BIOLOGICAL HEALTH RISKS
QUALITY OF LABORATORIES

COMMITTEE OF EXPERTS

EXTERNAL QUALITY ASSESSMENT
IN VETERINARY DIAGNOSIS

DEFINITIVE GLOBAL ANNUAL REPORT

VETERINARY MEDECINE

2021

NATIONAL REFERENCE LABORATORIES

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All the reports are also available on our webpage:
https://www.wiv-isp.be/QML/activities/external_quality/rapports/_nl/rapports_annee.htm
https://www.wiv-isp.be/QML/activities/external_quality/rapports/_fr/rapports_annee.htm

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1. INTRODUCTION

1.1 Abbreviations

Table I: *List of abbreviations.*

Abbreviation	Full name
Ab	Antibody
Ag	Antigen
ASF	African Swine Fever
BSE	Bovine Spongiform Encephalopathy
BT	Bovine Tuberculosis
BTV	Blue Tongue Virus
BVD	Bovine Viral Diarrhea
CRD	Chronic Respiratory Disease
EDTA	Ethylenediamine tetraacetic acid
ELISA	Enzyme-linked immunoassay
FASFC	Federal Agency for the Safety of the Food Chain
IBR	Infectious Bovine Rhinotracheitis
IFNγ	Interferon gamma
N	Number of participants
ND	Not determined
NR	Number of results
NCR	Number of correct results
PT	Paratuberculosis
RBT	Rose Bengal Test
RT-qPCR	Quantitative Real-Time Polymerase Chain Reaction
SAW	Slow agglutination wright

1.2 The surveys

In 2021, 13 surveys were organized by Sciensano for the proficiency testing in the diagnosis of pathogens in veterinary medicine (Table II) following the ISO17043:2010 standard.

Table II. *Surveys organized in 2021.*

Survey	Date (week of)	Parameter
2021/1	15 March	ASF type II strain: virology (serum) and serology (serum)
2021/2	29 March	IBR: serology (milk)
2021/3	12 April	Brucellosis: serology (serum)
2021/4*	03 May	Capripox: virology (virus stock and tissue suspension) and serology (serum)
2021/5	10 May	BT: serology (serum) and gamma interferon
2021/6	24 May	BSE: brain (obex)
2021/7	31 May	Ovine scrapie: genotyping
2021/8	07 June	BVD: virology (ear notch) and serology (serum)
2021/9	20 September	PT: serology (serum)
2021/9	27 September	PT: serology (milk)
2021/10	04 October	BTV: serology (serum) and virology (blood)
2021/11	11 October	CRD: bacteriology (swab)
2021/12	18 October	Q-fever: bacteriology (organs and milk)

* = This survey is organized by the community reference laboratory, financed by the European Union and destined to the European reference laboratories. The results were not included in this report.

1.3 The participants

Table III. *Surveys organized in 2021.*

Survey	Parameter	Method	Matrix	FASFC	Other	Total
2021/1	ASF	RT-qPCR	Serum	4	3	7
		ELISA (Ab)	Serum	4	3	7
2021/2	IBR	ELISA gB (Ab)	Milk	4	0	4
		ELISA gE (Ab)	Milk	4	2	6
2021/3	Brucellosis	SAW-EDTA	Serum	3	2	5
		ELISA (Ab)	Serum	3	2	5
		RBT	Serum	3	2	5
2021/5	BT	ELISA (IFNγ)	Serum	4	0	4
		ELISA (Ab)	Serum	4	0	4
2021/6	BSE	ELISA (Ab)	Tissue	2	0	2
2021/7	Ovine scrapie	qPCR/ sequencing	EDTA-blood	2	0	2
2021/8	BVD	ELISA (Ag)	Ear notch	4	1	5
		RT-qPCR	Ear notch	4	4	8
		ELISA (Ab)	Serum	4	3	7
2021/9	PT (1)	ELISA (Ab)	Serum	5	2	7
2021/9	PT (2)	ELISA (Ab)	Milk	4	2	6
2021/10	BTV	ELISA (Ab)	Serum/ plasma	4	3	7
		RT-qPCR	EDTA-blood	4	3	7
2021/11	CRD	RT-qPCR	Swab	3	0	3
2021/12	Q-fever	RT-qPCR	Organs	3	3	6
		RT-qPCR	Milk	3	3	6

