**Appendix A**

 **Supplementary Table 1. Environmental risk factors for RVFV seropositivity**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Total sampled, N = 1,7501 (%)** | **No. Negative = 1,7161 (%)** | **No. Positive = 341 (%)** | **Seropositivity rate (%)** | **p-Value** |
| Presence of mosquitoes  |  |  |  | 0.5 |
|     No | 289 (16.5) | 285 (16.6) | 4 (11.8) | 1.38 |  |
|     Yes | 1,461 (83.5) | 1,431 (83.4) | 30 (88.2) | **2.05** |  |
| Use of treated mosquito net |  |  |  | 0.8 |
|     No | 1,589 (90.8) | 1,557 (90.7) | 32 (94.1) | 2.01 |  |
|     Yes | 161 (9.2) | 159 (9.3) | 2 (5.9) | 1.24 |  |
| Use of repellant |  |  |  |  | 0.3 |
|     No | 1,654 (94.5) | 1,620 (94.4) | 34 (100.0) | 2.06 |  |
|     Yes | 96 (5.5) | 96 (5.6) | 0 (0.0) | 0.00 |  |
| No mosquito prevention |  |  |  | 0.3 |
|     No | 659 (37.7) | 649 (37.8) | 10 (29.4) | 1.52 |  |
|     Yes | 1,091 (62.3) | 1,067 (62.2) | 24 (70.6) | **2.20** |  |
| Presence of quarry |  |  |  | <0.001\* |
|     No | 953 (54.5) | 944 (55.0) | 9 (26.5) | 0.94 |  |
|     Yes | 797 (45.5) | 772 (45.0) | 25 (73.5) | **3.14** |  |
| Presence of swamp |  |  |  | 0.006\* |
|     No | 975 (55.7) | 964 (56.2) | 11 (32.4) | 1.13 |  |
|     Yes | 775 (44.3) | 752 (43.8) | 23 (67.6) | **2.97** |  |
| Flooding in past 2 months |  |  |  | 0.7 |
|     No | 1,667 (95.3) | 1,635 (95.3) | 32 (94.1) | 1.92 |  |
|     Yes | 83 (4.7) | 81 (4.7) | 2 (5.9) | **2.41** |  |
| Wildlife in proximity |  |  |  |  | 0.002\* |
|     No | 1,012 (57.8) | 1,001 (58.3) | 11 (32.4) | 1.09 |  |
|     Yes | 738 (42.2) | 715 (41.7) | 23 (67.6) | **3.12** |  |
| Presence of irrigation scheme |  |  |  | >0.9 |
|     No | 1,595 (91.1) | 1,564 (91.1) | 31 (91.2) | 1.94 |  |
|     Yes | 155 (8.9) | 152 (8.9) | 3 (8.8) | 1.94 |  |
| Travel outside residential area |  |  |  | 0.3 |
|     No | 1,543 (88.2) | 1,515 (88.3) | 28 (82.4) | 1.81 |  |
|     Yes | 207 (11.8) | 201 (11.7) | 6 (17.6) | **2.90** |  |
| Use Rainwater in household |  |  |  | 0.001\* |
|     No | 1,080 (61.7) | 1,068 (62.2) | 12 (35.3) | 1.11 |  |
|     Yes | 670 (38.3) | 648 (37.8) | 22 (64.7) | **3.28** |  |

*1 n (%); 2 Pearson’s Chi-squared test; Fisher’s exact test, \*Statistically significant*

**Appendix B**

## **Supplementary Table 2. Livestock risk factors for RVFV seropositivity**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Characteristic** | **Total sampled N = 1,7501 (%)** | **No. Negative = 1,7161 (%)** | **No. Positive = 341 (%)** | **Seropositivity rate (%)** | **p-value2** |
| **Livestock contact by species** |  |  |  | 0.5 |
|     Cattle, sheep and goats | 1,073 (61.3) | 1,047 (61.0) | 26 (76.5) | 2.42 |  |
|     Cattle only | 378 (21.6) | 372 (21.7) | 6 (17.6) | 1.59 |  |
|     Goats only | 176 (10.1) | 174 (10.1) | 2 (5.9) | 1.14 |  |
|     Sheep and goats | 10 (0.6) | 10 (0.6) | 0 (0.0) | 0.00 |  |
|     Sheep only | 8 (0.5) | 8 (0.5) | 0 (0.0) | 0.00 |  |
|     None | 105 (6.0) | 105 (6.1) | 0 (0.0) | 0.00 |  |
| **Livestock species kept** |  |  |  | 0.6 |
|     Cattle and goats | 572 (32.7) | 557 (32.5) | 15 (44.1) | 2.62 |  |
|     Cattle only | 423 (24.2) | 417 (24.3) | 6 (17.6) | 1.42 |  |
|     Cattle, sheep and goats | 56 (3.2) | 55 (3.2) | 1 (2.9) | 1.79 |  |
|     Goats only | 277 (15.8) | 271 (15.8) | 6 (17.6) | 2.17 |  |
|     Cattle and sheep | 19 (1.1) | 18 (1.0) | 1 (2.9) | 5.26 |  |
|     Sheep only | 13 (0.7) | 13 (0.8) | 0 (0.0) | 0.00 |  |
|     None | 364 (20.8) | 359 (20.9) | 5 (14.7) | 1.37 |  |
| **Abortion in herds** |  |  |  |  | 0.002\* |
|     No | 1,626 (92.9) | 1,600 (93.2) | 26 (76.5) | 1.60 |  |
|     Yes | 124 (7.1) | 116 (6.8) | 8 (23.5) | **6.45** |  |
| **Drink raw milk** |  |  |  |  | 0.017\* |
|     No | 1,721 (98.3) | 1,690 (98.5) | 31 (91.2) | 1.80 |  |
|     Yes | 29 (1.7) | 26 (1.5) | 3 (8.8) | **10.34** |  |
| **Eat wild meat** |  |  |  |  | 0.13 |
|     No | 1,650 (94.3) | 1,620 (94.4) | 30 (88.2) | 1.82 |  |
|     Yes | 100 (5.7) | 96 (5.6) | 4 (11.8) | **4.00** |  |

