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Interlaboratory Veterinary Proficiency Testing

2019 Annual Report

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SECTION 1: Introduction

Introduction

Confidentiality

Methodology

1. INTRODUCTION

In 2019, the Australian National Quality Assurance Program (ANQAP) facilitated inter-laboratory proficiency testing in 31 government and private veterinary laboratories from several countries including Australia, New Zealand, the United States of America and New Caledonia. The testing cycle for 2019 evaluated 7 testing rounds, comprised of 38 different veterinary tests.

Australian National Reference Laboratories provide proficiency testing for *Dichelobacter nodosus* and *Mycobacterium paratuberculosis*. Results for each of these proficiency tests are included as separate sections within the ANQAP report.

2. CONFIDENTIALITY

In order to protect the identity of participating laboratories, each laboratory is allocated a Confidential Number. Each laboratory knows only its own Confidential Number and not the Confidential Number of any other laboratory. This number is changed annually.

A special round for the BTV ELISA is run as part of the Laboratories for Emergency Animal Disease Diagnosis and Response (LEADDR) program and the participating laboratories are assigned an alphabetic code for these tests. As LEADDR does not keep the identity of laboratories confidential, the alphabetic code cannot be converted to the Confidential Number without a potential breach of confidentiality.

3. METHODOLOGY

3.1 Samples

ANQAP distributes freeze dried samples (most commonly serum) to participating laboratories. Each sample panel is, where possible, selected to produce a range of results from negative through to high positive. Typically, each sample panel includes six samples and each participant will receive a sample panel of their own to test.

Specimens for *Dichelobacter nodosus* and *Mycobacterium paratuberculosis* evaluation are prepared by the Australian National Reference Laboratories for these diseases.

3.2 Analysis

Definition of a satisfactory result

A consensus median (CM) result is calculated for each of the samples and laboratory results are classified on the variation demonstrated between the sample result and the consensus result. For tests which generate a titre, an acceptable variation range (AVR) is established. The AVR is generally taken as one dilution factor either side of the consensus result. Results which are the correct interpretation and within the AVR are classified as **Satisfactory**.

Example:

If the CM for Q Fever CFT is 3/32, the AVR will be between 3/16 and 3/64.

A result that falls between 3/16 and 3/64 will be classified as **Satisfactory (✓)**.

Results outside the AVR demonstrate variation from the expected result and will generally result in the laboratory being asked to retest.

The retest result will be classified as:

- **Retest Result Satisfactory (R✓)** if the result falls within the AVR
- **Retest Result Demonstrating Minor Variation (Rm)** if the result falls outside the AVR but are within one dilution factor of the upper or lower AVR limit
- **Retest Result Unacceptable (RU)** if the result is more than two dilution factors outside the CM or the result differs in positive or negative interpretation from the CM interpretation

Example:

Using the CM and AVR given in the example above, a result outside 3/16 to 3/64 will require retesting. This retest result will then be classified.

A retest result of 1/128 is above the AVR but within a dilution factor of the upper AVR limit (between 3/64 and 3/128) and would be classified as Retest Result Demonstrating Minor Variation (**Rm**). Any result greater than 3/128 or lower than 3/8 would be classified as Retest Result Unacceptable (**RU**).

ANQAP recommend that laboratories given a classification of **Unacceptable** undertake corrective action within the laboratory to identify and rectify problems with the test. On request, ANQAP may supply a new panel of samples to the laboratory to assist in the corrective action process.

Statistical Analysis of Results

A number of tests within ANQAP are suitable for statistical analysis of the results. For these tests a split-level analysis is undertaken using two test sera from the panel. The outcome of these statistical analyses are sent to participating laboratories. The statistics are not included in this report.

Reporting

ANQAP will issue each individual laboratory a personalised report once they have submitted their results. The report will identify results that are within acceptable parameters and indicate where sample retests will be required.

SECTION 2: Agar Gel Immunodiffusion (AGID)

Avian influenza (AIV) AGID

Bluetongue (BT) AGID

Bovine viral diarrhoea virus (BVDV) AGID

Epizootic haemorrhagic disease (EHD) AGID

Equine infectious anaemia (EIA) AGID

Johne's disease – ovine (JD) AGID

Report Date	05/08/2019
Report Status	Final Retest Report
Test Name	AIV AGID
Test Number (Code)	19/16
Test Month and Year	April 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Neg	Neg	Pos 3+	Pos >3+	Pos 3+	Pos >3+	✓
	Neg	Neg	Pos 3+	Pos 3+	Pos 3+	Pos 3+	✓
	Neg	Pos	Pos	Pos	Pos	Pos	Samples 1, 3-6 - ✓ - Laboratory classified on interpretation only Sample 2 - R
Consensus Interpretation	Negative	Negative	Positive 3+	Positive 3+ - >3+	Positive 3+	Positive 3+ - >3+	
Acceptable Variation Range	N/A	N/A	Positive 2+ - >3+	Positive 2+ - >3+	Positive 2+ - >3+	Positive 2+ - >3+	
Retest Results							Classification
	-	Neg	-	-	-	-	R ✓

Note: One laboratory was classified on interpretation only.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 2.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	13/06/2019
Report Status	Final Report
Test Name	BT AGID
Test Number (Code)	19/12
Test Month and Year	April 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Pos 2+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 1+	Pos 1+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 1+	Pos 1+	Neg	Neg	✓
	Pos 3+	Pos 1+	Pos 1+	Pos 1+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 2+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
Consensus Interpretation	Positive 2+	Positive 1+	Positive 1+	Positive 1+ - 2+	Negative	Negative	
Acceptable Variation Range	Positive 1+ - 3+	Positive 1+ - 2+	Positive 1+ - 2+	Positive 1+ - 3+	N/A	N/A	

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	14/05/2019
Report Status	Final Retest Report
Test Name	BVDV AGID
Test Number (Code)	19/04
Test Month and Year	February 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Pos 1+	Pos 2+	Pos 2+	Pos 2+	Neg	Neg	✓
	Pos 1+	Pos 2+	Pos 2+	Pos 2+	Neg	Neg	✓
	Pos 1+	Pos 2+	Pos 2+	Pos 3+	Neg	Neg	✓
	Pos 1+	Pos 2+	Pos 2+	Pos 2+	Neg	Neg	✓
	Neg	Pos 2+	Pos 1+	Pos 2+	Neg	Neg	Sample 1 - R Samples 2-6 - ✓
	Pos 1+	Pos 3+	Pos 3+	Pos 3+	Neg	Neg	✓
Consensus Interpretation	Positive 1+	Positive 2+	Positive 2+	Positive 2+	Negative	Negative	
Acceptable Variation Range	Positive 1+ - 2+	Positive 1+ - 3+	Positive 1+ - 3+	Positive 1+ - 3+	N/A	N/A	
Retest Results							Classification
	Pos 1+	-	-	-	-	-	R ✓

One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 1.
All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	08/05/2019
Report Status	Final Report
Test Name	EHD AGID
Test Number (Code)	19/08
Test Month and Year	March 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Pos 2+	Pos 2+	Neg	Neg	Pos 2+	Pos 2+	✓
							See comment
	Pos 2+	Pos 3+	Neg	Neg	Pos 3+	Pos 3+	✓
	Pos	Pos	Neg	Neg	Pos	Pos	✓ - Laboratory classified on interpretation only
	Pos 3+	Pos 3+	Neg	Neg	Pos 3+	Pos 3+	✓
	Pos 2+	Pos 2+	Neg	Neg	Pos 2+	Pos 2+	✓
	Pos 3+	Pos 3+	Neg	Neg	Pos 3+	Pos >3+	✓
Consensus Interpretation	Positive 2+	Positive +3	Negative	Negative	Positive 3+	Positive 3+	
Acceptable Variation Range	Positive 1+ - 3+	Positive 2+ - >3+	N/A	N/A	Positive 2+ - >3+	Positive 2+ - >3+	

