

Camelid TB Serology Quarterly Report

Number: 35

Report Period 1st October to 31st December 2023

Issued 03/Jan/2024

Quarterly Camelid Serology Report

Test Criteria

Submission Reason	Explanation
APHA /DEFRA	At Government expense
Parallel Test:	
PAR-TB	TB breakdown herd with confirmed M. bovis infection (including Wales where Officially TB Free Withdrawn [OTFW] status is determined on epidemiological grounds)
PAR-SUS	TB strongly suspected but not currently confirmed by laboratory culture – herd under restrictions
PAR-TRC	Forward tracing(s) from an M. bovis-infected camelid herd (includes camelid herds in Wales only co-located on the same premises with infected cattle, sheep, deer, goats & pigs)
PAR-COL-W	Wales only - camelids under restriction due to sharing a holding (colocation) with an OTFW cattle herd or with other non-bovine animals affected by a culture-confirmed incident
Serial Test:	
SER-SUS (replaces PA	TB strongly suspected but not currently confirmed by laboratory culture – herd under restrictions. If infection is confirmed the initial High Specificity (serial) test results can be reinterpreted at High Sensitivity on request from the APHA case vet.
SER-CONT	Herd not under restriction but contiguous to a TB-infected herd
SER-COL	Herd not under restriction but co-located with an infected herd of cattle, deer, goats etc. (Eng & Scot only)
SER-EPI	Herd not under restriction but TB tested due to an epidemiological link with a known infected herd (e.g. back-tracing)
SER-CHK	Inconclusive Reactor check test – e.g. where private Enferplex test has produced a 2-spot-positive result on 2 consecutive occasions
Commercial/Private	At Owner expense
SER-MVT	Pre- or post-movement test
SER-EXP	Pre-export test
SER-DIAG	Diagnostic to exclude TB from a differential diagnoses in a herd not restricted (TB strongly suspected)
SER-RHT	Monitoring - voluntary routine testing (herd nor restricted)

The camelid TB serology (antibody) test generally comprises two separate antibody tests in a test package that can be applied flexibly to increase the sensitivity or specificity of the test as required, by using a parallel or serial test interpretation respectively. The sensitivity and specificity values of combined antibody testing for camelids were described under AHVLA Project FT1477 (see Rhodes et al., 2012) and re-assessed in May 2018 to show the following test performance;

Table 1 – High Sensitivity / Parallel test options:

	% Se	95% C.I.	% Sp	95% C.I.
IDEXX /DPP VetTB	74	65.4-82.6	96	93.8-98.2
ENFER 2-SPOT/DPP VetTB	71	62.1-79.9	96.7	95.8-99.4
IDEXX/ENFER 2-SPOT	75	66.5-83.5	97.3	95.4-99.1

Fishers Exact [2-sided] test showed no significant difference in sensitivity or specificity between any of these three test options.

Table 2 – High Specificity / Serial test options:

	% Se	95% C.I.	% Sp	95% C.I.
ENFER 4-SPOT	60	50.4-69.9	99.66	98.9-100
IDEXX/DPP VetTB	56	46.3-65.7	100	

Fishers Exact [2-sided] test showed no significant difference in test sensitivity or specificity between these two test options.

Rhodes, S., Holder, T., Clifford, D., Dexter, I., Brewer, J., Smith, N., Waring, L., Crawshaw, T., Gillgan, S., Lyashchenko, K., Lawrence, J., Clarke, J., de la Rua-Domenech, R., Vordermeier, M., 2012. Evaluation of gamma interferon and antibody tuberculosis tests in alpacas. Clin Vaccine Immunol 19, 1677-1683.

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Number of Samples tested and Submission Reason 2023 Q4 (October - December)

Table 1a	
Country	No. Samples Tested
England	294
Wales	88
Non GB	3
Total for Q4	385

Table 1b		
	Submission Reason	No. Samples Tested
Parallel	PAR-COL-W	18
	PAR-TB	60
Parallel	Sum:	78
Serial	SER-CHK	4
	SER-COL	14
	SER-CONT	267
	SER-EPI	4
Serial	Sum:	289
Commercial/Private Testing	SER-EXP	12
	SER-MVT	6
Commercial/Private Testing	Sum:	18
Total for Q4	Sum:	385