1.4 Timetable

Table IV. *Planning of the surveys organized in 2021.*

Survey	Parameter	Sending	Deadline results	Preliminary report	Global report
2021/1	ASF	15/03/'21	31/03/'21	12/04/'21	29/07/'21
2021/2	IBR	29/03/'21	12/04/'21	05/05/'21	09/08/'21
2021/3	Brucellosis	12/04/'21	30/04/'21	31/05/'21	30/08/'21
2021/4	Capripox	03/05/'21	14/06/'21	30/07/'21	30/09/'21
2021/5	BT	10/05/'21	31/05/'21	05/08/'21	29/10/'21
2021/6	BSE	24/05/'21	14/06/'21	16/08/'21	17/12/'21
2021/7	Ovine scrapie	31/05/'21	21/06/'21	16/08/'21	17/12/'21
2021/8	BVD	07/06/'21	30/06/'21	19/08/'21	10/01/'22
2021/9	PT (serum)	20/09/'21	20/10/'21	09/11/'21	18/01/'22
2021/9	PT (milk)	27/09/'21	20/10/'21	09/11/'21	18/01/'22
2021/10	BTV	04/10/'21	26/10/'21	06/12/'21	10/01/'22
2021/11	CRD	11/10/'21	05/11/'21	22/11/'21	21/01/'22
2021/12	Q-Fever	18/10/'21	18/11/'21	06/01/'22	18/02/'22

The preliminary- and global report were placed on our webpage:
https://www.wiv-isp.be/QML/activities/PT%20VET/nl/originaux/rapports_annee.htm
https://www.wiv-isp.be/QML/activities/PT%20VET/fr/originaux/rapports_annee.htm

1.5 The criteria

Table V: *The minimal required criteria for the qualification of a laboratory participating to the proficiency tests in veterinary medicine organized by Sciensano.*

Test	Criteria for qualification
Tests with only five samples	Qualitative result (positive, negative, doubtful): 100% of agreement between the results of the participating laboratory and the qualitative value (status) of the samples.
Other	Qualitative result (positive, negative, doubtful; genotype): ≥ 90% of agreement between the results of the participating laboratory and the qualitative value (status) of the samples.

2. RESULTS

1.6 Bacteriology

The samples for the surveys of this section were produced by the Bacteriology laboratory of the Directorate Infectious Diseases in Animals of Sciensano.

1.6.1   BRUCELLOSIS

1.6.1.1   Serology ELISA

The panel consisted of 13 positive and 7 negative samples. In total, 4 laboratories submitted results.

Sample ID	Target value	Repetition	Submitted results
PS1	POS	5	20 POS results
PS2	POS	4	16 POS results
PS3	POS	4	16 POS results
NS1	NEG	3	12 NEG results
NS2	NEG	2	8 NEG results
NS3	NEG	2	8 NEG results

Used methods	N
Brucellosis Antibody Test Kit IDEXX	1
Synbiotics/Zoetis - SERELISA Brucella OCB Ab Mono Indirect	2
Home made	1

Conclusion: On the 80 submitted results, 100% were correct independently of the used method.

1.6.1.2   Serology RBT

The panel consisted of 20 serum samples: 13 positive and 7 negative samples. There were 5 participants in total.

Sample ID	Target value	Repetition	Submitted results
PS1	POS	5	25 POS results
PS2	POS	4	20 POS results
PS3	POS	4	20 POS results
NS1	NEG	3	15 NEG results
NS2	NEG	2	10 NEG results
NS3	NEG	2	10 NEG results

Used methods	N
IDEXX Rose Bengal antigen kit	5

Conclusion: 100% of the submitted results were correct.

1.6.1.3 Serology SAW

The panel consisted of 20 serum samples: 13 positive and 7 negative samples. There were 4 participants in total.

