

Camelid TB Serology Quarterly Report

Number: 27

Report Period 1st October to 31st December 2021

Issued 05/Jan/2022

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PAR-TB	TB breakdown herd with confirmed M. bovis infection (including Wales where Officially TB Free Withdrawn [OTFW] status is determined on epidemiological grounds)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 2021 Q4 (October - December)

Table 1a	
Country	No. Samples Tested
England	505
Wales	34
Non GB	30
Total for Q4	569

Table 1b		
	Submission Reason	No. Samples Tested
Parallel	PAR-TB	77
	PAR-TRC	11
Parallel	Sum:	88
Serial	SER-CHK	2
	SER-COL	2
	SER-CONT	240
Serial	Sum:	244
Commercial/Private Testing	SER-MVT	41
	SER-RHT	1
Commercial/Private Testing	Sum:	42
	SER-SUS	195
	Sum:	195
Total for Q4	Sum:	569

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Number of Samples tested and Submission Reason 2021 up to end of Q4 (January - December)

Table 2a	
Country	No. Samples Tested
England	1678
Wales	290
Non GB	36
Total for Q4	2004

Table 2b		
APHA/DEFRA	Submission Reason	No. Samples Tested
Parallel	PAR-COL-W	7
	PAR-SUS	5
	PAR-TB	337
	PAR-TRC	11
Parallel	Sum:	360
Serial	SER-CHK	10
	SER-COL	17
	SER-CONT	1077
	SER-EPI	4
Serial	Sum:	1108
Commercial/Private Testing	SER-MVT	63
	SER-RHT	5
Commercial/Private Testing	Sum:	68
	SER-SUS	468
	Sum:	468
Total for 2021 up to end of Q4		2004

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Test Positivity in 2021 Q4 (October - December)

Table 3a						
Submissions Received and Test Positivity in 2021 Q4						
Country		Submission Reason	No. Submissions	No. Samples Tested	No. Positive Samples	% Positive Samples
England	Parallel	PAR-TB	3	77	8	10.4%
		PAR-TRC	3	11	1	9.1%
	Parallel		6	88	9	10.2%
	Serial	SER-CHK	2	2	0	0
		SER-COL	2	2	0	0
		SER-CONT	18	206	3	1.5%
	Serial		22	210	3	1.4%
	Commercial/Private Testing	SER-MVT	3	11	0	0
		SER-RHT	1	1	0	0
	Commercial/Private Testing		4	12	0	0
		SER-SUS	5	195	6	3.1%
			5	195	6	3.1%
England Total			37	505	18	3.6%
Wales	Serial	SER-CONT	4	34	0	0
	Serial		4	34	0	0
Wales Total			4	34	0	0
Non GB	Commercial/Private Testing	SER-MVT	1	30	0	0
	Commercial/Private Testing		1	30	0	0
Non GB Total			1	30	0	0
Totals for Q4			42	569	18	3.2 %

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Test Positivity in 2021 up to end of Q4 (January - December)

Table 3b						
Submissions Received and Test Positivity in 2021 up to the end of Q4						
Country		Submission Reason	No. Submissions	No. Samples Tested	No. Positive Samples	% Positive Samples
England	Parallel	PAR-TB	12	277	32	11.6%
		PAR-TRC	3	11	1	9.1%
	Parallel		15	288	33	11.5%
	Serial	SER-CHK	5	5	2	40.0%
		SER-COL	8	17	0	0
		SER-CONT	94	979	19	1.9%
		SER-EPI	1	4	0	0
	Serial		108	1,005	21	2.1%
	Commercial/Private Testing	SER-MVT	8	27	0	0
		SER-RHT	2	5	0	0
	Commercial/Private Testing		10	32	0	0
		SER-SUS	9	353	13	3.7%
			9	353	13	3.7%
England Total			142	1,678	67	4.0%

Wales	Parallel	PAR-COL-W	1	7	2	28.6%
		PAR-SUS	1	5	0	0
		PAR-TB	3	60	5	8.3%
	Parallel		5	72	7	9.7%
	Serial	SER-CHK	3	5	0	0
		SER-CONT	10	98	2	2.0%
	Serial		13	103	2	1.9%
		SER-SUS	2	115	1	0.9%
			2	115	1	0.9%
Wales Total			20	290	10	3.4%

Non GB	Commercial/Private Testing	SER-MVT	2	36	0	0
	Commercial/Private Testing		2	36	0	0
Non GB Total			2	36	0	0

Totals up to end Q4			164	2,004	77	3.8 %
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Submissions Received in 2021 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	114	6	63	65	248
TC0603	Camelid TB Enferplex - 4 Spot	118	444	284	393	1,239
TC0611	Chembio DPP VetTB lateral flow rapid antibody test	81	88	255	122	546
TC0867	Camelid TB Antibody ELISA	173	241	316	165	895