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Number of Samples tested and Submission Reason 2023 up to end of Q4 (January - December)

Table 2a	
Country	No. Samples Tested
England	900
Wales	232
Non GB	3
Scotland	2
Total for Q4	1137

Table 2b		
APHA/DEFRA	Submission Reason	No. Samples Tested
Parallel	PAR-COL-W	60
	PAR-TB	114
Parallel	Sum:	174
Serial	SER-CHK	4
	SER-COL	27
	SER-CONT	724
	SER-EPI	10
Serial	Sum:	765
Commercial/Private Testing	SER-DIAG	1
	SER-EXP	22
	SER-MVT	28
	SER-RHT	10
Commercial/Private Testing	Sum:	61
	SER-SUS	137
	Sum:	137
Total for 2023 up to end of Q4		1137

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Test Positivity in 2023 Q4 (October - December)

Table 3a						
Submissions Received and Test Positivity in 2023 Q4						
Country		Submission Reason	No. Submissions	No. Samples Tested	No. Positive Samples	% Positive Samples
England	Parallel	PAR-TB	4	60	16	26.7%
	Parallel		4	60	16	26.7%
	Serial	SER-CHK	2	4	0	0
		SER-COL	2	14	0	0
		SER-CONT	25	197	2	1.0%
		SER-EPI	1	4	0	0
	Serial		30	219	2	0.9%
	Commercial/Private Testing	SER-EXP	1	12	0	0
		SER-MVT	1	3	0	0
	Commercial/Private Testing		2	15	0	0
England Total			36	294	18	6.1%
Wales	Parallel	PAR-COL-W	3	18	1	5.6%
	Parallel		3	18	1	5.6%
	Serial	SER-CONT	5	70	1	1.4%
	Serial		5	70	1	1.4%
Wales Total			8	88	2	2.3%
Non GB	Commercial/Private Testing	SER-MVT	1	3	0	0
	Commercial/Private Testing		1	3	0	0
Non GB Total			1	3	0	0
Totals for Q4			45	385	20	5.2 %

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Test Positivity in 2023 up to end of Q4 (January - December)

Table 3b						
Submissions Received and Test Positivity in 2023 up to the end of Q4						
Country		Submission Reason	No. Submissions	No. Samples Tested	No. Positive Samples	% Positive Samples
England	Parallel	PAR-TB	6	114	24	21.1%
	Parallel		6	114	24	21.1%
	Serial	SER-CHK	2	4	0	0
		SER-COL	6	27	0	0
		SER-CONT	59	588	5	0.9%
		SER-EPI	1	4	0	0
	Serial		68	623	5	0.8%
	Commercial/Private Testing	SER-DIAG	1	1	0	0
		SER-EXP	3	20	0	0
		SER-MVT	8	25	0	0
		SER-RHT	3	10	0	0
	Commercial/Private Testing		15	56	0	0
		SER-SUS	1	107	0	0
			1	107	0	0
England Total			90	900	29	3.2%
Wales	Parallel	PAR-COL-W	6	60	5	8.3%
	Parallel		6	60	5	8.3%
	Serial	SER-CONT	14	136	1	0.7%
		SER-EPI	1	6	0	0
	Serial		15	142	1	0.7%
		SER-SUS	1	30	0	0
			1	30	0	0
Wales Total			22	232	6	2.6%
Non GB	Commercial/Private Testing	SER-MVT	1	3	0	0
	Commercial/Private Testing		1	3	0	0
Non GB Total			1	3	0	0
Scotland	Commercial/Private Testing	SER-EXP	1	2	0	0
	Commercial/Private Testing		1	2	0	0
Scotland Total			1	2	0	0
Totals up to end Q4			114	1,137	35	3.1 %

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Submissions Received in 2023 up to end of Q4

Table 4: Number of samples Tested by Test Code

Analysis	Analysis Description	Q1	Q2	Q3	Q4	
		No. samples tested	No. samples tested	No. samples tested	No. samples tested	Totals up to end Q4
TC0503	Camelid TB Enferplex - 2 Spot	24	30		58	112
TC0603	Camelid TB Enferplex - 4 Spot	278	26	116	118	538
TC0611	Chembio DPP VetTB lateral flow rapid antibody test	70	91	117	214	492
TC0867	Camelid TB Antibody ELISA	94	121	117	272	604