Sample ID	Target value	Repetition	Submitted results
PS1	POS	5	20 POS results
PS2	POS	4	16 POS results
PS3	POS	4	16 POS results
NS1	NEG	3	12 NEG results
NS2	NEG	2	8 NEG results
NS3	NEG	2	8 NEG results

Used methods	N
Zoetis (Synbiotics) Brucella antigen	3
Idexx Brucella antigen	1

Conclusion: 100% of the submitted results were correct.

1.6.2 BOVINE TUBERCULOSIS

1.6.2.1 Gamma interferon

The panel consisted of 20 serum samples: 12 positive and 8 negative. In total, 4 laboratories submitted results.

Sample ID	Target value	Repetition	Submitted results
IP1	POS	2	8 POS results
IP2	POS	3	12 POS results
IP3	POS	5	20 POS results
IP4	POS	2	8 POS results
IN1	NEG	4	16 NEG results
IN2	NEG	4	16 NEG results

Used methods	N
IDVET-IDSCREEN Ruminant IFN-g	4

Conclusion: On the 80 encoded results, 100% were correct.

1.6.2.2 Serology

The panel consisted of 20 serum samples: 10 positive and 10 negative samples. In total, 4 laboratories submitted results.

Sample ID	Target value	Repetition	Submitted results
PS1	POS	5	20 POS results
PS2	POS	3	12 POS results
PS3	POS	2	8 POS results
NS1	NEG	5	20 NEG results
NS2	NEG	5	20 NEG results

Used methods	N
IDEXX M. tuberculosis Ab test	4

Conclusion: All the participants submitted correct results and used the same method.

1.6.3 PARATUBERCULOSIS

1.6.3.1 Serology serum

The panel consisted of 20 serum samples (8 positive and 12 negative). 5 laboratories submitted one dataset and 2 laboratories encoded 2 datasets (180 results).

Sample ID	Target value	Repetition	Submitted results
PS1	POS	5	44 POS results 1 false NEG result*
PS2	POS	2	18 POS results
PS3	POS	5	45 POS results
NS1	NEG	5	45 NEG results
NS2	NEG	3	27 NEG results

Used methods	N
ID.VET - ID Screen Paratuberculosis Indirect Screening Test	5
IDEXX Paratuberculosis Screening Mycobacterium paratuberculosis Antibody Test Kit	4

Conclusion: 99.4% of the encoded results were correct. One false negative result was submitted for the PS1 sample. This serum was retested by the NRL and confirmed as negative therefore the laboratory received a wrong sample (a negative in place of a positive)

1.6.3.2 Serology milk

A panel consisted of 20 samples (7 negative and 13 positive). In total, 6 laboratories encoded one dataset (120 results).

Sample ID	Target value	Repetition	Submitted results
PM1	POS	4	24 POS results
PM2	POS	5	30 POS results
PM3	POS	4	24 POS results
NM1	NEG	4	24 NEG results
NM2	NEG	3	18 NEG results

Used methods	N
ID.VET - ID Screen Paratuberculosis Indirect Screening Test	1
IDEXX Paratuberculosis Screening Mycobacterium paratuberculosis Antibody Test Kit	5

Conclusion: All the participant submitted 100% of correct results with both used method.

1.6.4 CHRONIC RESPIRATORY DISEASE (CRD)

The panel consisted of 3 different samples, but samples PSW1 and NSW1 were repeated twice. Therefore, the panel consisted of 5 samples: 3 positive and 2 negative. In total, 3 laboratories submitted their results (15 results)

Sample ID	Target value	Repetition	Submitted results
PSW1	POS	2	6 POS results
PSW2	POS	1	3 POS results
NSW1	NEG	2	6 NEG results

Used methods	N
Thermofisher - VetMAX Avian M. gallisepticum & M. synoviae Kit	3

Conclusion: All the submitted results were correct.

1.6.5 Q-FEVER

1.6.5.1 Serology milk

The panel consisted of 5 samples (4 positive and 1 negative). In total, 6 participants submitted their results (30 results)

Sample ID	Target value	Repetition	Submitted results
QFMP1	POS	2	12 POS results
QFMP2	POS	2	12 POS results
QFMN1	NEG	1	6 NEG results

Used methods	N
RT-qPCR home made	2
VetMAX™ C. burnetii Absolute Quant Kit	2
ID.VET - ID GENE® Q FEVER TRIPLEX	1
VetMAX™ C. burnetii Feces Kit	1

Conclusion: All submitted results were correct.

