BIOLOGICAL HEALTH RISKS
QUALITY OF LABORATORIES

PROFICIENCY TEST
IN VETERINARY DIAGNOSIS

DEFINITIVE GLOBAL REPORT

PT-PROGRAM 2025-5

PARATUBERCULOSIS (PTB)

Sciensano/PT-program PTB/2025-5/E

Biological health risks
Quality of laboratories
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ISSN: 2294-3498

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A draft version of this report was submitted to the experts on 08/08/2025.

The experts were invited to send their comments via e-mail.

Responsibilities:
The National Reference Laboratory (NRL) of Sciensano was consulted for advice about the content of the global report, the interpretation of the results and the evaluation criteria. The responsibility for the choice of the samples used was carried out by the NRL.

Authorization of the report: by Ynse Van de Maele, coordinator

Date of publication: 27/08/2025

All the global reports are also available on our webpage:

- NL: https://www.sciensano.be/nl/externe-kwaliteitsevaluatie/diergezondheid-pt-vet
- FR: https://www.sciensano.be/fr/evaluation-externe-de-la-qualite/sante-animale-pt-vet
- EN: https://www.sciensano.be/en/external-quality-assessment/animal-health-pt-vet

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1 INTRODUCTION

Details relevant to the proficiency test are available in the procedure SOP 2.5/01 'Management of the proficiency tests organized by the scientific directorate infectious diseases in animals'. The proficiency test was organised according to the ISO17043 'Conformity assessment - General requirements for proficiency testing' norm.

2 AIM

The aim of the PT Paratuberculosis (serology) was to evaluate the ability of the participating laboratories to detect the absence or presence of antibodies against *Mycobacterium avium subsp.* in serum and milk of cattle, using ELISA.

3 MATERIALS AND METHODS

3.1 Serology (serum)

3.1.1 THE PARTICIPANTS

Seven laboratories participated in the proficiency test of Paratuberculosis serology on serum samples. The laboratory numbers of the participating laboratories are:

- 97504
- 97507
- 97508
- 97509
- 97514
- 97516
- 97540

3.1.2 THE SAMPLES

The National Reference Laboratory (NRL) of Sciensano, within the scientific service of 'Veterinary Bacteriology' in the department of 'Infectious diseases in animals Directorate', prepared the samples. Participants were instructed to reconstitute the lyophilized sera with 200 µL of demineralized water and incubate the sample for 20 minutes at room temperature without shaking in order to allow full rehydratation. Thereafter, they were directed to homogenize the sample by vortexing and to rest the sample for another 10 minutes before using it.

Information about the **origin** and **preparation** of the samples:

- PT2025PTBSER_PS1 was a positive serum sample collected from naturally infected animal (RT-PCR positive in organs). The serum was diluted 1/25 in negative serum.
- PT2025PTBSER_PS2 was a positive serum sample collected from naturally infected animal (RT-PCR positive in organs), same animal as PS1. The serum was diluted 1/16 in negative serum.
- PT2025PTBSER_PS3 was a positive serum sample collected from naturally infected animal (RT-PCR positive in organs), another animal as PS1 and PS2. The serum was diluted 1/16 in negative serum.
- PT2025PTBSER_NS1 and NS2 were negative serum samples collected from field negative animal.

3.1.3 HOMOGENEITY

All samples included in the panel were evaluated by testing three independent vials of freeze dried samples with two commercial competitive ELISA kits designed for the detection of antibodies against Mycobacterium paratuberculosis. This was performed before sending the samples for the PT.

The coefficient of variation (CV) was calculated for each sample across the results of the three freeze dried vials to assess sample homogeneity. A coefficient of variability (CV) below 10% was considered acceptable to confirm homogeneity of the vials. For negative samples, higher variability was anticipated due to signal values approaching the assay's lower detection threshold, and thus the <10% CV criterion may not always be met.

However, it should be noted that it is important that the qualitative results are always constant (i.e. positive results stay positive and negative results stay negative) for these samples since these are the results that will be used when interpreting the PT.

3.1.4 TARGET VALUES

The target values were determined by the NRL based on the homogeneity tests.

Sample content	Expected result
PT2025PTBSER_PS1	POS
PT2025PTBSER_PS2	POS
PT2025PTBSER_PS3	POS
PT2025ASFSER_NS1	NEG
PT2025ASFSER_NS2	NEG

(POS = positive; NEG = negative)

3.1.5 STABILITY

To assess the stability of the panel, three vials for each freeze dried samples were re-evaluated after the PT (post-PT testing). The serological status of each sample was expected to remain consistent with that determined during the pre-PT evaluation. Testing was performed using two commercial competitive ELISA kits designed for the detection of antibodies against Mycobacterium paratuberculosis.

To assess sample stability, the coefficient of variation (CV) was calculated for each sample across testing three freeze dried vials. Acceptance criteria were identical to those used for the homogeneity assessment, with a CV below 15% considered acceptable. However, above that, it is important that the qualitative results are always constant.

