

and inside residual spraying (“IRS”) in two villages: two rounds house sprays with lambdacyhalothrin followed by installation of ITPS. The first five years evaluation involved entomology, parasitology and immunology. The entomological evaluation included two steps: two years before vector control implementation and three years after. Entomological evaluation was based upon regular use, every two months, of classical CDC Light Trap (“CDC LT”) in ten inhabited houses (one trap per house, always the same). CDC LT were recently used to estimation of entomological inoculation rate in Tanzania (Mboera, 2005) and elsewhere (Service, 1970; Service, 1977).

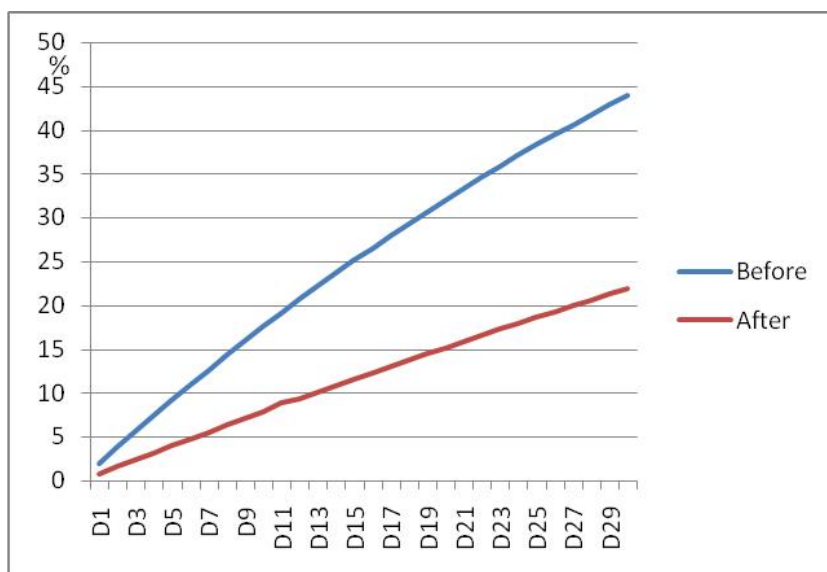
Anopheles were isolated from the samples of the CDC LT; determined at species level *in situ* then further biological analysis were performed in OCEAC Organization (Yaoundé, Cameroon) to precise species of the *Anopheles gambiae* complex and Elisa tests were performed to precise the infectivity of species caught (Beier *et al.*, 1987; Wirtz *et al.*, 1987). The biotope, methods, first entomological parasitological results were already published (Carnevale *et al.*, 2024), and first immunological data were already published (Brosseau *et al.*, 2012). Bruce-Chwatt (1985), considered that sampling inside house will give information of the entomological inoculation rate “at house level”. Thus, was decided to use the Birley’s formula $h = 1 - (1 - s)^{ma.t}$ to estimate the evolution of risks in houses of the villages according to the duration of stay (in days) and each of the four method of vector control.

3 Results

A total of 202 catching sessions with CDC Light Traps were conducted in the eight villages, representing 1,880 trap-nights, which caught 1,153 *Anopheles* specimens, belonging to 11 taxa including nine species and one species complex, *Gambiae*. *An. gambiae* and *An. funestus* only were considered as the main vectors (“MV”) for further analysis.

3.1 Evolution of risks before, and after, LLINs full coverage

With full coverage in LLINs the number of main vectors per trap decreased from 0.67 to 0.26 and the sporozoite index slightly changed from 2.83% to 3.08%. With these data in the Birley’s formula it is possible to calculate the risk of receiving an infective bite in sleeping one day, one week, one month (Graph 1a and 1b), one year (Graph 1c) in a house without, then with LLINs.



Graph 1a Evolution of the daily risk, in one month, of receiving an infective bite of the main vector of malaria in a house before and after installation of LLINs. (D= number of days)