Comment: Laboratory not classified for this test.
One laboratory was classified on interpretation only.
All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	28/03/2019
Report Status	Final Report
Test Name	EIA AGID
Test Number (Code)	19/01
Test Month and Year	February 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Pos 2+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 2+	Pos 2+	Neg	Neg	✓
	Pos 3+	Pos 2+	Pos 1+	Pos 3+	Neg	Neg	✓
	Pos 3+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 2+	Pos 2+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 2+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
	Pos 2+	Pos 1+	Pos 1+	Pos 2+	Neg	Neg	✓
Consensus Interpretation	Positive 2+	Positive 1+	Positive 1+	Positive 2+	Negative	Negative	
Acceptable Variation Range	Positive 1+ - 3+	Positive 1+ - 2+	Positive 1+ - 2+	Positive 1+ - 3+	N/A	N/A	

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	08/05/2019
Report Status	Final Report
Test Name	JD Ovine AGID
Test Number (Code)	19/09
Test Month and Year	March 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Neg	Neg	Pos 1+	Pos 1+	Pos 1+	Pos 1+	✓
	Pos 3+	Neg	Pos 2+	Pos 1+	Pos 1+	Neg	Samples 1 & 6 - U Samples 2-5 - ✓
	Neg	Neg	Neg	Neg	Neg	Neg	Samples 3-6 - U Samples 1 & 2 - ✓
	Neg	Neg	Pos 2+	Pos 1+	Pos 2+	Pos 2+	✓
	Neg	Neg	Pos 1+	Pos 1+	Pos 1+	Pos 1+	✓
	Neg	Neg	Pos	Pos	Pos	Pos	✓ - Laboratory classified on interpretation only
Consensus Interpretation	Negative	Negative	Positive 1+ - 2+	Positive 1+	Positive 1+	Positive 1+	
Acceptable Variation Range	N/A	N/A	Positive 1+ - 3+	Positive 1+ - 2+	Positive 1+ - 2+	Positive 1+ - 2+	

Note: Due to low serum stock availability, retests or replacement samples were not available for this test round.
 One laboratory was classified as Result Unacceptable (U) for Samples 1 and 6.
 One laboratory was classified as Result Unacceptable (U) for Samples 3, 4, 5 and 6.
 One laboratory was classified on interpretation only.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 3: Complement Fixation Test

Brucella abortus (BB) CFT

Brucella ovis (OB) CFT

Johne's disease (JD) CFT

Q Fever (QF) CFT

Report Date	17/01/2020
Report Status	Final Retest Report
Test Name	B. abortus CFT
Test Number (Code)	19/29
Test Month and Year	July 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	1/32	Neg	2/64	Neg	2/8	2/8	✓
	2/32	Neg	4/32	Neg	2/16	2/16	✓
	Neg <4	Neg <4	2/64	Neg <4	2/32	3/32	Samples 1 & 6 - R Samples 2-5 - ✓
	4/16	0/4 Neg	4/32	0/4 Neg	4/8	4/8	✓
	3/64	0/2 Neg	2/64	0/2 Neg	2/16	2/16	Sample 1 - R Samples 2-6 - ✓
	3/16	Neg <1/4	4/64	Neg <1/4	2/16	4/8	✓
	2/128	Neg	3/128	Neg	3/32	3/32	Samples 1, 3, 5 & 6 - R Samples 2 & 4 - ✓
	1/32	Neg @ 1:4	4/32	Neg @ 1:4	3/8	3/8	✓
	2/4	Neg @ 1:4	3/32	Neg @ 1:4	2/8	2/8	Sample 1 - R Samples 2-6 - ✓
	4/32	<4 Neg	1/64	<4 Neg	2/16	2/16	✓
Median	Positive 1/32	Negative	Positive 2/64	Negative	Positive 2/16	Positive 1/16	
Acceptable Variation Range	Positive 1/16 - 1/64	N/A	Positive 2/32 - 2/128	N/A	Positive 2/8 - 2/32	Positive 1/8 - 1/32	
Retest Results							Classification
	4/16	-	-	-	-	3/16	R ✓
	1/128	-	-	-	-	-	Rm
	3/16	-	3/64	-	2/32	3/16	R ✓
	2/16	-	-	-	-	-	R ✓

One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 1 and 6.
 One laboratory was classified as Retest Result Demonstrating Minor Variation (Rm) for Sample 1.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 1, 3, 5 and 6.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 1.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	13/06/2019
Report Status	Final Report
Test Name	B. ovis CFT
Test Number (Code)	19/13
Test Month and Year	April 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Neg	2/64	Neg	2/128	2/128	2/32	Samples 1, 2, 3 & 6 - ✓ Samples 4 & 5 - MV
	Neg	4/16	Neg	4/32	4/32	4/16	✓
	Neg <8	2/32	Neg <8	4/64	4/64	4/32	✓
	Neg 0 @ 1:8	1/64	Neg 0 @ 1:8	2/128	4/128	2/64	Samples 1, 2 & 3 - ✓ Samples 4, 5 & 6 - MV
	Neg	1/32	Neg	1/64	1/64	1/32	✓
	Neg	1/64	Neg	4/128	4/128	4/32	Samples 1, 2, 3 & 6 - ✓ Samples 4 & 5 - MV
	Neg <8	1/16	Neg <8	1/32	1/32	1/16	Samples 1, 3, 4, 5 & 6 - ✓ Sample 2 - MV
	Neg	3/16	Neg	1/64	4/32	3/16	✓
	Neg @ 1:8	1/22	Neg @ 1:8	1/64	1/64	1/32	✓
	Neg <8	4/16	Neg <8	1/64	1/64	4/16	✓
	Neg	4/32	Neg	1/128	1/128	3/32	✓
Median	Negative	Positive 2/32	Negative	Positive 1/64	Positive 1/64	Positive 1/32	
Acceptable Variation Range	N/A	Positive 2/16 - 2/64	N/A	Positive 1/32 - 1/128	Positive 1/32 - 1/128	Positive 1/16 - 1/64	

Note: Due to low serum stock availability, retests or replacement samples were not available for this test round. Two laboratories were classified as demonstrating Minor Variation (MV) for Samples 4 and 5. One laboratory was classified as demonstrating Minor Variation (MV) for Samples 4, 5 and 6. One laboratory was classified as demonstrating Minor Variation (MV) for Sample 2. All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	17/01/2020
Report Status	Final Retest Report
Test Name	JD Bovine CFT
Test Number (Code)	19/34
Test Month and Year	July 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	2/32	1/32	4/16	4/16	Neg	Neg	✓
	3/16	3/16	2/16	2/16	Neg @ 1:8	Neg @ 1:8	✓
	2/32	4/16	4/16	4/16	<8 Neg	<8 Neg	✓
							See comment
	4/64	4/64	4/64	4/64	0/8 Neg	0/8 Neg	Samples 1-4 - R Samples 5-6 - ✓
Median	Positive 2/32	Positive 1/32	Positive 4/16	Positive 4/16	Negative	Negative	
Acceptable Variation Range	Positive 2/16 - 2/64	Positive 1/16 - 1/64	Positive 4/8 - 4/32	Positive 4/8 - 4/32	N/A	N/A	
Retest Results							Classification
	4/64	3/64	1/64	2/64	-	-	Samples 1-4 - Rm

Comment: One Laboratory did not report results by due date and as such received a General Report only. One laboratory was classified as Retest Result Demonstrating Minor Variation (Rm) for Samples 1, 2, 3 and 4. All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	28/06/2019
Report Status	Final Retest Report
Test Name	QF CFT
Test Number (Code)	19/07
Test Month and Year	March 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Neg	4/64	4/64	2/64	2/64	Neg	✓
	Neg <4	4/64	4/64	4/128	4/128	Neg <4	Samples 4 & 5 - R Samples 1-3, 6 - ✓
	Neg	2/32	2/32	1/64	2/64	Neg	✓
	Neg <8	2/64	2/64	3/128	3/128	Neg <8	Sample 5 - R Samples 1-4, 6 - ✓
	Neg 1:8	1/32	1/32	1/32	1/32	Neg 1:8	Samples 4 & 5 - R Samples 1-3, 6 - ✓
	Neg <8	2/32	1/32	4/64	2/64	Neg <8	✓
Median	Negative	Positive 4/32	Positive 4/32	Positive 3/64	Positive 2/64	Negative	
Acceptable Variation Range	N/A	Positive 4/16 - 4/64	Positive 4/16 - 4/64	Positive 3/32 - 3/128	Positive 2/32 - 2/128	N/A	
Retest Results							Classification
	-	-	-	4/64	4/64	-	Samples 4 & 5 - R✓
	-	-	-	-	1/128	-	Sample 5 - R✓
	-	-	-	4/32	4/32	-	Samples 4 & 5 - R✓