3.1.6 RANDOMISATION AND PANEL COMPOSITION

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

Sample content: PT2025PTBSER_	97504	97507	97508	97509
PS1 (1)	PTBS25-2	PTBS25-2	PTBS25-7	PTBS25-3
PS1 (2)	PTBS25-8	PTBS25-8	PTBS25-8	PTBS25-9
PS2	PTBS25-10	PTBS25-10	PTBS25-3	PTBS25-10
PS3 (1)	PTBS25-5	PTBS25-5	PTBS25-1	PTBS25-1
PS3 (2)	PTBS25-6	PTBS25-6	PTBS25-4	PTBS25-2
PS3 (3)	PTBS25-7	PTBS25-7	PTBS25-5	PTBS25-5
NS1 (1)	PTBS25-4	PTBS25-9	PTBS25-6	PTBS25-4
NS1 (2)	PTBS25-9	PTBS25-4	PTBS25-10	PTBS25-8
NS2 (1)	PTBS25-1	PTBS25-3	PTBS25-2	PTBS25-6
NS2 (2)	PTBS25-3	PTBS25-1	PTBS25-9	PTBS25-7

Sample content: PT2025PTBSER_	97514	97516	97540
PS1 (1)	PTBS25-2	PTBS25-4	PTBS25-6
PS1 (2)	PTBS25-8	PTBS25-10	PTBS25-10
PS2	PTBS25-9	PTBS25-1	PTBS25-7
PS3 (1)	PTBS25-1	PTBS25-5	PTBS25-1
PS3 (2)	PTBS25-3	PTBS25-7	PTBS25-4
PS3 (3)	PTBS25-4	PTBS25-8	PTBS25-9
NS1 (1)	PTBS25-5	PTBS25-2	PTBS25-2
NS1 (2)	PTBS25-10	PTBS25-6	PTBS25-8
NS2 (1)	PTBS25-6	PTBS25-3	PTBS25-3
NS2 (2)	PTBS25-7	PTBS25-9	PTBS25-5

3.1.7 THRESHOLD FOR QUALIFICATION

Following the procedure, a participating laboratory is only qualified if the level of agreement for the ten reference samples is at least 90%.

3.2 Serology (milk)

3.2.1 THE PARTICIPANTS

Seven laboratories participated in the proficiency test of Paratuberculosis serology on milk samples. The laboratory numbers of the participating laboratories are:

- 97504
- 97509
- 97511
- 97512
- 97514
- 97516
- 97519

3.2.2 THE SAMPLES

The National Reference Laboratory (NRL) of Sciensano, within the scientific service of 'Veterinary Bacteriology' in the department of 'Infectious diseases in animals Directorate', prepared the samples. Participants were instructed to reconstitute the milk with 500 µL of demineralized water and incubate the sample for 20 minutes at room temperature without shaking in order to allow full rehydratation. Thereafter, they were directed to homogenize the sample by vortexing and to rest the sample for another 10 minutes before using it.

Information about the **origin** and **preparation** of the samples:

- PT2025PT_PM1 was a positive milk sample collected from naturally infected animal, RT-PCR positive in faeces, undiluted.
- PT2025PTBMIL_PM2 was a positive milk sample was prepared by diluting a positive serum in negative commercial milk, 1/120. The serum was collected from naturally infected animal, positive in RT-PCR in organs.
- PT2025PTBMIL_NM1 and NM2 were negative milk samples collected from field negative animal from a herd historically negative for paratuberculosis.

3.2.3 HOMOGENEITY

All samples included in the panel were evaluated by testing three independent vials of freeze dried samples with two commercial competitive ELISA kits designed for the detection of antibodies against Mycobacterium paratuberculosis. This was performed before sending the samples for the PT.

The coefficient of variation (CV) was calculated for each sample across the results of the three freeze dried vials to assess sample homogeneity. A coefficient of variability (CV) below 10% was considered acceptable to confirm homogeneity of the vials. For negative samples, higher variability was anticipated due to signal values approaching the assay’s lower detection threshold, and thus the <10% CV criterion may not always be met.

However, it should be noted that it is important that the qualitative results are always constant (i.e. positive results stay positive and negative results stay negative) for these samples since these are the results that will be used when interpreting the PT.

3.2.4 TARGET VALUES

The target values were determined by the NRL based on the homogeneity tests.

Sample content	Expected result
PT2025PTBMIL_PM1	POS
PT2025PTBMIL_PM2	POS
PT2025PTBMIL_NM1	NEG
PT2025PTBMIL_NM2	NEG

(POS = positive; NEG = negative)

3.2.5 STABILITY

To assess the stability of the panel, three vials for each freeze dried samples were re-evaluated after the PT (post-PT testing). The serological status of each sample was expected to remain consistent with that determined during the pre-PT evaluation. Testing was performed using two commercial competitive ELISA kits designed for the detection of antibodies against Mycobacterium paratuberculosis.

To assess sample stability, the coefficient of variation (CV) was calculated for each sample across testing three freeze dried vials. Acceptance criteria were identical to those used for the homogeneity assessment, with a CV below 15% considered acceptable. However, above that, it is important that the qualitative results are always constant.

