Variation in Malaria Transmission Dynamics in Three Different Sites in Western Kenya (2012)

1 Laboratory of Entomology, Wageningen University, EH Wageningen, The Netherlands
2 Kenya Medical Research Institute, Centre for Global Health Research,
3* School of Applied Sciences and Technology, Kenya Polytechnic University College,
4 International Centre of Insect Physiology and Ecology,
5 School of Biological Sciences, University of Nairobi

Abstract
The main objective was to investigate malaria transmission dynamics in three different sites, two highland villages (Fort Ternan and Lunyerere) and a lowland peri-urban area (Nyalenda) of Kisumu city. Adult mosquitoes were collected using PSC and CDClight trap while malaria parasite incidence data was collected from a cohort of children on monthly basis. Rainfall, humidity and temperature data were collected by automated weather stations. Negative binomial and Poisson generalized additive models were used to examine the risk of being infected, as well as the association with the weather variables. Anopheles gambiae s.s. was most abundant in Lunyerere, An. arabiensis in Nyalenda and An. funestus in Fort Ternan. The CDC light traps caught a higher proportion of mosquitoes (52.3%) than PSC (47.7%), although not significantly different (P = 0.689). The EIR’s were 0, 61.79 and 6.91 bites/person/year for Fort Ternan, Lunyerere and Nyalenda. Site, month and core body temperature were all associated with the risk of having malaria parasites (P < 0.0001). Rainfall was found to be significantly associated with the occurrence of P. falciparum malaria parasites, but not relative humidity and air temperature. The presence of malaria parasite-infected children in all the study sites provides evidence of local malaria transmission.

See more at: https://www.hindawi.com/journals/jtm/2012/912408/ref/