**Supplementary material**

**Table S1:** Ovitrap index and mean larvae per recovered ovitrap overall and by species according to location following intervention in the study areas

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study area** |  | **Ovitrap index (%)** | | | **Mean larvae Index (SD)** | | |
|
|  |  | Overall | *Ae. aegypti* | *Ae. albopictus* | Overall | *Ae. aegypti* | *Ae. albopictus* |
| **Control** |  |  |  |  |  |  |  |
| Semi-indoor |  | 55.1 | 52.2 | 10.3 | 21.4(33.5) | 19.7(32.6) | 1.6(6.5) |
| Outdoor |  | 78.7 | 32.0 | 65.3 | 38.3(48.2) | 8.7(23.1) | 29.6(43.3) |
| **TORS** |  |  |  |  |  |  |  |
| Semi-indoor |  | 39.4 | 34.4 | 9.5 | 8.9(17.9) | 8.1(17.2) | 0.7(3.1) |
| Outdoor |  | 77.6 | 28.0 | 69.6 | 36.8(45.2) | 11.2(32.8) | 25.6(32.7) |
| **ADT** |  |  |  |  |  |  |  |
| Semi-indoor |  | 51.0 | 45.9 | 10.8 | 14.2(24.0) | 12.8(23.6) | 1.4(5.8) |
| Outdoor |  | 57.9 | 15.0 | 45.1 | 21.2(35.6) | 4.1(14.5) | 17.2(34.5) |
| **TORS+ADT** |  |  |  |  |  |  |  |
| Semi-indoor |  | 65.5 | 60.2 | 15.0 | 30.2(45.2) | 27.8(43.6) | 2.4(9.6) |
| Outdoor |  | 71.6 | 35.4 | 53.5 | 30.3(44.1) | 14.2(37.9) | 16.1(27.5) |

**Figure S1**: Larvea index and rainfall (mm) per week during the baseline (red) and the

intervention period (blue) in study sites



**Table S2**: Estimate of outdoor and semi-indoor (overall and by species) ovitrap index (OI) differences in comparison to the control site according to the intervention period

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study area** | **Period 1** | | **Period 2** | |
|  | **Difference in OI (%) relative**  **to control\* (95% CI)** | **p-value** | **Difference in OI (%) relative**  **to control\* (95% CI)** | **p-value** |
| **Overall** |  |  |  |  |
| **TORS** | -0.66 (-10.5, 9.2) | 0.89 | -13.1 (-21.9, +4.2) | 0.004 |
| **ADT** | -4.7 (-13.9, +4.7) | 0.32 | -12.3 (-21.5, +3.2) | 0.008 |
| **TORS+ADT** | +7.9 (-1.4, +17.3) | 0.09 | -4.8 (-14.3, +4.7) | 0.32 |
| ***Ae. aegypti*** |  |  |  |  |
| **TORS** | -8.9 (-18.2, +0.3) | 0.06 | -12.6 (-23.2, -1.9) | 0.02 |
| **ADT** | -5.9 (-15.1, +3.2) | 0.20 | -12.4 (-21.9, -2.7) | 0.01 |
| **TORS+ADT** | +10.1 (-0.3, +20.5) | 0.06 | -0.8 (-11.8, +10.3) | 0.89 |
| ***Ae. albopictus*** |  |  |  |  |
| **TORS** | +10.8 (+2.8, +18.8) | 0.008 | -2.0 (-10.0, +5.9) | 0.62 |
| **ADT** | -0.2 (-7.3, +6.9) | 0.95 | -8.4 (-16.1, -0.6) | 0.03 |
| **TORS+ADT** | +3.6 (-4.5, +11.7) | 0.38 | -10.7 (-19.-, -1.7) | 0.02 |

Period 1: The first 5 weeks of intervention; Period 2: the second five weeks of intervention

\* Adjusted for baseline larvae index and for ovitrap location

**Table S3:** Estimate of outdoor and semi-indoor (overall and by species) mean larvae index relative differences in comparison to the control site according to the intervention period