1.6.5.2 Serology organs

A panel consisted of 5 organ samples. In total, 6 laboratories submitted one dataset (30 results). Matrices: OP-01, OP-02, OP-03, ON-01 were based on spleen homogenate, ON-02 was lymphnode homogenate. Positive samples were spiked with consecutive 1/10 dilution of NMphII strain grown in Vero cells. All samples were inactivated and verified before shipping. The distributed panel was retested as of internal SOP to guarantee for sample stability.

Sample ID	Target value	Repetition	Submitted results
OP1	POS	1	6 POS results
OP2	POS	1	5 POS results 1 false NEG result
OP3	POS	1	3 POS results 3 false NEG results
ON1	NEG	1	6 NEG results
ON2	NEG	1	6 NEG results

Used methods	N
RT-qPCR home made	2
VetMAX™ C. burnetii Absolute Quant Kit	2
ID.VET - ID GENE® Q FEVER TRIPLEX	1
VetMAX™ C. burnetii Feces Kit	1

Conclusion: Out of the 30 results, 26/30 (86.7%) were correct.

1.7 Virology

The samples of this section were produced by the Enzootic, vector-borne and bee diseases laboratory or by the Exotic viruses and particular diseases laboratory (BT) of the directorate infectious diseases in animals of Sciensano.

1.7.1 AFRICAN SWINE FEVER (ASF)

1.7.1.1 Serology

The panel consisted of 10 serum samples, 6 positive and 4 negative samples. In total, 7 laboratories submitted results. 5 laboratories submitted 1 dataset and 2 laboratories 2 datasets. Therefore, 9 datasets were submitted.

Sample ID	Origin	Background	Target value	Repetition	Submitted results
PT2021ASF SERPS1	Porcine	18d post infection with ASF Belgium/18	POS	2	18 POS results
PT2021ASF SERPS2	Porcine	18d post infection with ASF Belgium/18	POS	2	18 POS results
PT2021ASF SERPS3	Porcine	18d post infection with ASF Belgium/18	POS	2	18 POS results
PT2021ASF SERNS1	Porcine	Naive	NEG	2	18 NEG results
PT2021ASF SERNS2	Porcine	Naive	NEG	1	9 NEG results
PT2021ASF SERNS3	Porcine	Naive	NEG	1	9 NEG results

Used methods	N
ID Screen African Swine Fever Competition	5
INgezym PPA compac	1
ID Screen African Swine Fever Indirect	3

Conclusion: On the 90 submitted results, 100% were correct.

1.7.1.2 Virology

The panel consisted of 10 serum samples, 8 positive and 2 negative samples. In total, 6 laboratories submitted one dataset and 1 laboratory encoded 2 datasets, giving 8 encoded datasets.

Sample ID	Origin	Background	Target value	Repetition	Submitted results
PS1	Porcine	Pig infected with ASF Belgium/18 strains and euthanized at 8 dpi (with clinical sign)	POS	2	16 POS results
PS2	Porcine	PS1 diluted 1/10	POS	1	16 POS results
PS3	Porcine	PS1 diluted 1/100	POS	1	8 POS results
PS4	Porcine	PS1 diluted 1/500	POS	1	8 POS results
PS5	Porcine	PS1 diluted 1/1000	POS/NEG/DOUBT	1	8 POS results
PS6	Porcine	18d post infection with ASF Belgium/18 (survivor)	POS	2	8 POS results
NS1	Porcine	Naive	NEG	2	16 NEG results

Used methods	N
Bio-T kit® ASFV	1
ID Gene African Swine Fever Duplex	4
Home made	3

Conclusion: Globally, on 80 encoded results, all (100%) were correct. Sample PT2021ASFVIRPS6 was considered as positive by all the participants.