*1 n (%); 2 Pearson’s Chi-squared test; Fisher’s exact test, \*Statistically significant*

**Appendix C**

## **Supplementary Table 3. Predictor variables collected and their measurements**

|  |  |
| --- | --- |
| **Variable (Type)** | **Measurement** |
| Healthcare facility (nominal) | Assessed in two levels: Kandara & Kigetuini |
| Study wards (nominal) | Assessed in three levels: Mbiri, Gaturi & Township |
| Age (continuous) | Captured in years |
| Sex (nominal) | Entered as male or female |
| Marital status (nominal) | Assessed in five levels: single, separated, divorced, NA(Child), married |
| Occupation type (nominal) | Assessed in five levels: Farmer, Butcher, formal, unskilled, other |
| Education levels (nominal) | Assessed in two levels: Formal and Informal  |
| Travel out of residential area | Assessed in two levels: Yes or No |
| Type of close contact  |  |
| Herding | Assessed in two levels: Yes or No |
| Milking | Assessed in two levels: Yes or No |
| Birthing | Assessed in two levels: Yes or No |
| Slaughter | Assessed in two levels: Yes or No |
| Cleaning animal barns | Assessed in two levels: Yes or No |
| Feeding animals | Assessed in two levels: Yes or No |
| Sharing same room with animals | Assessed in two levels: Yes or No |
| Spraying animals | Assessed in two levels: Yes or No |
| Treating animals | Assessed in two levels: Yes or No |
| Slaughter of dead animals | Assessed in two levels: Yes or No |
| Contact with animals | Assessed in two levels: Yes or No |
| Animal species with close contact (nominal) | Assessed in three levels: cattle, sheep and goats |
| Drink raw milk | Assessed in two levels: Yes or No |
| Eat raw meat | Assessed in two levels: Yes or No |
| Eat wild meat | Assessed in two levels: Yes or No |
| Presence of mosquitoes in area | Assessed in two levels: Yes or No |
| Types of mosquito prevention  | Assessed in five levels: mosquito net, repellant, clearing bushes, other, none |
| Mosquito prevention  | Assessed in two levels: Yes or No |
| Own livestock | Assessed in two levels: Yes or No |
| Type of livestock owned | Assessed in three levels: cattle, sheep, goats |
| Proximity to wildlife, swamps or irrigation schemes  | Assessed in two levels: Yes or No |
| Sources of household water | Assessed in four levels: piped, well, river, rainwater and bottled water |
| RVFV seropositivity | 0=negative, 1=positive |
| Livestock abortion reports | Assessed in two levels: Yes or No |
| Livestock death reports | Assessed in two levels: Yes or No |
| Presence of flooding | Assessed in two levels: Yes or No |
| Presence of heavy rainfall in the area | Assessed in two levels: Yes or No |
| Livestock  |
| Study wards (nominal) | Assessed in three levels: Mbiri, Gaturi & Township |
| Age (nominal) | Assessed in three levels: Adults, juveniles, infants |
| Sex (nominal) | Entered as male or female |
| Breed | Assessed in three levels: exotic, indigenous, cross |
| Species | Assessed in three levels: Cattle, sheep and goats |
| RVFV vaccination status | Assessed in two levels: Yes, No |
| Herd size | Assessed in two levels: 1-5 animals, > 5 animals |
| Yearling suckling status  | Assessed in two levels: Yes, No |
| Presence of livetsock abortions | Assessed in two levels: Yes, No |
| Ill health in livetsock  | Assessed in two levels: Yes, No |
| Presence of livestock still deaths  | Assessed in two levels: Yes, No |
| Livetsock production system type  | Assessed in three levels: intensive, semi-intensive, extensive |