3.2.6 RANDOMISATION AND PANEL COMPOSITION

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

Sample content: PT2025PTBMIL_	97504	97509	97511	97512
PM1 (1)	PTBM25-3	PTBM25-3	PTBM25-8	PTBM25-2
PM1 (2)	PTBM25-7	PTBM25-5	PTBM25-10	PTBM25-4
PM2 (1)	PTBM25-1	PTBM25-6	PTBM25-1	PTBM25-1
PM2 (2)	PTBM25-5	PTBM25-7	PTBM25-4	PTBM25-6
PM2 (3)	PTBM25-8	PTBM25-9	PTBM25-5	PTBM25-8
PM2 (4)	PTBM25-10	PTBM25-10	PTBM25-9	PTBM25-10
NM1 (1)	PTBM25-2	PTBM25-1	PTBM25-2	PTBM25-5
NM1 (2)	PTBM25-6	PTBM25-2	PTBM25-6	PTBM25-7
NM2 (1)	PTBM25-4	PTBM25-4	PTBM25-3	PTBM25-3
NM2 (2)	PTBM25-9	PTBM25-8	PTBM25-7	PTBM25-9

Sample content: PT2025PTBMIL_	97514	97516	97519
PM1 (1)	PTBM25-5	PTBM25-1	PTBM25-1
PM1 (2)	PTBM25-10	PTBM25-10	PTBM25-6
PM2 (1)	PTBM25-1	PTBM25-2	PTBM25-2
PM2 (2)	PTBM25-2	PTBM25-5	PTBM25-3
PM2 (3)	PTBM25-3	PTBM25-6	PTBM25-4
PM2 (4)	PTBM25-9	PTBM25-7	PTBM25-8
NM1 (1)	PTBM25-4	PTBM25-4	PTBM25-5
NM1 (2)	PTBM25-8	PTBM25-8	PTBM25-9
NM2 (1)	PTBM25-6	PTBM25-3	PTBM25-7
NM2 (2)	PTBM25-7	PTBM25-9	PTBM25-10

3.2.7 THRESHOLD FOR QUALIFICATION

Following the procedure, a participating laboratory is only qualified if the level of agreement for the ten reference samples is at least 90%.

4 TIMELINE

The randomisation of the samples by QL took place on June 20, 2025. The samples were then sent to the participants on June 23, 2025. The deadline for submitting the results was set for July 18, 2025. All participants submitted their results on time. Finally, the individual reports were provided to the participants on August 8, 2025.

5 RESULTS

5.1 Serology (serum)

5.1.1 RESULTS PER SAMPLE

The panel consisted of five different samples. However, samples PS1, NS1 and NS2 were replicated twice. In addition, sample PS3 was repeated three times. Therefore, the panel included ten samples in total.

Two laboratories had chosen to test two different methods on the same samples, implying that there were two datasets submitted. These additional results are included in the tables below.

Sample content	Expected results	Total results	Observed results
PS1	POS	18	18 POS
PS2	POS	9	9 POS
PS3	POS	27	27 POS
NS1	NEG	18	18 NEG
NS2	NEG	18	18 NEG

(POS = positive; NEG = negative)

5.1.2 RESULTS PER METHOD

Below, the table displays the results for each method.

Method	Name producer	Name kit	N	NR	NCR	%
ELISA Indirect	IDEXX	Paratuberculosis Screening Ab Test	**4**	**40**	**40**	**100**
ELISA Indirect	IDVet	ID Screen Paratuberculosis Indirect ELISA Kit	**4**	**40**	**40**	**100**
ELISA Indirect	Biosellal	BioLisa kit MAP Ab V2	**1**	**10**	**10**	**100**
TOTAL			**9**	**90**	**90**	**100**

(N= number of datasets; NR = number of results; NCR = number of correct results).

5.1.3 CONCLUSION

In 2025, seven laboratories participated in the proficiency test Paratuberculosis serology (serum) organised by Sciensano. According to the procedure currently in force, the performance of a participating laboratory is satisfactory if at least 90% of the results provided by the laboratory are in agreement with the status of the reference samples assigned by the NRL of the Scientific Directorate Infectious Diseases in Animals of Sciensano. All laboratories succeeded in achieving the maximum score (100%) for this test.

5.2 Serology (milk)

5.2.1 RESULTS PER SAMPLE

The panel consisted of four different samples. However, samples PM1, NM1 and NM2 were replicated twice. In addition, sample PM2 was repeated four times. Therefore, the panel included ten samples in total.

One laboratory had chosen to test two different methods on the same samples, implying that there were two datasets submitted. These additional results are included in the tables below.

Sample content	Expected results	Total results	Observed results
PM1	POS	16	16 POS
PM2	POS	32	32 POS
NM1	NEG	16	16 NEG
NM2	NEG	16	16 NEG

(POS = positive; NEG = negative)

5.2.2 RESULTS PER METHOD

Below, the table displays the results for each method.

Method	Name producer	Name kit	N	NR	NCR	%
ELISA Indirect	IDEXX	Paratuberculosis Screening Ab Test	**5**	**50**	**50**	**100**
ELISA Indirect	IDVet	ID Screen Paratuberculosis Indirect ELISA Kit	**2**	**20**	**20**	**100**
ELISA Indirect	Biosellal	BioLisa kit MAP Ab V2	**1**	**10**	**10**	**100**
TOTAL			**8**	**80**	**80**	**100**

(N= number of datasets; NR = number of results; NCR = number of correct results).