Two laboratories were classified as Retest Result Satisfactory (R✓) for Samples 4 and 5.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 5.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 4: Enzyme Linked Immunosorbent Assay (ELISA)

Akabane ELISA

Bluetongue virus (BTV) ELISA

Bovine viral diarrhoea virus (BVDV) Antibody ELISA

Bovine viral diarrhoea virus (BVDV) Antigen ELISA - clot

Bovine viral diarrhoea virus (BVDV) Antigen ELISA - ear notch

Bovine viral diarrhoea virus (BVDV) Antigen ELISA - serum

Brucella abortus (BB) ELISA

Brucella ovis (OB) ELISA

Caprine arthritis/encephalitis virus (CAEV) ELISA

Enzootic bovine leucosis (EBL) ELISA - milk

Infectious bovine rhinotracheitis (IBR) ELISA

Johne's disease – bovine (JD) ELISA

Report Date	13/06/2019
Report Status	Final Report
Test Name	Akabane ELISA
Test Number (Code)	19/17
Test Month and Year	April 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	0.07	Pos	0.93	Neg	0.12	Pos	0.96	Neg	0.18	Pos	0.17	Pos	✓
	0.05	Pos	0.56	Neg	0.05	Pos	0.54	Neg	0.05	Pos	0.05	Pos	✓
	0.09	Pos	0.84	Neg	0.36	Pos	0.87	Neg	0.37	Pos	0.10	Pos	✓
	0.16	Pos	1.13	Neg	0.19	Pos	1.23	Neg	0.18	Pos	0.16	Pos	✓
	0.09	Pos	1.55	Neg	0.12	Pos	1.57	Neg	0.13	Pos	0.08	Pos	✓
	0.06	Pos	0.62	Neg	0.09	Pos	0.64	Neg	0.07	Pos	0.06	Pos	✓
	0.38	Pos	1.00	Neg	0.38	Pos	0.98	Neg	0.37	Pos	0.40	Pos	✓
	0.15	Pos	1.47	Neg	0.19	Pos	1.52	Neg	0.23	Pos	0.20	Pos	✓
Consensus Interpretation	Positive		Negative		Positive		Negative		Positive		Positive		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	08/05/2019
Report Status	Final Report
Test Name	BTV ELISA
Test Number (Code)	19/11
Test Month and Year	March 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	0.10	Pos	0.28	Pos	2.24	Neg	2.22	Neg	0.56	Pos	0.69	Pos	✓
	0.06	Pos	0.06	Pos	0.86	Neg	1.35	Neg	0.06	Pos	0.06	Pos	✓
	0.09	Pos	0.06	Pos	0.95	Neg	1.00	Neg	0.09	Pos	0.15	Pos	✓
	0.05	Pos	0.06	Pos	1.44	Neg	1.44	Neg	0.06	Pos	0.07	Pos	✓
	-0.01	Pos	0.08	Pos	1.23	Neg	1.25	Neg	0.05	Pos	0.21	Pos	✓
	0.07	Pos	0.12	Pos	1.24	Neg	1.32	Neg	0.23	Pos	0.33	Pos	✓
	0.02	Pos	0.08	Pos	1.32	Neg	1.33	Neg	0.07	Pos	0.20	Pos	✓
	0.08	Pos	0.08	Pos	1.39	Neg	1.48	Neg	0.10	Pos	0.10	Pos	✓
	0.05	Pos	0.07	Pos	1.75	Neg	1.72	Neg	0.06	Pos	0.06	Pos	✓
	0.06	Pos	0.11	Pos	1.16	Neg	1.12	Neg	0.22	Pos	0.28	Pos	✓
	0.05	Pos	0.06	Pos	1.35	Neg	1.33	Neg	0.06	Pos	0.06	Pos	✓
Consensus Interpretation	Positive		Positive		Negative		Negative		Positive		Positive		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	17/12/2019
Report Status	Final Report
Test Name	BVDV Antibody ELISA
Test Number (Code)	19/43
Test Month and Year	September 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	0.55	Pos	0.57	Pos	0.65	Pos	0.49	Pos	0.05	Neg	0.06	Neg	✓
	1.62	Pos	1.47	Pos	1.93	Pos	1.40	Pos	0.08	Neg	0.07	Neg	✓
	1.17	Pos	1.14	Pos	1.55	Pos	1.04	Pos	0.08	Neg	0.08	Neg	✓
	0.99	Pos	1.00	Pos	1.18	Pos	0.89	Pos	0.07	Neg	0.08	Neg	✓
	0.07	Pos	0.07	Pos	0.06	Pos	0.08	Pos	1.42	Neg	1.01	Neg	✓
	0.08	Pos	0.07	Pos	0.10	Pos	0.08	Pos	1.52	Neg	1.43	Neg	✓
	0.06	Pos	0.06	Pos	0.07	Pos	0.10	Pos	1.04	Neg	0.82	Neg	✓
	0.02	Pos	0.02	Pos	0.03	Pos	0.05	Pos	1.04	Neg	1.11	Neg	✓
	0.06	Pos	0.06	Pos	0.07	Pos	0.11	Pos	1.22	Neg	0.97	Neg	✓
	0.04	Pos	0.05	Pos	0.05	Pos	0.06	Pos	1.35	Neg	1.34	Neg	✓
Consensus Interpretation	Positive		Positive		Positive		Positive		Negative		Negative		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	20/12/2019
Report Status	Final Retest Report
Test Name	BVDV Antigen ELISA - clot
Test Number (Code)	19/24
Test Month and Year	June 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	0.62	Neg	1.35	Pos	0.19	Neg	1.17	Pos	0.17	Neg	1.34	Pos	Sample 1 - R Samples 2-6 - ✓
	1.91	Pos	2.92	Pos	0.07	Neg	2.87	Pos	0.21	Neg	2.50	Pos	✓
	1.13	Pos	1.52	Pos	0.12	Neg	2.24	Pos	0.94	Pos	1.28	Pos	Sample 5 - R Samples 1-4, 6 - ✓
	2.66	Pos	3.77	Pos	0.00	Neg	3.85	Pos	0.04	Neg	3.74	Pos	✓
	2.91	Pos	3.73	Pos	0.13	Neg	4.05	Pos	0.28	Neg	3.42	Pos	✓
	0.46	Equivocal	1.26	Pos	0.08	Neg	0.94	Pos	0.09	Neg	1.20	Pos	Sample 1 - R Samples 2-6 - ✓
Consensus Interpretation	Positive		Positive		Negative		Positive		Negative		Positive		
Retest Results													Classification
	1.07	Pos	-	-	-	-	-	-	-	-	-	-	R✓
	-	-	-	-	-	-	0.09	Neg	-	-	-	-	R✓
	0.68	Equivocal	-	-	-	-	-	-	-	-	-	-	RU

