

**Figure A** Human Biting Rate (HBR, number of *Anopheles* sampled per man and per night, bars) and Entomological Inoculation Rate (EIR, number of infected *Anopheles* sampled per man and per night, dotted lines) in *A. funestus* (red) and *An. gambiae* (green) sampled each month from Jan 2006 to Dec 2011, before and after the implementation of long lasting insecticide treated nets (LLINs).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | Man night | *An. funestus* | *An. gambiae s.l.* | *An. nili* | *An. pharoensis* | *An. wellcomei* | *An. ziemanni* |
| 2006 | 116 | 3266 | 1112 | 1 | 9 |  | 5 |
| 2007 | 96 | 1085 | 1053 |  | 8 |  | 1 |
| 2008 | 104 | 300 | 1450 |  | 34 |  | 2 |
| 2009 | 140 | 155 | 2399 |  | 39 |  | 78 |
| 2010 | 144 | 122 | 1870 |  | 21 | 10 | 18 |
| 2011 | 144 | 262 | 971 |  | 10 | 5 | 6 |
| Total | **744** | **5190** | **8855** | **1** | **121** | **15** | **110** |

**SI Table 1.** Number of specimens of each *Anopheles* species sampled during monthly human landing catches indoor and outdoor from 2006 to 2011.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | *An. gambiae s.l.* | Total genotyped | kdr genotype | R allelic frequency | Sub-species |
| RR | RS | SS | *An. arabiensis* | *An. coluzzii* | *An. gambiae S* |  *Hybrids\**  |
| 2006 | 1112 | 206 |  | 9 (4.4%) | 197 (95.6%) | 2.18 | 21 (10.2%) | 31 (15.0 %) | 154 (74.8%) |  |
| 2007 | 1053 | 150 |  | 8 (5.3%) | 142 (94.7%) | 2.67 | 21 (14.0%) | 27 (18.0%) | 99 (66.0%) | 3 (2.0%) |
| 2008 | 1450 | 294 |  | 21 (7.1%) | 273 (92.9%) | 3.57 | 89 (30.5%) | 117 (40.1%) | 86 (29.5%) |  |
| 2009 | 2399 | 288 | 5 (1.7%) | 46 (16.0%) | 237 (82.3%) | 9.72 | 105(36.5%) | 84 (29.2%) | 99 (34.4%) |  |
| 2010 | 1870 | 313 | 23 (7.3%) | 99 (31.6%) | 191 (61.0%) | 23.16 | 82 (26.2%) | 72 (23.0%) | 159 (50.8%) |  |
| 2011 | 971 | 243 | 27 (7.3%) | 96 (39.5%) | 120 (49.4%) | 30.86 | 49 (20.2%) | 50 (20.6%) | 144 (59.3%) |  |
| Total | **8855** | **1494** | **55 (11.1%)** | **279 (18.7%)** | **1160 (77.6%)** | **13.02** | **367 (24.6%)** | **381 (25.5%)** | **741 (49.7%)** | **3 (0.2%)** |

**SI Table 2.** Number of *An. gambiae* sampled and genotyped for (1) L1014F mutation (kdr) with heterozygote (RS), homozygote (RR), wild type (SS) and L1014F (R) allelic frequency (%), (2) *An. arabiensis, An. coluzzii* and *An. gambiae* S.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | *An. arabiensis* | *An. Coluzzii* | *An. gambiae S* | Kdr genotype |
| RR | RS | SS |
| *Blood Origin* | *Blood Origin* | *Blood Origin* | *Blood Origin* | *Blood Origin* | *Blood Origin* |
| Human | Animal | Human | Animal | Human | Animal | Human | Animal | Human | Animal | Human | Animal |
| 2006 | 25 | 9 | 30 | 7 | 37 | 5 |  |  | 1 |  | 91 | 21 |
| 2007 | 23 | 9 | 35 | 9 | 41 | 7 |  |  | 3 |  | 96 | 25 |
| 2008 | 25 | 16 | 26 | 20 | 40 | 18 |  |  | 8 | 2 | 83 | 51 |
| 2009 | 10 | 23 | 22 | 31 | 35 | 26 | 3 |  | 17 | 6 | 47 | 73 |
| 2010 | 4 | 15 | 20 | 17 | 45 | 17 | 7 |  | 28 | 7 | 34 | 42 |
| 2011 | 6 | 17 | 16 | 10 | 34 | 6 | 8 |  | 26 | 8 | 22 | 25 |
| HBI (%) | 51.10% | 61.32% | 74.6% | 100% | 78.3% | 64.5% |

**SI Table 3.** Number of *An. gambiae* collected 2006 to 2011 by pyrethrum spray catch (PSC) and genotyped for (1) L1014F mutation (kdr) with heterozygote (RS), homozygote (RR), wild type (SS) and the mean of human blood index (%), (2) *An. arabiensis, An. coluzzii* and *An. gambiae* S.

|  |  |  |  |
| --- | --- | --- | --- |
| Years | Number of gametocytes | Gametocyte prevalence rate | Proportion of *P. falciparum* infections with gametocytes |
| 2006 | 6.29 ± 1.60 | 7.05 (66/936) | 22.6 (66/292) |
| 2007 | 3.78 ± 1.11 | 5.49 (49/892) | 22.1 (49/222) |
| 2008 | 7.19 ± 3.63 | 2.59 (32/1236) | 26.5 (32/121) |
| 2009 | 5.56 ± 3.09 | 1.25 (16/1285) | 33.3 (16/48) |
| 2010 | 6.00 ± 2.53 | 1.07 (13/1220) | 46.4 (13/28) |
| 2011 | 43.25 ± 29.7 | 0.75 (8/1067) | 42.1 (8/19) |

**SI Table 4.** Number of *P. falciparum* gametocytes per 200 oil immersion fields in gametocyte positive slides (mean ± standard error of the mean), gametocyte prevalence (% and number of villagers with gametocytes / total villagers examined), and proportion of *P. falciparum* infections with gametocytes (% and number of villagers with gametocytes / number of villagers with *P. falciparum* infection). Dielmo, quarterly transversal surveys, 2006-2011.