5.2.3 CONCLUSION

In 2025, seven laboratories participated in the proficiency test Paratuberculosis serology (milk) organised by Sciensano. According to the procedure currently in force, the performance of a participating laboratory is satisfactory if at least 90% of the results provided by the laboratory are in agreement with the status of the reference samples assigned by the NRL of the Scientific Directorate Infectious Diseases in Animals of Sciensano. All laboratories succeeded in achieving the maximum score (100%) for this test.

6 ANNEXES (NOT UNDER ACCREDITATION)

This quantitative data is not covered by BELAC accreditation and is provided solely for the information of the laboratories.

6.1 Annex : Quantitative results

Boxplots are generated exclusively for the positive samples that exhibited repetitions within the panel.

The boxplots, shown down below, were created by using the following software programme: shiny.chemgrid.org/boxplotr/

Interpretation and formula details of participant-used kits

Kit	*Formula*	*Interpretation*
IDEXX - Paratuberculosis Screening Ab Test	S/P % = ((OD_{sample} – $OD_{neg\ control}$) / ($OD_{pos\ control}$ – $OD_{neg\ control}$)) × 100	Serum: ≤ 45% → Negative 45–55% → Doubtful ≥ 55% → Positive Milk: ≤ 20% → Negative 20–30% → Doubtful ≥ 30% → Positive
IDVet - ID Screen Paratuberculosis Indirect ELISA Kit	S/P % = ((OD_{sample} – $OD_{neg\ control}$) / ($OD_{pos\ control}$ – $OD_{neg\ control}$)) × 100	Serum: ≤ 60% → Negative 60–70% → Doubtful ≥ 70% → Positive Milk: ≤ 30% → Negative > 30% → Positive
Biosellal - BioLisa kit MAP Ab V2	S/P % = ((OD_{sample} – $OD_{neg\ control}$) / ($OD_{pos\ control}$ – $OD_{neg\ control}$)) × 100	Serum & milk: OD mean pos control > 0.6 OD mean pos control / OD mean neg control > 3

Interpretation of CV(%) in ELISA tests for positive samples

CV(%)	*Interpretation*
≤ 10%	Excellent reproducibility
10% – 15%	Acceptable, but moderate variation
15% – 20%	Questionable, should be reviewed
> 20%	Poor reproducibility - not reliable

6.1.1 SEROLOGY (SERUM)

Quantitative results for duplicate samples: PT2025PTBSER-PS1

Lab number	97504 (1)	97504 (2)	97507	97508 (1)	97508 (2)
Method (ELISA protocol/kit)	M_1	M_2	M_2	M_2	M_1
Pos control	1,2615	1,876	1,33	1,304	1,4625
Neg control	0,044	0,056	0,05	0,0435	0,0645
OD (1)	0,941	3,878	2,84	2,689	1,174
OD (2)	0,969	3,977	3	2,86	1,253

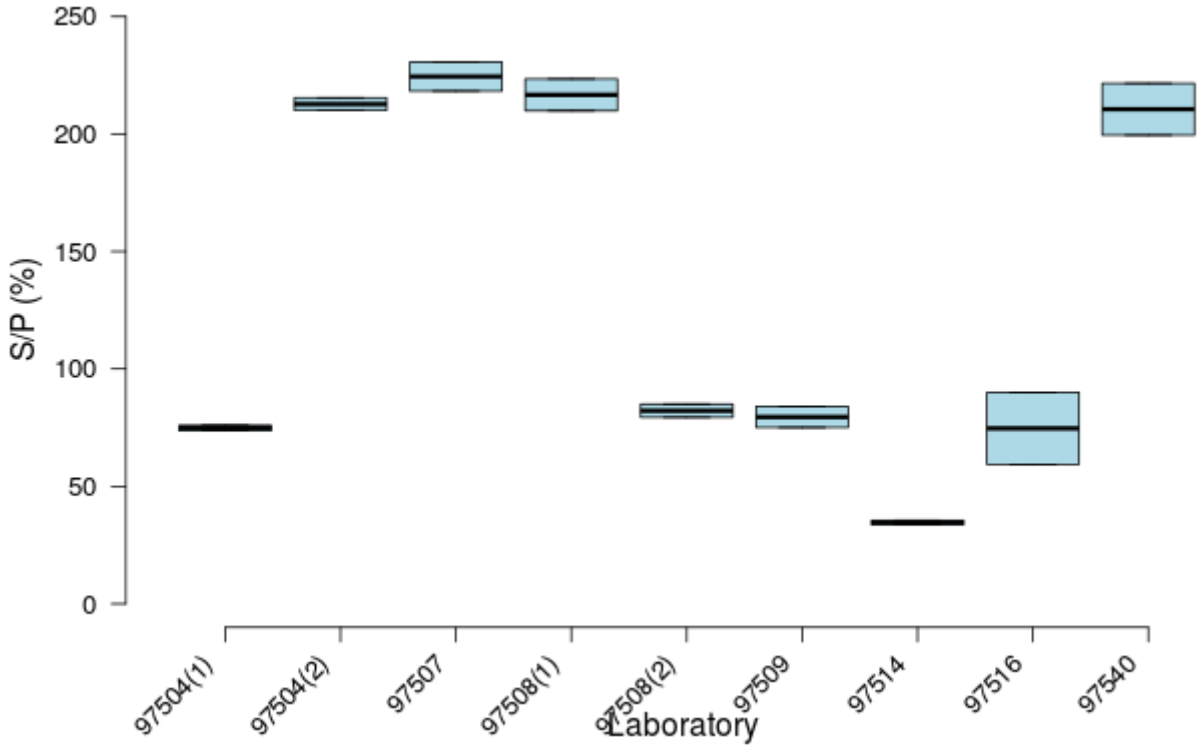
Lab number	97509	97514	97516	97540
Method (ELISA protocol/kit)	M_1	M_3	M_1	M_2
Pos control	0,941	0,904	1,369	1,27495
Neg control	0,052	0,099	0,048	0,04465
OD (1)	0,799	0,37	1,237	2,4992
OD (2)	0,719	0,385	0,832	2,7703