One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 1.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 5.
 One laboratory was classified as Retest Result Unacceptable (RU) for Sample 1.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	20/12/2019
Report Status	Final Retest Report
Test Name	BVDV Antigen ELISA – ear notch
Test Number (Code)	19/25
Test Month and Year	June 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	0.61	Pos	0.72	Neg	0.01	Pos	0.88	Pos	0.78	Neg	0.90	Pos	Samples 1, 2, 3, 5 - R Samples 4, 6 - ✓
	0.09	Neg	1.98	Pos	0.07	Neg	2.59	Pos	1.95	Pos	2.51	Pos	✓
	0.08	Neg	1.88	Pos	0.08	Neg	2.43	Pos	1.94	Pos	2.23	Pos	✓
	0.12	Neg	2.08	Pos	0.11	Neg	2.95	Pos	2.24	Pos	2.71	Pos	✓
	0.04	Neg	2.13	Pos	0.02	Neg	2.93	Pos	2.24	Pos	2.69	Pos	✓
	0.27	Neg	0.98	Low Pos	0.22	Neg	3.22	Pos	0.28	Neg	4.44	Pos	Sample 5 - R Samples 1-4, 6 - ✓
	0.09	Neg	1.58	Pos	0.09	Neg	2.28	Pos	1.78	Pos	2.11	Pos	✓
	0.07	Neg	2.02	Pos	0.06	Neg	2.44	Pos	1.83	Pos	2.27	Pos	✓
	0.26	Neg	2.44	Pos	0.21	Neg	3.09	Pos	2.13	Pos	2.97	Pos	✓
	0.05	Neg	1.80	Pos	0.05	Neg	2.38	Pos	1.81	Pos	2.35	Pos	✓
Consensus Interpretation	Negative		Positive		Negative		Positive		Positive		Positive		
Retest Results													Classification
	0.16	Neg	1.40	Pos	0.07	Neg	-		1.37	Pos	-		R✓
	-		-		-		-		0.10	Neg	-		RU

One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 1, 2, 3 and 5.

One laboratory was classified as Retest Result Unacceptable (RU) for Sample 5.

All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	17/10/2019
Report Status	Final Report
Test Name	BVDV Antigen ELISA - serum
Test Number (Code)	19/23
Test Month and Year	June 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	1.29	Pos	0.06	Neg	1.65	Pos	0.85	Pos	0.06	Neg	0.83	Pos	✓
	3.37	Pos	0.07	Neg	3.50	Pos	2.39	Pos	0.05	Neg	2.41	Pos	✓
	3.24	Pos	0.06	Neg	3.06	Pos	2.54	Pos	0.06	Neg	2.58	Pos	✓
	3.45	Pos	0.08	Neg	3.54	Pos	2.53	Pos	0.08	Neg	2.57	Pos	✓
	3.59	Pos	0.07	Neg	4.02	Pos	2.57	Pos	0.07	Neg	2.45	Pos	✓
	3.75	Pos	0.09	Neg	4.56	Pos	2.63	Pos	0.12	Neg	2.69	Pos	✓
	3.64	Pos	0.07	Neg	3.87	Pos	2.52	Pos	0.07	Neg	2.56	Pos	✓
	4.47	Pos	0.09	Neg	4.61	Pos	4.01	Pos	0.09	Neg	3.92	Pos	✓
	3.89	High Pos	0.00	Neg	4++	High Pos	2.88	High Pos	0.08	Neg	2.76	High Pos	✓
	3.99	Pos	-0.01	Neg	4.39	Pos	3.22	Pos	0.00	Neg	3.45	Pos	✓
	3.11	Pos	0.07	Neg	3.08	Pos	2.44	Pos	0.06	Neg	2.42	Pos	✓
	4.09	Pos	0.10	Neg	4.14	Pos	3.66	Pos	0.11	Neg	3.56	Pos	✓
	3.17	Pos	0.03	Neg	3.42	Pos	2.54	Pos	0.03	Neg	2.35	Pos	✓
Consensus Interpretation	Positive		Negative		Positive		Positive		Negative		Positive		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	12/11/2019
Report Status	Final Report
Test Name	B. abortus ELISA
Test Number (Code)	19/33
Test Month and Year	July 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	0.16	Neg	1.04	Pos	1.01	Pos	0.19	Neg	0.98	Pos	0.94	Pos	✓
	0.17	Neg	1.89	Pos	1.69	Pos	0.08	Neg	1.79	Pos	1.64	Pos	✓
	0.04	Neg	1.08	Pos	1.06	Pos	0.06	Neg	0.98	Pos	0.82	Pos	✓
	0.00	Neg	2.82	Pos	2.74	Pos	0.00	Neg	2.93	Pos	2.94	Pos	✓
	1.45	Neg	0.04	Pos	0.05	Pos	1.54	Neg	0.05	Pos	0.17	Pos	✓
	0.14	Neg	2.32	Pos	2.44	Pos	0.10	Neg	2.19	Pos	2.51	Pos	✓
	0.07	Neg	1.06	Pos	1.04	Pos	0.07	Neg	1.08	Pos	0.91	Pos	✓
Consensus Interpretation	Negative		Positive		Positive		Negative		Positive		Positive		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	17/12/2019
Report Status	Final Report
Test Name	B. ovis ELISA
Test Number (Code)	19/44
Test Month and Year	September 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	2.34	Pos	0.07	Neg	0.08	Neg	3.03	Pos	0.74	Pos	2.90	Pos	✓
	1.79	Pos	0.06	Neg	0.09	Neg	3.48	Pos	0.54	Pos	2.32	Pos	✓
	See comment												
	3.07	Pos	0.09	Neg	0.14	Neg	4.00	Pos	0.98	Pos	4.00	Pos	✓
	3.30	Pos	0.11	Neg	0.18	Neg	3.26	Pos	1.46	Pos	3.13	Pos	✓
	1.87	Pos	0.10	Neg	0.15	Neg	3.45	Pos	0.82	Pos	3.62	Pos	✓
	2.16	Pos	0.08	Neg	0.15	Neg	3.39	Pos	0.57	Equivocal	3.40	Pos	Sample 5 - U Samples 1-4, 6 - ✓
Consensus Interpretation	Positive		Negative		Negative		Positive		Positive		Positive		

Note: Due to low serum stock availability, retests or replacement samples were not available for this test round.

Comment: One laboratory did not report results by due date.

One laboratory was classified as Result Unacceptable (U) for Sample 5.

All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	08/05/2019
Report Status	Final Report
Test Name	CAEV ELISA
Test Number (Code)	19/06
Test Month and Year	March 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	2.16	Pos	0.22	Neg	2.10	Pos	2.30	Pos	2.21	Pos	0.21	Neg	✓
	0.11	Pos	0.87	Neg	0.28	Pos	0.19	Pos	0.21	Pos	0.84	Neg	✓
	0.16	Pos	0.88	Neg	0.37	Pos	0.28	Pos	0.27	Pos	0.91	Neg	✓
	1.01	Pos	0.14	Neg	0.93	Pos	1.02	Pos	1.04	Pos	0.14	Neg	✓
	3.36	Pos	0.11	Neg	3.23	Pos	0.10	Pos	2.98	Pos	3.20	Neg	✓
	0.96	Pos	0.05	Neg	1.05	Pos	0.89	Pos	0.86	Pos	0.04	Neg	✓
	3.01	Pos	0.10	Neg	2.69	Pos	3.15	Pos	3.00	Pos	0.10	Neg	✓
	4.02	Pos	0.11	Neg	4.11	Pos	3.88	Pos	3.90	Pos	0.10	Neg	✓
	4.46	Pos	0.06	Neg	4.50	Pos	4.40	Pos	4.30	Pos	0.06	Neg	✓
	0.10	Pos	0.73	Neg	0.28	Pos	0.18	Pos	0.22	Pos	0.75	Neg	✓
	3.65	Pos	0.05	Neg	3.54	Pos	3.67	Pos	3.80	Pos	0.07	Neg	✓
	2.87	Pos	0.02	Neg	3.00	Pos	3.05	Pos	2.85	Pos	0.00	Neg	✓
	See comment												
	0.09	Pos	0.55	Neg	0.24	Pos	0.15	Pos	0.15	Pos	0.61	Neg	✓
	3.21	Pos	0.09	Neg	3.05	Pos	3.08	Pos	3.04	Pos	0.08	Neg	✓
Consensus Interpretation	Positive		Negative		Positive		Positive		Positive		Negative		