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study area** | **Period 1** | | **Period 2** | |
|  | **Relative difference (%)\* (95% CI)** | **p-value** | **Relative difference (%)\* (95% CI)** | **p-value** |
| **Overall** |  |  |  |  |
| **TORS** | -17.9 (-41.9, +15.8) | 0.26 | -42.2 (-56.0, -24.1) | <0.0001 |
| **ADT** | -22.1 (-43.7, +7.9) | 0.13 | -43.2 (-55.9, -26.6) | <0.0001 |
| **TORS+ADT** | +33.6 (-9.1, +96.4) | 0.14 | -15.7 (-39.2, +16.9) | 0.31 |
| ***Ae. aegypti*** |  |  |  |  |
| **TORS** | -32.6 (-63.4, +24.1) | 0.21 | -24.8 (-53.1, +20.6) | 0.24 |
| **ADT** | -19.9 (-47.4, +21.9) | 0.30 | -45.9 (-60.7, -25.6) | 0.0002 |
| **TORS+ADT** | +78.6(+8.7, +193.5) | 0.02 | +7.8 (-28.1, +61.5) | 0.72 |
| ***Ae. albopictus*** |  |  |  |  |
| **TORS** | -12.0 (-50.7, +57.0) | 0.66 | -39.0 (-61.8, -2.8) | 0.04 |
| **ADT** | 23.4 (-39.3, 150.9) | 0.57 | -48.5 (-69.9, -11.8) | 0.02 |
| **TORS+ADT** | -3.4 (-51.6, 92.9) | 0.92 | -19.8 (-57.6, +51.6) | 0.49 |

Period 1: The first 5 weeks of intervention; Period 2: the second five weeks of intervention

\*Adjusted for baseline larvae index and for ovitrap location

**Table S4:** Estimated difference in ovitrap index (OI) according to the location strategy of autodissemination traps (ADT), taking strategy C as reference (results of the modified ordinary least squares regression model)\*

|  |  |  |  |
| --- | --- | --- | --- |
| **Location strategy** | **Difference in OI relative to strategy C** | **95% CI (%)** | **p-value** |
| **TORS+ADT and ADT sites\*** |  |  |  |
| **Strategy A** | +10.6% | +0.02, +21.8 | 0.05 |
| **Strategy B** | +18.2% | +7.4, +29.0 | 0.001 |
| **ADT site\*\*** |  |  |  |
| **Strategy A** | +16.1% | +1.95, +30.3 | 0.03 |
| **Strategy B** | +16.5% | +0.38, +32.6 | 0.04 |
| **TORS+ADT site\*\*** |  |  |  |
| **Strategy A** | +2.5% | -11.5, +16.6 | 0.72 |
| **Strategy B** | +19.4% | + 7.2, +31.6 | 0.002 |

OI: ovitrap index, CI: confidence interval

\*adjusted for baseline larvae index and site

\*\*adjusted for baseline larvae index

**Table S5**: Characteristics individuals that completed the survey

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Site | Control | TORS | ADT | TORS+ADT |
| Mean age | 38.5 | 39.9 | 43.2 | 42.7 |
| Male % | 43.2 | 33.3 | 31.2 | 32.6 |
| Ethnicity (%)  Malay  Chinese  Indian  Others  missing | 96.7  0.5  1.4  0.7  0.7 | 76.0  0.0  19.9  3.5  0.6 | 3.3  45.9  45.9  4.9  0 | 94.9  0.0  1.0  4.1 |
| Education level (%)  Primary school  Secondary school  Vocational/technical  College/university  Others  Missing | 9.5  73.2  4.7  7.4  2.4  2.8 | 18.3  49.1  2.3  26.3  0.6  3.5 | 11.5  57.4  3.3  22.9  1.6  3.3 | 28.6  53.1  3.1  9.2  4.1  2.0 |
| Occupation (%)  Unemployed  Government sector  Private sector  Retired  Missing | 50.8  2.4  40.1  3.6  3.1 | 46.2  7.0  42.1  3.5  1.2 | 47.5  0  45.9  6.6  0.0 | 62.2  1.0  32.6  3.1  1.0 |
| Monthly household income  B40: below US$720  M40: US$720-1440  T20: >US$1440  Missing | 76.0  9.7  0.5  13.8 | 68.9  23.9  1.2  5.8 | 50.8  42.7  3.3  3.3 | 83.7  9.2  2.0  5.1 |
| Status of housing (%)  Own  Rent  Missing | 10.4  85.9  3.6 | 47.9  50.9  1.2 | 68.8  31.2  0.0 | 70.4  29.6  0.0 |
| Total family number (%)  2 and below  3-4  5 and above  Missing | 7.4  38.0  50.4  4.3 | 11.7  41.5  46.2  0.6 | 22.9  39.3  37.7  0.0 | 15.3  34.7  50.0  0.0 |