OD = Optical Density; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2

Lab number	97504 (1)	97504 (2)	97507	97508 (1)	97508 (2)
Method (ELISA protocol/kit)	M_1	M_2	M_2	M_2	M_1
S/P % (1)	73,676	210	218,28	209,877	79,363
S/P % (2)	75,975	215,44	230,63	223,443	85,014
Mean	74,826	212,720	224,455	216,660	82,189
SD	1,626	3,847	8,733	9,593	3,996
CV (%)	2,173	1,808	3,891	4,427	4,862

Lab number	97509	97514	97516	97540
Method (ELISA protocol/kit)	M_1	M_3	M_1	M_2
S/P % (1)	84,027	33,665	90,008	199,508
S/P % (2)	75,028	35,528	59,349	221,544
Mean	79,528	34,597	74,679	210,526
SD	6,363	1,317	21,679	15,582
CV (%)	8,001	3,808	29,030	7,401

S/P = Sample-to-Positive ratio; SD = standard deviation; CV = coefficient of variation; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2



Quantitative results for duplicate samples: PT2025PTBSER-PS3

Lab number	97504 (1)	97504 (2)	97507	97508 (1)	97508 (2)
Method (ELISA protocol/kit)	M_1	M_2	M_2	M_2	M_1
Pos control	1,2615	1,876	1,33	1,304	1,4625
Neg control	0,044	0,056	0,05	0,0435	0,0645
OD (1)	1,084	2,121	1,36	1,298	0,881
OD (2)	1,072	2,155	1,54	1,609	0,926
OD (3)	1,087	2,159	1,4	1,624	0,976

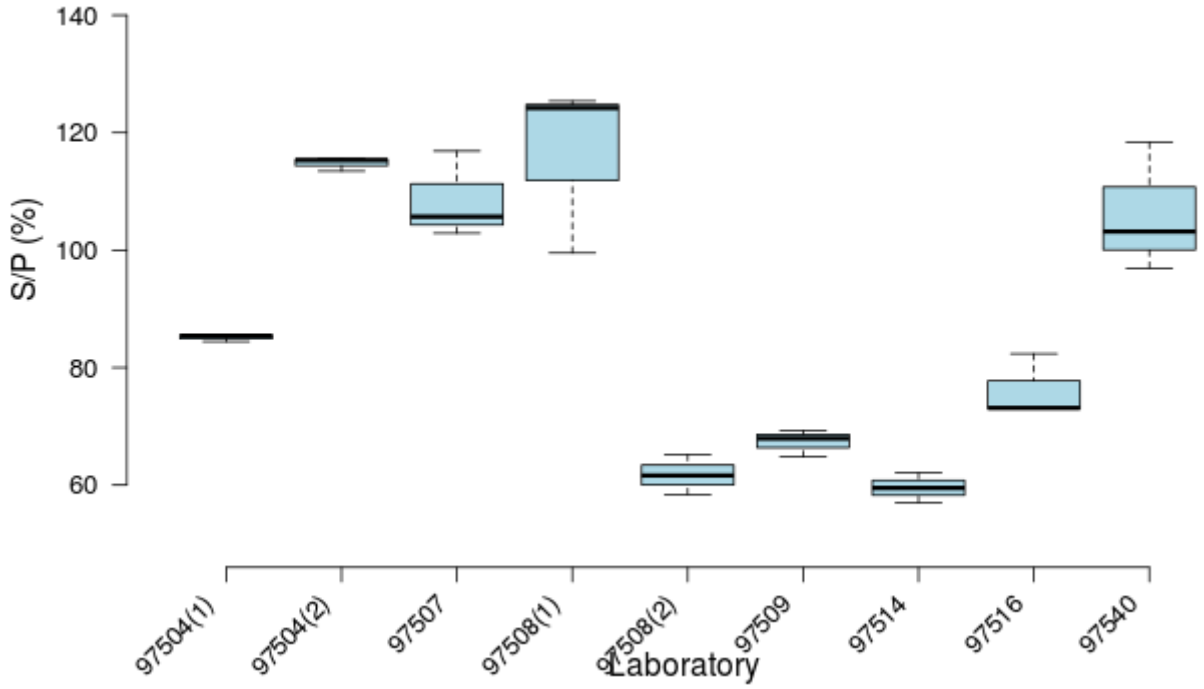
Lab number	97509	97514	97516	97540
Method (ELISA protocol/kit)	M_1	M_3	M_1	M_2
Pos control	0,941	0,904	1,369	1,27495
Neg control	0,052	0,099	0,048	0,04465
OD (1)	0,656	0,558	1,136	1,3138
OD (2)	0,668	0,578	1,014	1,5009
OD (3)	0,628	0,599	1,012	1,2373