Comment: One laboratory did not report any results by the due date.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	28/03/2019
Report Status	Final Report
Test Name	EBL ELISA - Milk
Test Number (Code)	19/03
Test Month and Year	February 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	See comment												
	0.86	Pos	1.88	Pos	1.90	Pos	0.83	Pos	0.07	Neg	0.06	Neg	✓
	0.57	Pos	1.35	Pos	1.04	Pos	0.45	Pos	0.00	Neg	0.02	Neg	✓
	1.13	Pos	2.06	Pos	2.38	Pos	1.08	Pos	0.00	Neg	0.00	Neg	✓
Consensus Interpretation	Positive		Positive		Positive		Positive		Negative		Negative		

Comment: One laboratory did not report any results by due date.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	13/06/2019
Report Status	Final Report
Test Name	IBR ELISA
Test Number (Code)	19/15
Test Month and Year	April 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	0.16	Pos	0.07	Pos	0.80	Neg	0.84	Neg	0.10	Pos	0.07	Pos	✓
	2.76	Pos	3.36	Pos	0.03	Neg	0.03	Neg	3.11	Pos	3.38	Pos	✓
	0.13	Pos	0.07	Pos	1.25	Neg	1.29	Neg	0.09	Pos	0.08	Pos	✓
	2.61	Pos	2.76	Pos	0.10	Neg	0.11	Neg	3.12	Pos	3.07	Pos	✓
	0.17	Pos	0.07	Pos	1.29	Neg	1.30	Neg	0.09	Pos	0.08	Pos	✓
	0.12	Pos	0.07	Pos	1.52	Neg	1.53	Neg	0.08	Pos	0.07	Pos	✓
	0.09	Pos	0.06	Pos	1.70	Neg	1.61	Neg	0.20	Pos	0.07	Pos	✓
	0.30	Pos	0.06	Pos	1.10	Neg	1.06	Neg	0.09	Pos	0.07	Pos	✓
	0.18	Pos	0.09	Pos	1.35	Neg	1.34	Neg	0.11	Pos	0.07	Pos	✓
	0.10	Pos	0.09	Pos	1.53	Neg	1.46	Neg	0.08	Pos	0.08	Pos	✓
	0.15	Pos	0.06	Pos	1.37	Neg	1.34	Neg	0.09	Pos	0.07	Pos	✓
	0.08	Pos	0.06	Pos	1.48	Neg	1.48	Neg	0.05	Pos	0.06	Pos	✓
	0.04	Pos	0.01	Pos	0.91	Neg	0.92	Neg	0.03	Pos	0.01	Pos	✓
Consensus Interpretation	Positive		Positive		Negative		Negative		Positive		Positive		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	28/03/2019
Report Status	Final Report
Test Name	JD Bovine ELISA
Test Number (Code)	19/05
Test Month and Year	February 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	2.03	Pos	2.89	Pos	2.69	Pos	2.72	Pos	0.10	Neg	0.13	Neg	✓
	1.56	Pos	2.62	Pos	2.67	Pos	2.62	Pos	0.06	Neg	0.05	Neg	✓
	1.24	Pos	3.07	Pos	2.73	Pos	2.92	Pos	0.18	Neg	0.18	Neg	✓
	1.35	Pos	2.27	Pos	2.42	Pos	2.35	Pos	0.07	Neg	0.07	Neg	✓
	1.12	Pos	3.42	Pos	2.47	Pos	2.45	Pos	0.17	Neg	0.16	Neg	✓
	1.01	Pos	0.96	Pos	2.63	Pos	2.63	Pos	0.05	Neg	0.06	Neg	✓
	1.25	Pos	2.19	Pos	2.27	Pos	2.15	Pos	0.08	Neg	0.08	Neg	✓
	1.58	Pos	3.01	Pos	3.08	Pos	3.16	Pos	0.14	Neg	0.19	Neg	✓
	2.14	Pos	1.89	Pos	3.51	Pos	3.05	Pos	0.11	Neg	0.12	Neg	✓
	1.13	Pos	2.06	Pos	2.10	Pos	2.23	Pos	0.09	Neg	0.08	Neg	✓
	1.33	Pos	1.75	Pos	1.80	Pos	1.84	Pos	0.09	Neg	0.08	Neg	✓
	1.47	Pos	2.36	Pos	2.71	Pos	2.74	Pos	0.02	Neg	0.02	Neg	✓
	1.25	Pos	2.36	Pos	2.60	Pos	2.56	Pos	0.06	Neg	0.06	Neg	✓
	1.33	Pos	2.34	Pos	2.22	Pos	2.12	Pos	0.10	Neg	0.10	Neg	✓
	1.00	Pos	1.08	Pos	1.31	Pos	1.33	Pos	0.07	Neg	0.07	Neg	✓
	1.09	Pos	2.14	Pos	2.18	Pos	2.34	Pos	0.05	Neg	0.05	Neg	✓
Consensus Interpretation	Positive		Positive		Positive		Positive		Negative		Negative		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 5: Haemagglutination Inhibition Test (HIT)

Newcastle Disease virus (NDV) HIT

Report Date	05/08/2019
Report Status	Final Retest Report
Test Name	NDV HIT
Test Number (Code)	19/14
Test Month and Year	April 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	256	256	Neg	128	Neg	128	✓
	256	128	Neg <2	128	Non-specific	128	Samples 1-4, 6 - ✓ Sample 5 - R
	128	128	Neg <4	64	Neg <4	128	✓
	128	64	Neg <1:2	64	Neg <1:2	128	Samples 1, 3-6 - ✓ Sample 2 - R
	256	256	Neg 1/4	128	Neg 1/4	128	✓
	256	256	Neg <1/2	64	Neg <1/2	256	✓
	256	256	Neg	64	Neg	128	✓
	512	256	Neg	128	Neg	256	✓
	512	512	Neg	256	Neg	256	✓
	256	256	Neg @ 1:2	256	Neg @ 1:2	512	Samples 1-5 - ✓ Sample 6 - R
	256	256	Neg	128	Neg	512	Samples 1-5 - ✓ Sample 6 - U
	512	256	Neg	128	Neg	256	✓
Median	256.00	256.00	Negative	128.00	Negative	181.02	
Acceptable Variation Range	Positive 1/128.00 - 1/512.00	Positive 1/128.00 - 1/512.00	N/A	Positive 1/64.00 - 1/256.00	N/A	Positive 1/90.51 - 1/362.04	
Retest Results							Classification
	-	-	-	-	Neg <2	-	R ✓
	-	256	-	-	-	-	R ✓
	-	-	-	-	-	256	R ✓

One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 5.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 2.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 6.
 One laboratory was classified as Result Unacceptable (U) for Sample 6.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 6: Polymerase Chain Reaction (PCR)

Bovine viral diarrhoea virus (BVDV) PCR

Report Date	17/10/2019
Report Status	Final Report
Test Name	BVDV PCR
Test Number (Code)	19/27
Test Month and Year	June 2019

Laboratory Number	Sample 1	Int.	Sample 2	Int.	Sample 3	Int.	Sample 4	Int.	Sample 5	Int.	Sample 6	Int.	Classification
	20.96	Pos	25.48	Pos	25.81	Pos	>45	Neg	26.60	Pos	>45	Neg	✓
	22.63	Pos	29.03	Pos	28.94	Pos	NIL	Neg	30.20	Pos	NIL	Neg	✓
	21.35	Pos	26.66	Pos	26.69	Pos	≥45.00	Neg	27.22	Pos	≥45.00	Neg	✓
	25.23	Pos	30.00	Pos	30.24	Pos	Undetermined	Neg	30.71	Pos	Undetermined	Neg	✓
	27.20	Pos	30.60	Pos	31.00	Pos	45.00	Neg	31.70	Pos	45.00	Neg	✓
	27.10	Pos	31.18	Pos	31.18	Pos	>45	Neg	31.09	Pos	>45	Neg	✓
	23.15	Pos	28.49	Pos	28.79	Pos	N/A	Neg	29.07	Pos	N/A	Neg	✓
	21.17	Detected	27.08	Detected	26.74	Detected	0.00	Not Detected	27.73	Detected	0.00	Not Detected	✓
	24.39	Pos	28.78	Pos	28.84	Pos	0.00	Neg	28.57	Pos	0.00	Neg	✓
	19.68	Pos	25.39	Pos	24.85	Pos	>50	Neg	25.52	Pos	>50	Neg	✓
	21.39	Pos	26.80	Pos	26.35	Pos	Nil	Neg	26.74	Pos	Nil	Neg	✓
	21.40	Pos	26.20	Pos	26.10	Pos	>45	Neg	26.70	Pos	>45	Neg	✓
	23.20	Pos	28.30	Pos	28.60	Pos	>45	Neg	29.10	Pos	>45	Neg	✓
	21.96	Pos	27.29	Pos	27.18	Pos	0.00	Neg	27.77	Pos	0.00	Neg	✓
	20.50	Pos	24.60	Pos	24.50	Pos	NA	Neg	25.30	Pos	NA	Neg	✓
Consensus Interpretation	Positive		Positive		Positive		Negative		Positive		Negative		

All laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 7: Rose Bengal Plate Test (RBPT)

Brucella abortus (BB) RBPT

Report Date	17/10/2019
Report Status	Final Report
Test Name	B. abortus RBPT
Test Number (Code)	19/28
Test Month and Year	June 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Pos 3+	Neg	Pos 3+	Pos 2+	Neg	Pos 3+	✓
	Pos 3+	Neg	Pos 3+	Pos 2+	Neg	Pos 3+	✓
	Pos 3+	Neg	Pos 3+	Pos 2+	Neg	Pos 3+	✓
	Pos 3+	Neg	Pos 2+	Pos 1+	Neg	Pos 2+	✓
	Pos 3+	Neg	Pos 3+	Pos 2+	Neg	Pos 3+	✓
	Pos 3+	Neg	Pos 3+	Pos 2+	Neg	Pos 3+	✓
Consensus Interpretation	Positive 3+	Negative	Positive 3+	Positive 2+	Negative	Positive 3+	
Acceptable Variation Range	Positive 2+ - >3+	N/A	Positive 2+ - >3+	Positive 1+ - 3+	N/A	Positive 2+ - >3+	

All laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 8: Serum Agglutination Test (SAT)

Brucella abortus (BB) SAT

Report Date	17/12/2019
Report Status	Final Report
Test Name	B. abortus SAT
Test Number (Code)	19/45
Test Month and Year	September 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	744.00	1280.00	Neg	1488.00	Neg	Neg	✓
	480.00	960.00	0 Neg	960.00	0 Neg	0 Neg	✓
	585.00	828.00	Neg 11 IU	828.00	Neg 11 IU	Neg 11 IU	✓
	438.00	500.00	Neg <12 IU	500.00	Neg <12 IU	Neg <12 IU	✓
	560.00	800.00	Neg	800.00	Neg	Neg	✓
	588.00	744.00	Neg <17	848.00	Neg <17	Neg <17	✓
Median	Positive 572.36 IU/mL	Positive 813.88 IU/mL	Negative	Positive 837.94 IU/mL	Negative	Negative	
Acceptable Variation Range	Positive 286.18 - 1144.72 IU/mL	Positive 406.94 - 1627.76 IU/mL	N/A	Positive 418.97 - 1675.88 IU/mL	N/A	N/A	

All laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 9: Isolation

Bovine Viral Diarrhoea virus (BVDV) Isolation

Report Date	20/12/2019
Report Status	Final Retest Report
Test Name	BVDV Isolation
Test Number (Code)	19/26
Test Month and Year	June 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Pos	Neg	Neg	Pos	Pos	Neg	✓
	Pos	Neg	Neg	Pos	Pos	Pos	Sample 6 - R Samples 1-5 - ✓
	Pos	Neg	Neg	Pos	Pos	Neg	✓
	Pos	Pos	Pos	Pos	Pos	Neg	Samples 2 & 3 - R Samples 1, 4-6 - ✓
	Pos	Neg	Neg	Pos	Pos	Neg	✓
	Pos	Neg	Neg	Pos	Pos	Neg	✓
	Pos	Neg	Neg	Pos	Pos	Pos	Sample 6 - R Samples 1-5 - ✓
Consensus Interpretation	Positive	Negative	Negative	Positive	Positive	Negative	
Acceptable Variation Range	N/A	N/A	N/A	N/A	N/A	N/A	
Retest Results							Classification
	-	-	-	-	-	Neg	R✓
	-	Neg	Neg	-	-	-	R✓
	-	-	-	-	-		See comment

Comment: One Laboratory did not report retest results by due date.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 6.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 2 and 3.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 10: Virus Neutralisation Test (VNT)

Aino VNT

Akabane VNT

Bluetongue (BT) VNT

Bovine ephemeral fever (BEF) VNT

Bovine viral diarrhoea virus (BVDV) VNT

Equine viral arteritis (EVA) VNT

Infectious bovine rhinotracheitis (IBR) VNT

Report Date	17/01/2020
Report Status	Final Retest Report
Test Name	Aino VNT
Test Number (Code)	19/30
Test Month and Year	July 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	40.00	40.00	Neg	80.00	80.00	Neg	✓
	29.00	14.00	<2 Neg	11.00	18.00	<2 Neg	Samples 2, 4 & 5 - R Samples 1, 3 & 6 - ✓
	64.00	32.00	48.00	<4 Neg	64.00	<4 Neg	Samples 3 & 4 - R Samples 1, 2, 5 & 6 - ✓
	48.00	72.00	Neg @ 1:10	144.00	40.00	Neg @ 1:10	Sample 4 - R Samples 1, 2, 3, 5 & 6 - ✓
	64.00	64.00	Neg @ 1:4	40.00	64.00	Neg @ 1:4	✓
Median	Positive 1/48.00	Positive 1/40.00	Negative	Positive 1/56.57	Positive 1/64.00	Negative	
Acceptable Variation Range	Positive 1/24.00 - 1/96.00	Positive 1/20.00 - 1/80.00	N/A	Positive 1/28.29 - 1/113.14	Positive 1/32.00 - 1/128.00	N/A	
Retest Results							Classification
	-	36.00	-	45.00	91.00	-	R ✓
	-	-	Neg <4	32.00	-	-	R ✓
	-	-	-	48.00	-	-	R ✓

One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 2, 4 and 5.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 3 and 4.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 4.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	28/06/2019
Report Status	Final Retest Report
Test Name	Akabane VNT
Test Number (Code)	19/10
Test Month and Year	March 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Neg 1/4	32.00	8.00	256.00	Neg 1/4	128.00	Samples 2 & 3 - R Samples 1, 4-6 - ✓
	Neg <2	114.00	144.00	1149.00	Neg <2	362.00	Samples 3, 4 & 6 - R Samples 1, 2, & 5 - ✓
	Neg <4	96.00	36.00	192.00	Neg <4	72.00	Sample 4 - R Samples 1-3, 5 & 6 - ✓
	Neg <4	192.00	128.00	1024.00	Neg <4	128.00	Samples 2-4 - R Samples 1, 5 & 6 - ✓
	Neg	32.00	32.00	64.00	Neg	32.00	Samples 2, 4 & 6 - R Samples 1, 3 & 5 - ✓
	Neg 1:4	64.00	35.00	813.00	Neg 1:4	36.00	Sample 6 - R Samples 1-5 - ✓
Median	Negative	Positive 1/78.38	Positive 1/35.50	Positive 1/456.21	Negative	Positive 1/96.00	
Acceptable Variation Range	N/A	Positive 1/39.19 - 1/156.76	Positive 1/17.75 - 1/71.00	Positive 1/228.11 - 1/912.42	N/A	Positive 1/48.00 - 1/192.00	
Retest Results							Classification
	-	128.00	32.00	-	-	-	Samples 2 & 3 - R✓
	-	-	45.00	362.00	-	128.00	Samples 3, 4 & 6 - R✓
	-	-	-	288.00	-	-	Sample 4 - R✓
	-	128.00	48.00	512.00	-	-	Samples 2, 3 & 4 - R✓
	-	64.00	-	128.00	-	64.00	Samples 2 & 6 - R✓ Sample 4 - Rm
	-	-	-	-	-	89.00	Sample 6 - R✓