1.7.2 IBR

1.7.2.1 gB serology

The panel consisted of 5 positive and 5 negative samples. In total, 4 laboratories submitted results giving 4 datasets (40 results).

Sample ID	Background	Target value	Repetition	Submitted results
PT2021IBRgBSERPM1	I2	POS	1	4 POS results
PT2021IBRgBSERPM2	I2	POS	1	4 POS results
PT2021IBRgBSERPM3	I2	POS	1	4 POS results
PT2021IBRgBSERPM4	I2	POS	1	4 POS results
PT2021IBRgBSERPM5	I2d	POS	1	4 POS results
PT2021IBRgBSERNM1	I4	NEG	1	4 NEG results
PT2021IBRgBSERNM2	I4	NEG	1	4 NEG results
PT2021IBRgBSERNM3	I4	NEG	1	4 NEG results
PT2021IBRgBSERNM4	I4	NEG	1	4 NEG results
PT2021IBRgBSERNM5	I4	NEG	1	4 NEG results

Used methods	N
ID.VET - ID SCREEN® IBR MILK INDIRECT	1
Indical (Qiagen) - Cattletype BHV1 gB Ab milk	3

Conclusion: Globally, on 40 encoded results, 100% were correct.

1.7.2.2 gE serology

The panel consisted of 10 samples (5 positive and 5 negative). In total, 6 laboratories submitted results (in total 60 results).

Sample ID	Background	Target value	Repetition	Submitted results
PT2021IBRgESERPM1	I2	POS	1	6 POS results
PT2021IBRgESERPM2	I2	POS	1	6 POS results
PT2021IBRgESERPM3	I2	POS	1	6 POS results
PT2021IBRgESERPM4	I2	POS	1	5 POS results 1 false NEG result
PT2021IBRgESERPM5	I2	POS	1	6 POS results
PT2021IBRgESERNM1	I3	NEG	1	6 NEG results
PT2021IBRgESERNM2	I3	NEG	1	6 NEG results
PT2021IBRgESERNM3	I3	NEG	1	6 NEG results
PT2021IBRgESERNM4	I3	NEG	1	6 NEG results
PT2021IBRgESERNM5	I3	NEG	1	6 NEG results

Used methods	N
IN3 Diagnostic - Eradikit BoHV1 gE	6

Conclusion: On the 60 encoded results, 98.3% were correct

1.7.3 BVD

1.7.3.1 Serology

The panel consisted of 9 samples: 2 negative, 2 doubtful and 5 positive samples. In total, 6 laboratories submitted results. 5 laboratories submitted one dataset and 1 laboratory 2 datasets (in total= 7 datasets).

Sample ID	Origin	Background	Target value	Repetition	Submitted results
PS1	Bovine	Seropositive	POS	1	7 POS results
PS2	Bovine	Seropositive	POS	1	7 POS results
PS3	Bovine	Seropositive	POS	1	6 POS results 1 ND
PS4	Bovine	Dilution of positive serum to target limit of positivity with BioX assay	POS (IDVET), POS/NI/NEG (BioX assay)	1	6 POS results 1 ND
PS5	Bovine	Dilution of positive serum to target limit of positivity with IDvet (ID-Screen BVD p80)	POS (IDVET), POS/NI/NEG (BioX assay)	1	7 POS results
PS6	Bovine	Seropositive	POS	1	7 POS results
PS7	Bovine	Seropositive	POS	1	7 POS results
NS1	Bovine	Naive	NEG	1	7 NEG results
NS3	Bovine	Naive	NEG	1	7 NEG results

Used methods	N
ID.VET: Idscreen BVD p80 antibody competition	3
Bio-X Diagnostics: Monoscreen Ab ELISA BVD	3
Bio-X Diagnostics: Other	1

Conclusion: Two laboratories were unable to analyse one sample due to fact that the sample was no longer liquid, resulting in a crystallized mass. Globally, on 63 encoded results, 61/63 (96.8%) were correct.

1.7.3.2 Virology ear notch (ELISA)

The panel consisted of 10 tissue samples: 5 positive and 5 negative samples. In total, 5 laboratories submitted one dataset of results (50 results).