OD = Optical Density; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2

Lab number	97504 (1)	97504 (2)	97507	97508 (1)	97508 (2)
Method (ELISA protocol/kit)	M_1	M_2	M_2	M_2	M_1
S/P % (1)	85,421	113,462	102,89	99,524	58,405
S/P % (2)	84,435	115,33	116,88	124,197	61,624
S/P % (3)	85,667	115,549	105,7	125,387	65,2
Mean	85,174	114,780	108,490	116,369	61,743
SD	0,652	1,147	7,401	14,601	3,399
CV (%)	0,765	0,999	6,821	12,547	5,505

Lab number	97509	97514	97516	97540
Method (ELISA protocol/kit)	M_1	M_3	M_1	M_2
S/P % (1)	67,942	57,019	82,362	103,158
S/P % (2)	69,291	59,503	73,126	118,365
S/P % (3)	64,792	62,112	72,975	96,94
Mean	67,342	59,545	76,154	106,154
SD	2,309	2,547	5,377	11,022
CV (%)	3,428	4,277	7,060	10,383

S/P = Sample-to-Positive ratio; SD = standard deviation; CV = coefficient of variation; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2



6.1.2 SEROLOGY (MILK)

Quantitative results for duplicate samples: PT2025PTBMIL-PM1

Lab number	97504 (1)	97504 (2)	97509	97511	97512
Method (ELISA protocol/kit)	M_1	M_2	M_1	M_1	M_1
Pos control	1,2615	1,876	1,173	1,358	2,213
Neg control	0,044	0,056	0,047	0,045	0,051
OD (1)	1,566	3,104	1,201	1,377	2,187
OD (2)	1,548	3,122	1,237	1,483	2,163

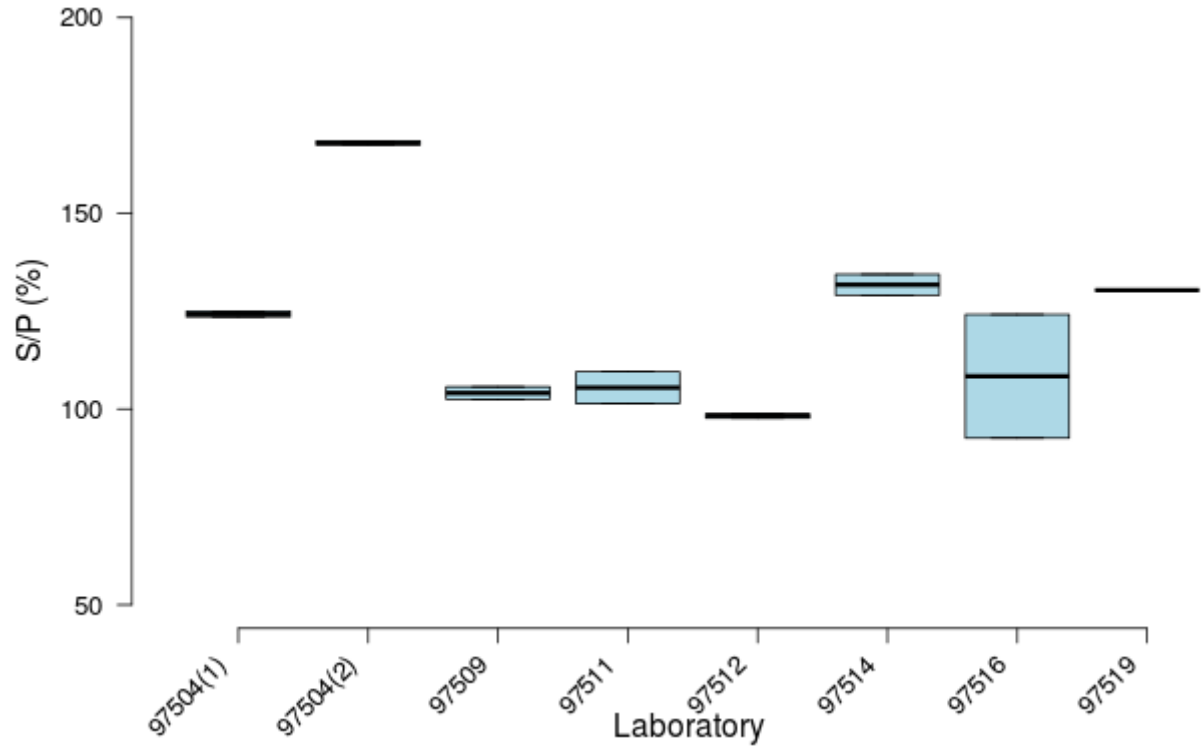
Lab number	97514	97516	97519
Method (ELISA protocol/kit)	M_3	M_1	M_2
Pos control	0,992	1,369	1,2365
Neg control	0,111	0,048	0,075
OD (1)	1,248	1,271	1,589
OD (2)	1,295	1,688	1,589

