

Variable	Level	Parameter estimate ($\hat{\beta}$)	Odds ratio (95% CI)	P value
Vaccination interval				0.910
	≤ 2.5 months	Referent		
	2.6 – 6.6 months	0.250	1.28 (0.48, 3.41)	0.616
	6.7 – 15.1 months	0.164	1.18 (0.37, 3.60)	0.773
	> 15.1 months	-0.102	0.90 (0.30, 2.73)	0.857
	< 6.7 months	Referent		
	≥ 6.7 months	-0.116	0.89 (0.42, 1.87)	0.759
	Continuous	-0.016	0.98 (0.95, 1.02)	0.328
Vaccination proportion				0.953
	0 %	-0.135	0.87 (0.30, 2.56)	0.805
	0.1 – 6.0%	0.144	1.15 (0.37, 3.57)	0.803
	6.1 – 16%	0.123	1.13 (0.40, 3.16)	0.815
	$> 16\%$	Referent		
	$< 6.1\%$	0.083	1.09 (0.51, 2.33)	0.832
	$\geq 6.1\%$	Referent		
	Continuous	2.410	11.13 (0.41, 303.8)	0.153
FMDV vaccine match				0.841
	< 0.30	Referent		
	0.30 – 0.39	3.266	26.20 (0, 5×10^{14})	0.835
	0.40 – 0.49	0.016	1.02 (0, 2×10^{14})	0.999
	≥ 0.50	No data		
	< 0.30	Referent		
	≥ 0.30	0.000	1.0	1.0
	Continuous	8.323	4119 (0.55, 3×10^7)	0.068
Cattle population				0.007
	< 400 head	Referent		
	400 – 595 head	0.423	1.53 (0.25, 9.21)	0.644
	596 – 853 head	2.046	7.74 (1.76, 34.07)	0.007
	≥ 854 head	1.560	4.76 (1.03, 22.07)	0.046
	≤ 595 head	Referent		
	≥ 596 head	1.604	4.98 (1.90, 13.05)	0.001
	Continuous	0.001	1.001 (1.000, 1.002)	0.036
Monthly cattle inspections				0.011
	≤ 636 head	Referent		
	637 – 1144 head	0.336	1.40 (0.44, 4.47)	0.571
	1145 – 1552 head	-0.991	0.37 (0.08, 1.79)	0.217
	≥ 1553	1.073	2.92 (1.19, 7.18)	0.019

	< 1145 head	Referent		
	≥ 1145 head	0.356	1.43 (0.68, 2.99)	0.346
	< 1553 head	Referent		
	≥ 1553 head	1.204	3.33 (1.61, 6.92)	0.001
	Continuous	0.001	1.001 (1.000, 1.001)	0.005
Inspection intensity				0.256
	< 1.2 X per month	Referent		
	1.2 – 2.0	-0.308	0.74 (0.24, 2.30)	0.596
	2.1 – 2.5	0.392	1.48 (0.48, 4.59)	0.498
	> 2.5 times	0.647	1.91 (0.70, 5.18)	0.204
	< 2.1 X per month	Referent		
	≥ 2.1 times	0.713	2.04 (0.97, 4.28)	0.059
	Continuous	0.030	1.03 (0.77, 1.38)	0.841
Mean monthly inspections				0.556
	≤ 2.1 inspections	Referent		
	2.2 – 2.7	-0.234	0.79 (0.28, 2.26)	0.663
	2.8 – 3	0.431	1.54 (0.58, 4.07)	0.386
	≥ 3.1	-0.098	0.91 (0.29, 2.86)	0.867
	< 2.8 inspections	Referent		
	≥ 2.8	0.343	1.41 (0.68, 2.93)	0.358
	Continuous	0.066	1.07 (0.70, 1.63)	0.758
Inspection proportion				0.256
	< 0.27	Referent		
	0.27 – 0.47	-0.308	0.74 (0.24, 2.30)	0.596
	0.48 – 0.57	0.392	1.48 (0.48, 4.59)	0.498
	≥ 0.58	0.647	1.91 (0.70, 5.18)	0.204
	< 0.48	Referent		
	≥ 0.48	0.713	2.04 (0.97, 4.28)	0.059
	Continuous	0.566	1.76 (0.32, 9.69)	0.515
In movements				0.253
	≤ 1.0 cattle	Referent		
	1.1 – 2.7 cattle	0.649	1.91 (0.67, 5.45)	0.224
	2.74 cattle	-0.474	0.62 (0.12, 3.21)	0.571
	≥ 2.75 cattle	0.766	2.15 (0.73, 6.32)	0.164
	< 2.75 cattle	Referent		
	≥ 2.75 cattle	0.629	1.88 (0.87, 4.04)	0.108
	Continuous	0.036	1.04 (1.00, 1.07)	0.049