One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 2 and 3.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 3, 4 and 6.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 4.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 2, 3 and 4.
 One laboratory was classified as Retest Result Demonstrating Minor Variation (Rm) for Sample 4 and Retest Result Satisfactory (R✓) for Samples 2 and 6.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 6.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	19/02/2020
Report Status	Final Retest Report
Test Name	BTV-1 VNT
Test Number (Code)	19/18
Test Month and Year	May (moved to September) 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	10.00	Neg <5	20.00	80.00	80.00	Neg <5	Sample 1 - R Samples 2-6 - ✓
	96.00	Neg <4	80.00	96.00	144.00	Neg <4	Samples 1 & 3 - R Samples 2, 4-6 - ✓
	24.00	Neg <4	6.00	12.00	6.00	Neg <4	Samples 3-5 - R Samples 1-2, 6 - ✓
Median	Positive 1/24.00	Negative	Positive 1/20.00	Positive 1/80.00	Positive 1/80.00	Negative	
Acceptable Variation Range	Positive 1/12.00 - 1/48.00	N/A	Positive 1/10.00 - 1/40.00	Positive 1/40.00 - 1/160.00	Positive 1/40.00 - 1/160.00	N/A	
Retest Results							Classification
	20.00	-	-	-	-	-	R ✓
	32.00	-	40.00	-	-	-	R ✓
	-	-				-	See comment

Comment: One laboratory did not report retest results.

One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 1.

One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 1 and 3.

All other results were classified as Result Satisfactory (✓) for this test.

Report Date	17/01/2020
Report Status	Final Retest Report
Test Name	BEF VNT
Test Number (Code)	19/31
Test Month and Year	July 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Neg	20.00	20.00	40.00	Neg	40.00	Samples 2, 3 & 6 - R Samples 1, 4 & 5 - ✓
	<2 Neg	72.00	91.00	114.00	<2 Neg	287.00	Sample 4 - R Samples 1, 2, 3, 5 & 6 - ✓
	Neg <4	48.00	48.00	72.00	Neg <4	192.00	✓
	<4 Neg	96.00	48.00	48.00	<4 Neg	128.00	✓
	48.00	Neg @ 1:4	48.00	48.00	Neg @ 1:4	112.00	Samples 1 & 2 - R Samples 3-6 - ✓
	Neg @ 1:4	64.00	75.00	53.00	Neg @ 1:4	355.00	Sample 6 - R Samples 1-5 - ✓
Median	Negative	Positive 1/64.00	Positive 1/48.00	Positive 1/50.44	Negative	Positive 1/156.77	
Acceptable Variation Range	N/A	Positive 1/32.00 - 1/128.00	Positive 1/24.00 - 1/96.00	Positive 1/25.22 - 1/100.88	N/A	Positive 1/78.39 - 1/313.54	
Retest Results							Classification
	-	40.00	10.00	-	-	80.00	Sample 3 - RU Samples 2 & 6 - R ✓
	-	-	-	36.00	-	-	R ✓
	Neg @ 1:4	48.00	-	-	-	-	R ✓
	-	-	-	-	-	138.00	R ✓

One laboratory was classified as Retest Result Unacceptable (RU) for Sample 3 and Retest Result Satisfactory (R✓) for Samples 2 and 6.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 4.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 1 and 2.
 One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 6.
 All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	17/01/2020
Report Status	Final Retest Report
Test Name	BVDV VNT
Test Number (Code)	19/32
Test Month and Year	July 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Neg	Neg	1024.00	128.00	512.00	64.00	Sample 3 - R Samples 1, 2, 4-6 - ✓
	<4 Neg	<4 Neg	2896.00	256.00	724.00	128.00	✓
	Neg <1:2	Neg <1:2	3072.00	192.00	384.00	96.00	✓
	<4 Neg	<4 Neg	3072.00	48.00	768.00	64.00	Sample 4 - R Samples 1-3, 5, 6 - ✓
	Neg @ 1:4	Neg @ 1:4	>4096.00	128.00	>4096.00	128.00	Samples 3 & 5 - R Samples 1, 2, 4 & 6 - ✓
	Neg @ 1:4	Neg @ 1:4	9741.00	213.00	4095.00	213.00	Samples 3 & 5 - R Samples 1, 2, 4 & 6 - ✓
Median	Negative	Negative	Positive 1/3072.00	Positive 1/156.77	Positive 1/724.00	Positive 1/110.85	
Acceptable Variation Range	N/A	N/A	Positive 1/1536.00 - 1/6144.00	Positive 1/78.39 - 1/313.54	Positive 1/362.00 - 1/1448.00	Positive 1/55.43 - 1/221.70	
Retest Results							Classification
	-	-	2048.00	-	-	-	R ✓
	-	-	-	32.00	-	-	RU
	-	-	4096.00	-	4096.00	-	Sample 3 - R ✓ Sample 5 - RU
	-	-	2896.00	-	1218.00	-	R ✓

One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 3.

One laboratory was classified as Retest Result Unacceptable (RU) for Sample 4.

One laboratory was classified as Retest Result Unacceptable (RU) for Sample 5 and Retest Result Satisfactory (R✓) for Sample 3.

One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 3 and 5.

All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	28/03/2019
Report Status	Final Report
Test Name	EVA VNT
Test Number (Code)	19/02
Test Month and Year	February 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	16.00	32.00	64.00	32.00	Neg	Neg	Samples 1 & 4 - U Sample 2 - MV Samples 3, 5 & 6 - ✓
	362.00	114.00	228.00	362.00	Neg <2	Neg <2	Sample 3 - MV Samples 1, 2, 4, 5 & 6 - ✓
	192.00	96.00	96.00	256.00	Neg <1:2	Neg <1:2	✓
	256.00	128.00	256.00	128.00	Neg @ 1:4	Neg @ 1:4	Sample 3 - MV Samples 1, 2, 4, 5 & 6 - ✓
	326.00	80.00	90.00	406.00	Neg @ 1:4	Neg @ 1:4	✓
Median	Positive 1/256.00	Positive 1/96.00	Positive 1/96.00	Positive 1/256.00	Negative	Negative	
Acceptable Variation Range	Positive 1/128.00-1/512.00	Positive 1/48.00-1/192.00	Positive 1/48.00-1/192.00	Positive 1/128.00-1/512.00	N/A	N/A	

Note: Due to low serum stock availability, retests or replacement samples were not available for this test round. One laboratory was classified as Result Unacceptable (U) for Samples 1 and 4 and Result Demonstrating Minor Variation (MV) for Sample 2. Two laboratories were classified as Result Demonstrating Minor Variation (MV) for Sample 3. All other laboratories and results were classified as Result Satisfactory (✓) for this test.

Report Date	19/02/2020
Report Status	Final Retest Report
Test Name	IBR VNT
Test Number (Code)	19/46
Test Month and Year	September 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	128.00	512.00	Neg @ 1/2	256.00	512.00	Neg @ 1/2	✓
	91.00	362.00	Neg <1	181.00	181.00	Neg <1	✓
	128.00	512.00	Neg <1:1	512.00	384.00	Neg <1:1	✓
	128.00	768.00	Neg <1	512.00	768.00	Neg <1	Samples 2 & 5 - R Samples 1, 3-4, 6 - ✓
	32.00	96.00	Neg <4	128.00	96.00	Neg <4	Samples 1-2, 5 - R Samples 3-4, 6 - ✓
	256.00	256.00	Neg @ 1:4	128.00	128.00	Neg @ 1:4	Sample 5 - R Samples 1-4, 6 - ✓
	213.00	301.00	Neg @ 1:2	301.00	301.00	Neg @ 1:2	✓
Median	Positive 1/128.00	Positive 1/362.00	Negative	Positive 1/256.00	Positive 1/301.00	Negative	
Acceptable Variation Range	Positive 1/64.00 - 1/256.00	Positive 1/181.00 - 1/724.00	N/A	Positive 1/128.00 - 1/512.00	Positive 1/150.50 - 1/602.00	N/A	
Retest Results							Classification
	-	512.00	-	-	512.00	-	R ✓
	64.00	128.00	-	-	128.00	-	Sample 1 - R ✓ Samples 2 & 5 - Rm
	-	-	-	-	448.00	-	R ✓

One laboratory was classified as Retest Result Satisfactory (R✓) for Samples 2 and 5.