OD = Optical Density; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2

Lab number	97504 (1)	97504 (2)	97509	97511	97512
Method (ELISA protocol/kit)	M_1	M_2	M_1	M_1	M_1
S/P % (1)	125,01	167,473	102,487	101,418	98,797
S/P % (2)	123,532	168,462	105,684	109,508	97,687
Mean	124,271	167,968	104,086	105,463	98,242
SD	1,045	0,699	2,261	5,720	0,785
CV (%)	0,841	0,416	2,172	5,424	0,799

Lab number	97514	97516	97519
Method (ELISA protocol/kit)	M_3	M_1	M_2
S/P % (1)	129,058	92,581	130,349
S/P % (2)	134,393	124,148	130,349
Mean	131,726	108,365	130,349
SD	3,772	22,321	0
CV (%)	2,864	20,598	0

S/P = Sample-to-Positive ratio; SD = standard deviation; CV = coefficient of variation; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2



Quantitative results for duplicate samples: PT2025PTBMIL-PM2

Lab number	97504 (1)	97504 (2)	97509	97511	97512
Method (ELISA protocol/kit)	M_1	M_2	M_1	M_1	M_1
Pos control	1,2615	1,876	1,173	1,358	2,213
Neg control	0,044	0,056	0,047	0,045	0,051
OD (1)	0,838	1,798	0,74	0,653	1,116
OD (2)	0,833	1,485	0,759	0,645	1
OD (3)	0,764	1,476	0,77	0,691	1,217
OD (4)	0,948	1,714	0,698	0,625	0,916

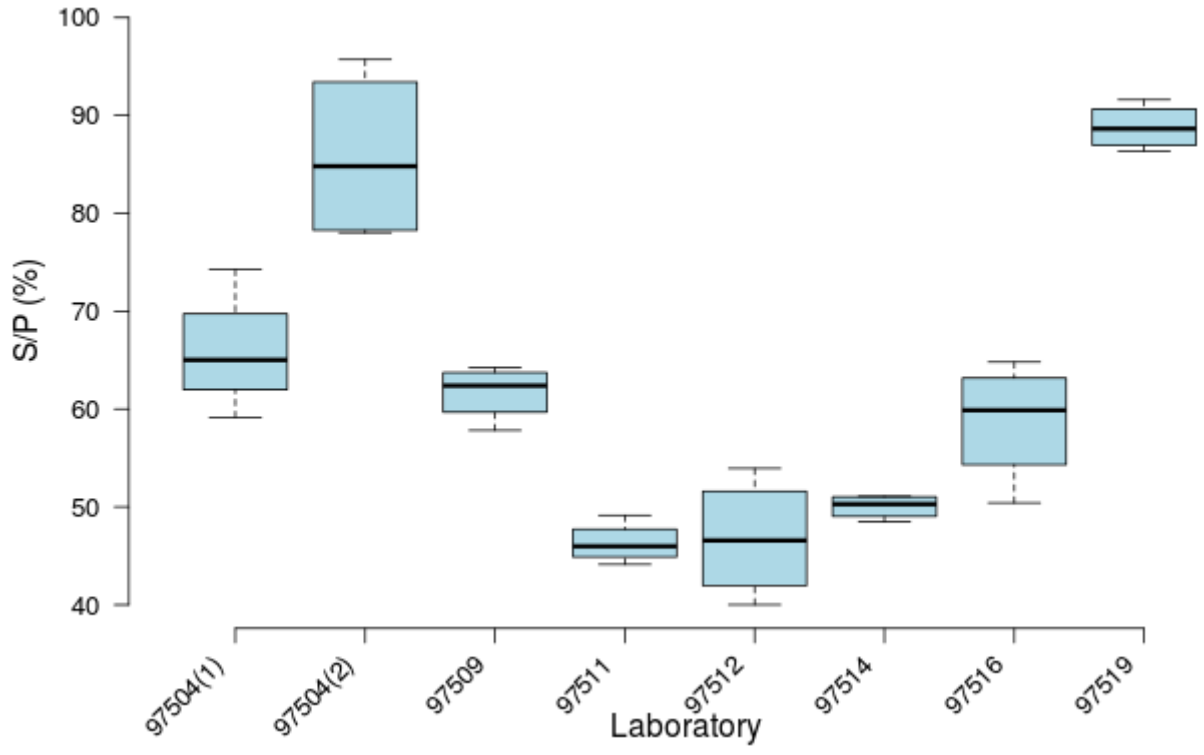
Lab number	97514	97516	97519
Method (ELISA protocol/kit)	M_3	M_1	M_2
Pos control	0,992	1,369	1,2365
Neg control	0,111	0,048	0,075
OD (1)	0,561	0,904	1,092
OD (2)	0,548	0,861	1,117
OD (3)	0,538	0,714	1,078
OD (4)	0,56	0,817	1,139

