**Supplementary Material**

**Table 1.** The solid-phase competitive ELISA (SPCE) % inhibition results at 1:10 dilution (results for 1:30 dilution not shown) and the log reciprocal of virus neutralisation test (VNT) titres in subsistence (Rufunsa) and commercial (Chisamba) cattle herds vaccinated with either one (day 0) or two doses (day 0 and 28) of an FMDV serotype O vaccine. The SPCE results are semi-quantitative with a darker shade of green indicating stronger positivity and negative results indicated in grey. The positive VNT results are indicated in light green for partially protective titres (> 11; < 32), green for a protective titre (32) and dark green for strongly protective titres (> 32); negative results are indicated in light grey.

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| ID | Dose | Location | 1:10 SPC-ELISA (days post-vaccination) | | | | | | Log VNT (days post-vaccination) | | | | | | |
|  |  |  | 0 | 7 | 28 | 56 | 112 | 168 | 0 | 7 | 14 | 28 | 56 | 112 | 168 |
| *RFK C2* | *Control* | *Rufunsa* | *-6.55* | *-11.70* | *-1.60* | *18.96* | *-1.30* | *-2.04* | 0.60 | 0.60 |  | 1.04 | 1.20 | 1.04 | 1.20 |
| *RFK C3* | *Control* | *Rufunsa* | *-7.41* | *-13.61* | *5.55* | *0.27* | *3.10* | *7.44* | 0.60 | 1.34 |  | 1.20 | 1.04 | 1.04 | 1.20 |
| RFK 32 | 1-dose | Rufunsa | -3.11 | -1.77 | 41.18 | 2.91 | 85.46 | 49.88 | 0.60 | 0.60 |  | 1.65 | 1.04 | 1.51 | 1.51 |
| RFK 34 | 1-dose | Rufunsa | -1.79 | -6.41 | 17.68 | 46.55 | 10.23 | 40.14 | 0.60 | 1.20 |  | 1.65 | 1.04 | 1.04 | 1.04 |
| RFK 45 | 1-dose | Rufunsa | -4.86 | 5.17 | 59.86 | 27.49 | 31.25 | 15.14 | 0.90 | 1.65 |  | 1.65 | 1.65 | 0.90 | 1.34 |
| RFK 18 | 2-dose | Rufunsa | -3.42 | 0.91 | 57.52 | 87.87 | 79.91 | 83.71 | 0.60 | 1.20 |  | 1.81 | 1.95 | 1.65 | 1.81 |
| RFK 21 | 2-dose | Rufunsa | -5.35 | -1.79 | 85.04 | 97.68 | 92.30 | 87.13 | 0.60 | 1.51 |  | 2.25 | 2.71 | 2.25 | 1.65 |
| RFK 25/28 | 2-dose | Rufunsa | -4.40 | -7.91 | 37.96 | 97.87 | 28.28 | 5.27 | 0.60 | 1.34 |  | 1.04 | 1.34 | 1.20 | 1.04 |
| RFK 43 | 2-dose | Rufunsa | -1.88 | -3.64 | -1.67 | 97.17 | 94.37 | 57.91 | 0.60 | 1.81 |  | 1.65 | 2.71 | 1.51 | 1.20 |
| RFK 44 | 2-dose | Rufunsa | -2.93 | -3.90 | 48.21 | 52.35 | 85.04 | 90.01 | 1.51 | 1.20 |  | 1.34 | 1.34 | 1.65 | 2.11 |
| *CSM CC1* | *Control* | *Chisamba* |  |  |  |  |  |  | 1.20 |  |  | 1.65 | 1.04 |  | 0.60 |
| *CSM CC6* | *Control* | *Chisamba* |  |  |  |  |  |  | 0.60 |  |  | 1.04 | 0.60 |  | 0.90 |
| *CSM CC8* | *Control* | *Chisamba* |  |  |  |  |  |  | 0.60 |  |  | 0.60 | 0.60 |  | 0.60 |