One laboratory was classified as Retest Result Demonstrating Minor Variation (Rm) for Samples 2 and 5 and Retest Result Satisfactory (R✓) for Sample 1.

One laboratory was classified as Retest Result Satisfactory (R✓) for Sample 5.

All other laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 11: Culture and Identification of *Mycobacterium paratuberculosis*

Johne's Disease Culture Australian National Quality Assurance Program 2019

CULTURE AND IDENTIFICATION OF *MYCOBACTERIUM PARATUBERCULOSIS*

Background

The aim of this round of the JD Culture ANQAP was to monitor the performance of a laboratory's ability to isolate *Mycobacterium avium* subspecies *paratuberculosis* (*M. paratuberculosis*) from individual bovine and pooled ovine faecal samples.

Each laboratory received one set of bovine samples and one set of ovine samples. Each laboratory received an identical set. Faeces from non-infected cattle and sheep were used as negative samples. The samples were supplied by the Johne's Disease National Reference Laboratory at the Department of Jobs, Precincts and Regions (DJPR), Victoria in conjunction with ANQAP.

JD Bovine Culture 2019

Methodology

Seven laboratories enrolled in this round of testing (Table 1).

Table 1. Reported methods used to culture and identify *M. paratuberculosis* in bovine faeces.

Laboratory Code	Test Method	Culture Method			Identification Test			
		Amount of faeces cultured (g)	Sample processing method	Primary culture medium	Mycobactin dependency	Primary identification and/or detection PCR	Strain typing IS1311 PCR	Restriction Enzyme Analysis
	ANZSDP	2.0	di/c	M7H9C liquid media and M7H10C slopes with Mycobactin J	Yes	Yes ^{a&f}	N/A	N/A
	ANZSDP	2.0	di/c	M7H9C with Mycobactin added	N/A	Yes ^{d&e}	Yes	N/A
	ANZSDP	3.0	N/A	M7H9C & 7H10	N/A	Yes ^{c&f}	Yes	Yes
	ANZSDP	1.3 +/- 0.3g	di/c	M7H9C with Mycobactin added	N/A	Yes ^f	N/A	N/A
	ANZSDP	2.0	ANZSDP	M7H9C	N/A	Yes	N/A	N/A
	ANZSDP	2.0	di	M7H9c with mycobactin	Yes	Yes	Yes	Yes
	Not stated	1.0	In-house	Thermo Scientific TREK® para-JEM™ Broth and supplements GS, AS, EYS and Blue	N/A	Yes ^b	N/A	N/A

Key

di: double incubation

c: centrifugation

^{a:} Millar et al. 1994;

^{b:} Applied Biosystems VetMax Gold;

^{c:} Marshall 1999;

^{d:} FANG et al. J Clinical Micro (2002) 40:287-291;

^{e:} MARSH et al. Mol Cell Probes (1999) 13:115-126;

^{f:} Kawaji et al. 2007.

Majority of laboratories reported receiving their samples within two days. Most laboratories did not report the condition of the samples upon arrival, but they were expected to arrive at room temperature.

Results

Table 2. Reported results for identification of *M. paratuberculosis* in bovine faeces.

Report Date	21/05/2020
Report Status	Final Report
Test Name	JD Bovine Culture 2019
Test Number	19/40
Test Month and Year	August 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Classification
	Neg	Pos	Neg	Neg	Neg	Samples 1, 2, 4 & 5 - ✓ Sample 3 - U
	Neg	Pos	Pos	Neg	Neg	✓
	Neg	Pos	Pos	Neg	Neg	✓
	Neg	Pos	Pos	Neg	Neg	✓
	Neg	Pos	Pos	Neg	Neg	✓
	Neg	Pos	Pos	Neg	Neg	✓
	Neg	Pos	Pos	Neg	Neg	✓
Consensus Interpretation	Negative	Positive	Positive	Negative	Negative	

Note: Retest samples were not available for this round.

One laboratory was classified as Result Unacceptable (U) for Sample 3.

All other laboratories and results were classified as Result Satisfactory (✓) for this test.

JD Ovine Culture 2019

Methodology

Seven laboratories enrolled in this round of testing (Table 3).

Table 3. Reported methods used to culture and identify *M. paratuberculosis* in ovine faeces.

Laboratory Code	Test Method	Culture Method			Identification Test			
		Amount of faeces cultured (g)	Sample processing method	Primary culture medium	Mycobactin dependency	Primary identification and/or detection PCR	Strain typing IS1311 PCR	Restriction Enzyme Analysis
	ANZSDP	2.0	di/c	M7H9C liquid media and M7H10C slopes with Mycobactin J	Yes	Yes ^{a & f}	N/A	N/A
	ANZSDP	2.0	di/c	M7H9C with Mycobactin added	N/A	Yes ^{d & e}	Yes	N/A
	ANZSDP	3.0	N/A	M7H9C & 7H10	N/A	Yes ^{c & f}	Yes	Yes
	ANZSDP	1.3 +/- 0.3g	di/c	M7H9C with Mycobactin added	N/A	Yes ^f	N/A	N/A
	ANZSDP	15	ANZSDP	M7H9C	N/A	Yes	N/A	N/A
	ANZSDP	1.5	di	M7H9c with mycobactin	Yes	Yes	Yes	Yes
	In-house	1.0	In-house	Thermo Scientific TREK® para-JEM™ Broth and supplements GS, AS and Blue and Modified Middlebrooks 7H10	N/A	Yes ^b	N/A	N/A

Key

di: double incubation

c: centrifugation

^a: Millar et al. (1994);

^b: Applied Biosystems VetMax Gold;

^c: Marshall 1999;

^d: FANG et al. J Clinical Micro (2002) 40:287-291;

^e: MARSH et al. Mol Cell Probes (1999) 13:115-126;

^f: Kawaji et al. 2007.

Majority of laboratories reported receiving their samples within two days. Most laboratories did not report the condition of the samples upon arrival, but they were expected to arrive at room temperature.

Results

Table 4. Reported results for identification of *M. paratuberculosis* in ovine faeces.

Report Date	21/05/2020
Report Status	Final Report
Test Name	JD Ovine Culture 2019
Test Number	19/41
Test Month and Year	August 2019

Laboratory Number	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Classification
	Pos	Neg	Pos	Neg	Pos	Pos	✓
	Pos	Neg	Pos	Neg	Pos	Pos	✓
	Pos	Neg	Pos	Neg	Pos	Pos	✓
	Pos	Neg	Pos	Neg	Pos	Pos	✓
	Pos	Pos	Pos	Neg	Pos	Pos	Samples 1, 3-6 ✓ Sample 2 - U
	Pos	Neg	Pos	Neg	Pos	Pos	✓
	Pos	Neg	Pos	Neg	Pos	Pos	✓
Consensus Interpretation	Positive	Negative	Positive	Negative	Positive	Positive	

Note: Retest samples were not available for this round.

One laboratory was classified as Result Unacceptable (U) for Sample 2.

All other laboratories and results were classified as Result Satisfactory (✓) for this test.

SECTION 12: Culture and Gelatin Gel Testing of *Dichelobacter nodosus*

Prepared by:
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Australian Reference Laboratory for
Dichelobacter nodosus, Western Australia

Gelatin Gel Quality Assurance Tests 2019-2020

ANQAP are yet to receive the *D. nodosus* 2019-2020 results and report.

This report will be updated with the information upon receipt.

End of Report

ANQAP treats all information provided by participants in confidence.

No laboratory or organization can use this report or information contained within the report without prior written consent from ANQAP.

ANQAP recommends that laboratories given a classification of Unacceptable undertake corrective action within the laboratory to identify and rectify problems with the test.

ANQAP actively seeks and welcomes your feedback.

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