OD = Optical Density; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2

Lab number	97504 (1)	97504 (2)	97509	97511	97512
Method (ELISA protocol/kit)	M_1	M_2	M_1	M_1	M_1
S/P % (1)	65,216	95,714	61,545	46,312	49,26
S/P % (2)	64,805	78,516	63,233	45,646	43,895
S/P % (3)	59,138	78,022	64,21	49,148	53,932
S/P % (4)	74,251	91,099	57,815	44,123	40,009
Mean	65,853	85,838	61,701	46,307	46,774
SD	6,248	8,943	2,815	2,104	6,096
CV (%)	9,488	10,418	4,562	4,543	13,032

Lab number	97514	97516	97519
Method (ELISA protocol/kit)	M_3	M_1	M_2
S/P % (1)	51,078	64,799	87,559
S/P % (2)	49,603	61,544	89,712
S/P % (3)	48,468	50,416	86,354
S/P % (4)	50,965	58,213	91,606
Mean	50,029	58,743	88,808
SD	1,238	6,168	2,326
CV (%)	2,474	10,500	2,619

S/P = Sample-to-Positive ratio; SD = standard deviation; CV = coefficient of variation; M_1 = IDEXX - Paratuberculosis Screening Ab Test; M_2 = IDVet - ID Screen Paratuberculosis Indirect ELISA Kit; M_3 = Biosellal - BioLisa kit MAP Ab V2



6.2 Annex: Additional information

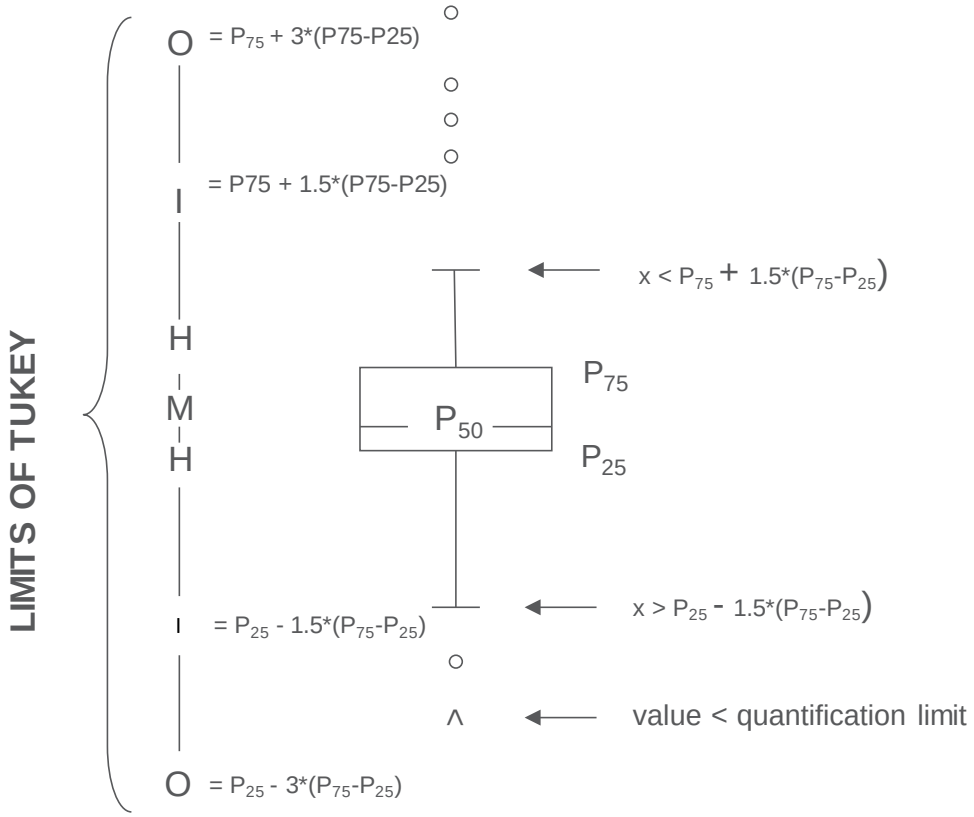
The **calendar** for Proficiency Testing in Veterinary diagnosis is available on our website:

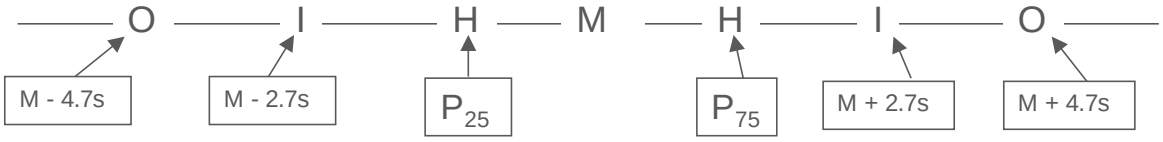
- NL: https://www.sciensano.be/nl/biblio/eke-kalender-2025
- FR: https://www.sciensano.be/fr/biblio/calendrier-eeq-2025
- EN: https://www.sciensano.be/en/biblio/eqa-calendar-2025

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 3 participants:

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





Corresponding limits in case of normal distribution

END