| *CSM CC9* | *Control* | *Chisamba* |  |  |  |  |  |  | 0.90 |  |  | 1.04 | 0.90 |  | 1.04 |
| CSM C1 | 1-dose | Chisamba | 3.90 |  | 3.81 | 11.92 | 8.19 | -4.76 | 0.60 |  |  | 1.04 | 0.60 | 0.60 | 0.60 |
| CSM C2 | 1-dose | Chisamba | -0.56 |  | -0.17 | 34.08 | 30.78 | 18.23 | 0.60 |  |  | 1.04 | 0.60 | 0.60 | 1.04 |
| CSM C4 | 1-dose | Chisamba | -1.42 |  | -3.95 | 31.06 | 2.65 | 10.46 | 0.60 |  |  | 1.04 | 1.04 | 1.04 | 0.60 |
| CSM C5 | 1-dose | Chisamba | 3.01 |  | 68.64 | 57.65 | 8.04 | 41.47 | 0.60 |  |  | 1.34 | 1.20 | 1.04 | 0.90 |
| CSM C6 | 1-dose | Chisamba | 2.44 |  | 38.08 | 6.26 | -3.50 | 17.20 | 1.65 |  |  | 1.04 | 1.04 | 0.60 | 1.20 |
| CSM C7 | 1-dose | Chisamba | 2.00 |  | 1.42 | 31.21 | 9.86 | 2.01 | 0.60 |  |  | 1.51 | 0.90 | 0.60 | 0.60 |
| CSM C8 | 1-dose | Chisamba | 6.64 |  | 28.11 | 90.55 | 44.85 | 65.51 | 0.60 |  |  | 1.81 | 1.51 | 1.65 | 1.20 |
| CSM C9 | 1-dose | Chisamba | 6.43 |  | 2.81 | 2.16 | -2.64 | -5.26 | 0.60 |  |  | 1.04 | 0.60 | 0.60 | 0.90 |
| CSM C10 | 1-dose | Chisamba | 4.23 |  | -1.28 | 15.49 | 28.54 | 19.41 | 1.20 |  |  | 1.51 | 1.04 | 1.04 | 1.04 |
| CSM 4 | 2-dose | Chisamba | -1.15 |  | 18.82 | 88.21 | 23.34 | 2.07 | 0.60 | 0.60 | 0.90 | 1.04 | 1.65 | 1.04 | 0.60 |
| CSM 8 | 2-dose | Chisamba | -1.66 |  | 43.20 | 74.15 | 59.93 | 66.79 | 0.60 | 1.04 | 1.81 | 1.95 | 1.51 | 1.81 | 1.81 |
| CMS 14 | 2-dose | Chisamba | 2.47 |  | 14.22 | 90.00 | 41.71 | 65.93 | 0.60 | 1.04 | 1.81 | 1.20 | 1.95 | 1.34 | 1.20 |
| CSM 15 | 2-dose | Chisamba | 1.29 |  | -1.54 | 90.64 | 50.88 | 34.48 | 1.04 | 1.04 | 1.34 | 1.04 | 2.11 | 1.04 | 1.04 |
| CSM 16 | 2-dose | Chisamba | 3.75 |  | 2.00 | 92.49 | 55.59 | 42.80 | 0.60 | 0.90 | 1.34 | 1.34 | 1.95 | 1.34 | 1.65 |
| CSM 17 | 2-dose | Chisamba | 0.19 |  | 3.63 | 96.34 | 90.46 | 86.55 | 0.90 | 1.04 | 1.04 | 1.34 | 2.71 | 2.25 | 1.65 |
| CSM 22 | 2-dose | Chisamba | 0.27 |  | 3.40 | 97.35 | 38.69 | 40.04 | 0.90 | 1.04 | 1.34 | 1.51 | 2.55 | 1.95 | 2.55 |
| CSM 24 | 2-dose | Chisamba | 0.54 |  | 28.19 | 98.18 | 95.75 | 97.70 | 1.04 | 0.60 | 1.04 | 1.04 | 1.34 | 0.90 | 1.04 |
| CSM 25 | 2-dose | Chisamba | 3.90 |  | 6.37 | 86.03 | 88.67 | 87.45 | 0.90 | 0.90 | 1.20 | 1.20 | 2.41 | 1.65 | 1.34 |

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|  | SPCE |  | VNT |
|  | < 70 (1:10) |  | ≤ 1.04 |
|  | ≥ 70 (1:10); < 80 (1:10) |  | > 1.04; < 1.51 |
|  | ≥ 80 (1:10); < 50 (1:30) |  | = 1.51 |
|  | ≥ 80 (1:10); ≥ 50 and < 80 (1:30) |  | > 1.51 |
|  | ≥ 80 (1:10); ≥ 80 (1:30) |  |  |