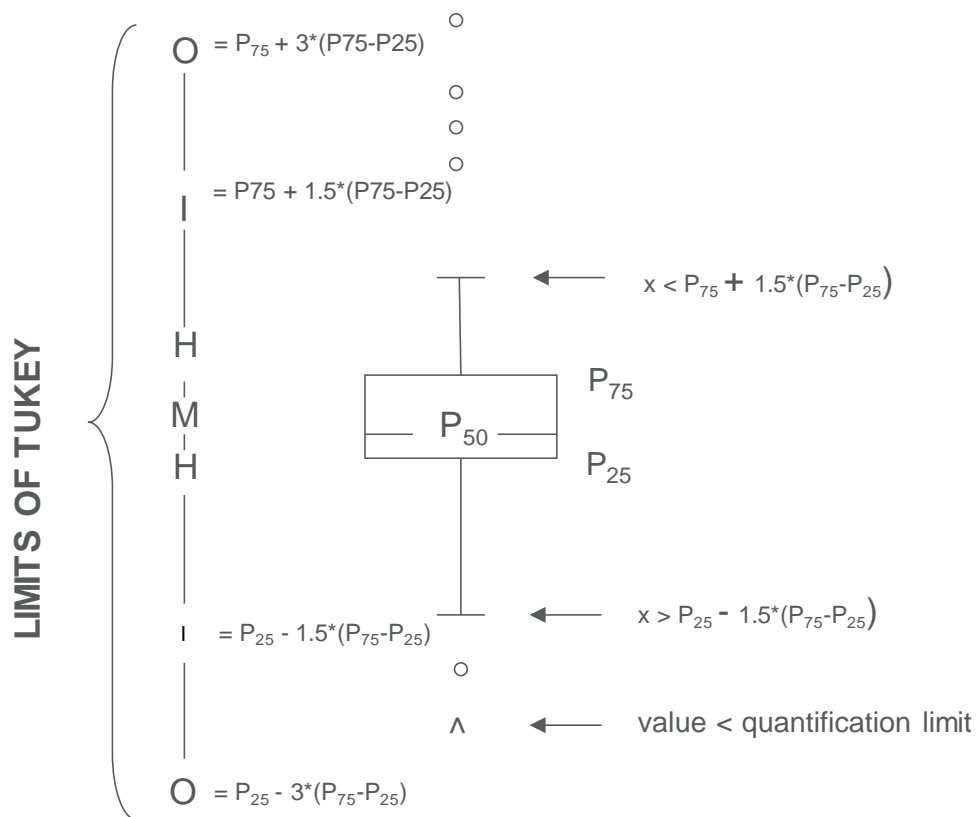
The link is:

[https://www.wiv-isp.be/QML/activities/external\\_quality/calendar/calender\\_PT%20VET/\\_fr/Calendrier\\_2020-PT%20VET%202.htm](https://www.wiv-isp.be/QML/activities/external_quality/calendar/calender_PT%20VET/_fr/Calendrier_2020-PT%20VET%202.htm)

## Graphical representation

Besides the tables with the results a "Box and whisker" plot is added. It contains the following elements for the methods with at least 6 participants:

- a rectangle ranging from percentile 25 ( $P_{25}$ ) to percentile 75 ( $P_{75}$ )
- a central line representing the median of the results ( $P_{50}$ )
- a lower limit showing the smallest value  $x > P_{25} - 1.5 * (P_{75} - P_{25})$
- an upper limit representing the largest value  $x < P_{75} + 1.5 * (P_{75} - P_{25})$
- all points outside this interval are represented by a dot.



### Corresponding limits in case of normal distribution

© Sciensano, Brussels 2020.

This report may not be reproduced, published or distributed without the consent of Sciensano. The laboratories' individual results are confidential. They are not passed on by Sciensano to third parties, nor to members of the Commission, the committees of experts or the working group EQA.

END