Sample ID	Target value	Background	Repetition	Submitted results
ELISAP1	POS	IPI	1	5 POS results
ELISAP2	POS	IPI	1	5 POS results
ELISAP3	POS	IPI	1	5 POS results
ELISAP4	POS	IPI	1	5 POS results
ELISAN1	NEG	Naive	2	10 NEG results
ELISAN2	NEG	Naive	1	5 NEG results
ELISAN3	NEG	Naive	1	5 NEG results
ELISAN4	NEG	Naive	1	5 NEG results

Used methods	N
IDEXX BVDV Ag/Serum Plus Test kit	5

Conclusion: Globally, on 50 submitted results 100% were correct.

1.7.3.3 Virology ear notch (PCR)

The panel consisted of 10 tissues: 5 positive and 5 negative samples. In total, 8 laboratories submitted one dataset of results (80 results).

Sample ID	Target value	Background	Repetition	Submitted results
PCRP1	POS	IPI	1	8 POS results
PCRP2	POS	IPI	1	8 POS results
PCRP3	POS	IPI	1	8 POS results
PCRP4	POS	IPI	1	8 POS results
PCRN1	NEG	Naive	2	16 NEG results
PCRN2	NEG	Naive	1	8 NEG results
PCRN3	NEG	Naive	1	8 NEG results
PCRN4	NEG	Naive	1	8 NEG results

Used methods	N
Home made	1
Thermofisher: LSIVETMAX BVD4ALL	3
Indical (Qiagen): BVD RT-PCR kit	1
BioX-Adiagene: Adiavet BVD RealTime	1
IDVET: ID GENE BVD/BD TRIPLEX	1
Other	1

Conclusion: All submitted results were correct.

1.7.4 BLUE TONGUE (BTV)

1.7.4.1 Serology (ELISA)

The panel consisted of 20 serum samples tissues: 14 positive and 6 negative samples. In total, 7 laboratories submitted results.

Sample ID	Target value	Origin	Background	Repetition	Submitted results
PS1	POS	Ovine	Vaccinated	3	21 POS results
PS2	POS	Ovine	Vaccinated	2	14 POS results
PS3	POS	Bovine	Infected	3	21 POS results
PS4	POS	Bovine	Vaccinated	3	21 POS results
PS5	POS	Bovine	Vaccinated	3	21 POS results
NS1	NEG	Bovine	Uninfected/unvaccinated	3	21 NEG results
NS2	NEG	Ovine	Uninfected/unvaccinated	3	21 NEG results

Used methods	N
ID.VET - ID SCREEN® blue tongue competition	7

Conclusion: Globally, on submitted results, 100% were correct.

1.7.4.2 Virology (PCR)

The panel consisted of 20 samples: 15 positive and 5 negative samples. In total, 8 laboratories submitted results (160 results).

Sample ID	Target value	Origin	Background	Repetition	Submitted results
PB1	POS	Bovine	Uninfected/blood spiked	3	24 POS results
PB2	POS	Bovine	Uninfected/blood spiked	2	16 POS results
PB3	POS	Bovine	Uninfected/blood spiked	2	16 POS results
PB4	POS	Bovine	Uninfected/blood spiked	3	24 POS results
PB6	POS	Bovine	Uninfected/blood spiked	3	24 POS results
PB7	POS	Bovine	Uninfected/blood spiked	2	14 POS results 2 false NEG results
NB1	NEG	Bovine	Uninfected	3	24 NEG results
NB2	NEG	Bovine	Uninfected	2	16 NEG results

Used methods	N
Home Made RT-qPCR	2
ADIAGENE - ADIAVET BTV real time	4
Thermofisher - Vetmax Bluetongue Virus NS3-all genotype	1
ID.VET - ID GENE® BLUETONGUE DUPLEX	1

Conclusion: 98.75% of the encoded results were correct. 2 false negative results were encoded by the same laboratory for the sample PB7 using a homemade RT-qPCR method.

1.8 Prion diseases

1.8.1 BSE

A panel consisted of 5 samples, 2 positive and 3 negative samples (homogenate of bovine obex).