Out movements				0.364
	≤ 1.5 cattle	Referent		
	1.6 – 3.0 cattle	0.402	1.50 (0.51, 4.38)	0.463
	3.1 – 7.6 cattle	0.260	1.30 (0.31, 5.48)	0.724
	≥ 7.7 cattle	0.882	2.44 (0.85, 7.04)	0.099
	≤ 3.0 cattle	Referent		
	≥ 3.1 cattle	0.471	1.60 (0.77, 3.34)	0.209
	< 7.7 cattle	Referent		
	≥ 7.7 cattle	0.641	1.90 (0.89, 4.03)	0.096
	Continuous	0.012	1.01 (0.97, 1.06)	0.589
Human population density				0.184
	< 610 (units???)	Referent		
	610 – 1099	0.553	1.74 (0.62, 4.86)	0.292
	1100 – 1699	-0.683	0.51 (0.13, 2.03)	0.336
	≥ 1700	0.584	1.79 (0.65, 4.97)	0.282
	< 1100	Referent		
	≥ 1100	-0.191	0.83 (0.40, 1.73)	0.611
	Continuous (unit?)	0.000	1.000 (0.999, 1.000)	0.567
Distance to game reserve				0.011
	≤ 4.0 km	7.973	5.95 (1.73, 20.53)	0.005
	4.1 – 9.7 km	2.619	2.95 (0.80, 10.96)	0.106
	≥ 9.8 km*	Referent		
	≤ 7.1 km	1.639	5.15 (1.92, 13.64)	0.001
	≥ 7.2 km	Referent		
	Continuous (km)	-0.201	0.82 (0.73, 0.92)	<0.001
Distance to roads				0.086
	< 2.6 km	Referent		
	2.6 – 5.5 km	0.379	1.46 (0.41, 5.25)	0.561
	5.6 – 13.5 km	0.391	1.48 (0.42, 5.25)	0.545
	≥ 13.6 km	1.222	3.39 (1.11, 10.42)	0.033
	< 5.6 km	Referent		
	≥ 5.6 km	0.670	1.95 (0.90, 4.23)	0.089
	Continuous (km)	0.037	1.04 (1.01, 1.07)	0.012
Distance to rivers				0.199
	< 5.5 km	-0.581	0.56 (0.22, 1.45)	0.232
	5.5 – 15.9 km	-0.903	0.41 (0.14, 1.15)	0.091

16.0 – 26.3 km	-0.929	0.40 (0.14, 1.14)	0.085
≥ 26.4 km	Referent		
< 16.0 km	Referent		
≥ 16.0 km	0.365	1.44 (0.68, 3.05)	0.340
Continuous (km)	0.031	1.03 (1.00, 1.07)	0.053

*Three categories created because no outbreaks occurred in the furthest distances

CI = confidence interval.

Supplemental Table (3): Univariate associations for potential risk factors for FMD *occurrence* and *spread* in the FMD protection zone with vaccination of South Africa (2007-2016)