Sample ID	Target value	Repetition	Submitted results
PT2021BSEP1	POS (weak)	1	2 POS results
PT2021BSEP2	POS (strong)	1	2 POS results
PT2021BSEN1	NEG	3	6 NEG results

Used methods	N
Herdcheck BSE-Scrapie Ag-test (IDEXX)	1
TeSeE Kit, 768 TEST Bio-Rad	1

Conclusion: All the participants gave the correct results independently of the used kit.

1.8.2 SCRAPIE

A panel consisted of 10 samples (sheep blood).

Lab ID	Expected Genotype (4 codons)	Submitted results
18038	ALRQ/ALRH	2x ALRQ/ALRH
18068	ALRQ/ALRQ	2x ALRQ/ALRQ
18215	ALRH/VLRQ	2x ALRH/VLRQ
18243	ALRR/VLRQ	2x ALRR/VLRQ
18111	ALRQ/AFRQ	2x ALRQ/AFRQ
18330	ALRH/ALHQ	2x ALRH/ALHQ
18379	ALRR/ALRQ	2x ALRR/ALRQ
18400	ALRQ/ALHQ	2x ALRQ/ALHQ
18405	ALRR/ALRR	2x ALRR/ALRR
18049	ALRR/ALHQ	2x ALRR/ALHQ

Methods lab 1	Methods lab 2
DNA extraction	DNA extraction
Classical PCR + DGGE	ARMS-PCR (codons 136, 154, 171)
rtPCR, Sequencing	+ RTq-PCR (codon 141)

Conclusion: Both participants gave the correct results independently of the used method.

3. GENERAL EVALUATION

Table VI. Summary of the results.

Survey	Pathogen/ Disease	Matrix	Test	N	NR	NCR	%
2021-1	ASF	Serum	ELISA Ab	7	90	90	100.0
2021-1	ASF	Serum	RT-qPCR	7	80	80	100.0
2021-2	IBR	Serum	ELISA gB	4	40	40	100.0
2021-2	IBR	Serum	ELISA gE	6	60	59	98.3
2021-8	BVDV	Serum	ELISA Ab	6	63	61	96.8
2021-8	BVDV	Blood	RT-qPCR	4	40	40	100.0
2021-8	BVDV	Ear notch	RT-qPCR	8	80	80	100.0
2021-6	BSE	Tissue	ELISA Ag	2	10	10	100.0
2021-7	Scrapie	Blood	genotyping	2	20	20	100.0
2021-10	BTV	Serum	ELISA Ab	7	140	140	100.0
2021-10	BTV	Serum	RT-qPCR	8	160	158	98.8
2021-3	Brucella	Serum	ELISA Ab	4	80	80	100.0
2021-3	Brucella	Serum	RBT	5	100	100	100.0
2021-3	Brucella	Serum	SAW	4	40	40	100.0
2021-5	BT	Serum	ELISA IFNγ	4	40	40	100.0
2021-5	BT	Serum	ELISA Ab	4	40	40	100.0
2021-9	PT	Serum	ELISA Ab	7	180	179	99.4
2021-9	PT	Milk	ELISA Ab	6	120	120	100.0
2021-11	CRD	Swab	RT-qPCR	3	15	15	100.0
2021-12	Q-fever	Milk	RT-qPCR	6	30	30	100.0
2021-12	Q-fever	Organs	RT-qPCR	6	30	26	86.7
TOTAL					**1458**	**1448**	**99.3**

The encountered problems were summarized in Table VII. The cause of the problem can be diverse and can sometimes be identified.

Table VII. Analysis of the wrong results.

Survey			Error	Comment
IBR	ELISA gE (Ab)	Milk	1 false NEG result	No obvious explanation
BVD	ELISA (Ab)	Serum	2 ND results	Quality of the samples was not optimal because the sample was clotted in its tube
PT	ELISA Ab	Serum	1 false NEG result	No obvious explanation
BTV	RT-qPCR	EDTA-blood	2 false NEG results	No obvious explanation
Q-Fever	RT-qPCR	Organs	4 false NEG results	No obvious explanation

END