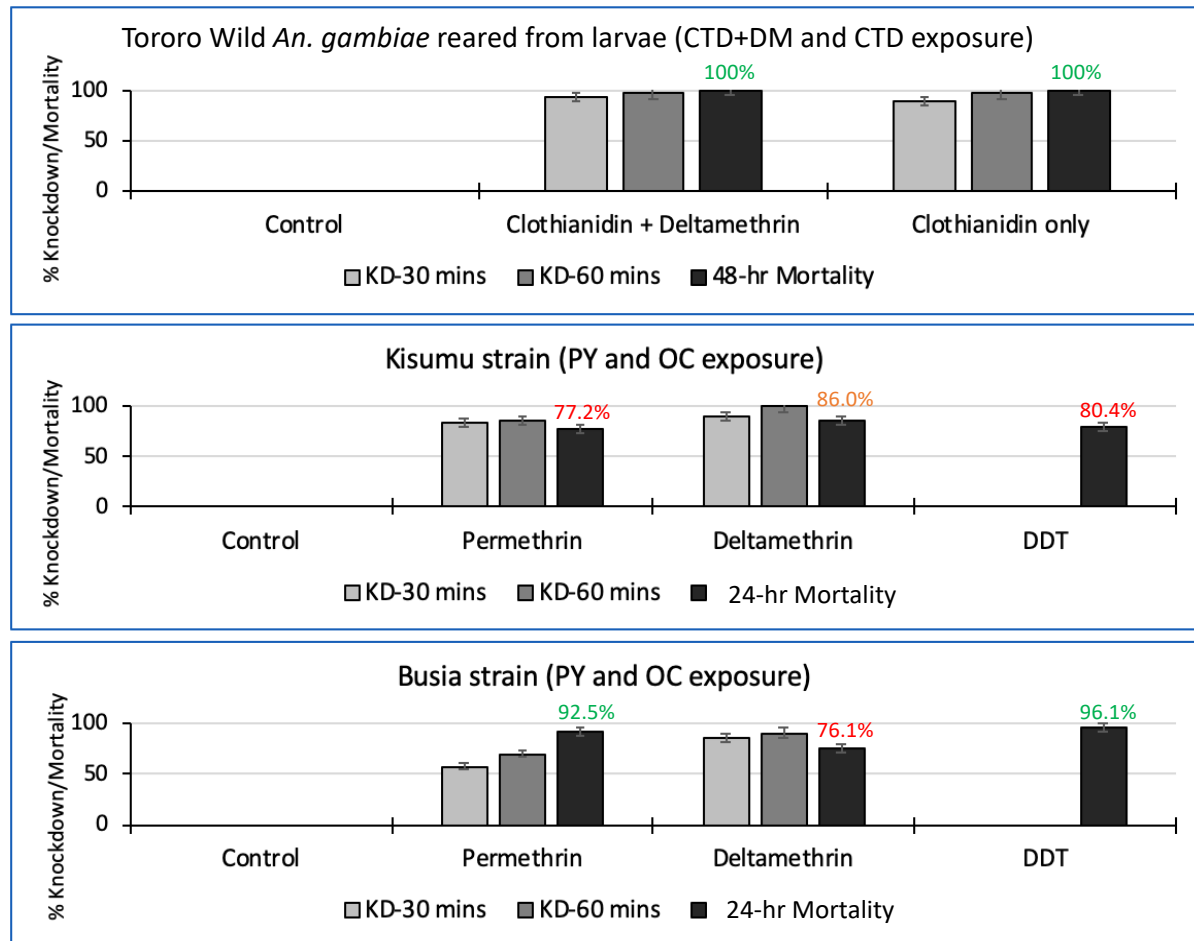


Supplementary material

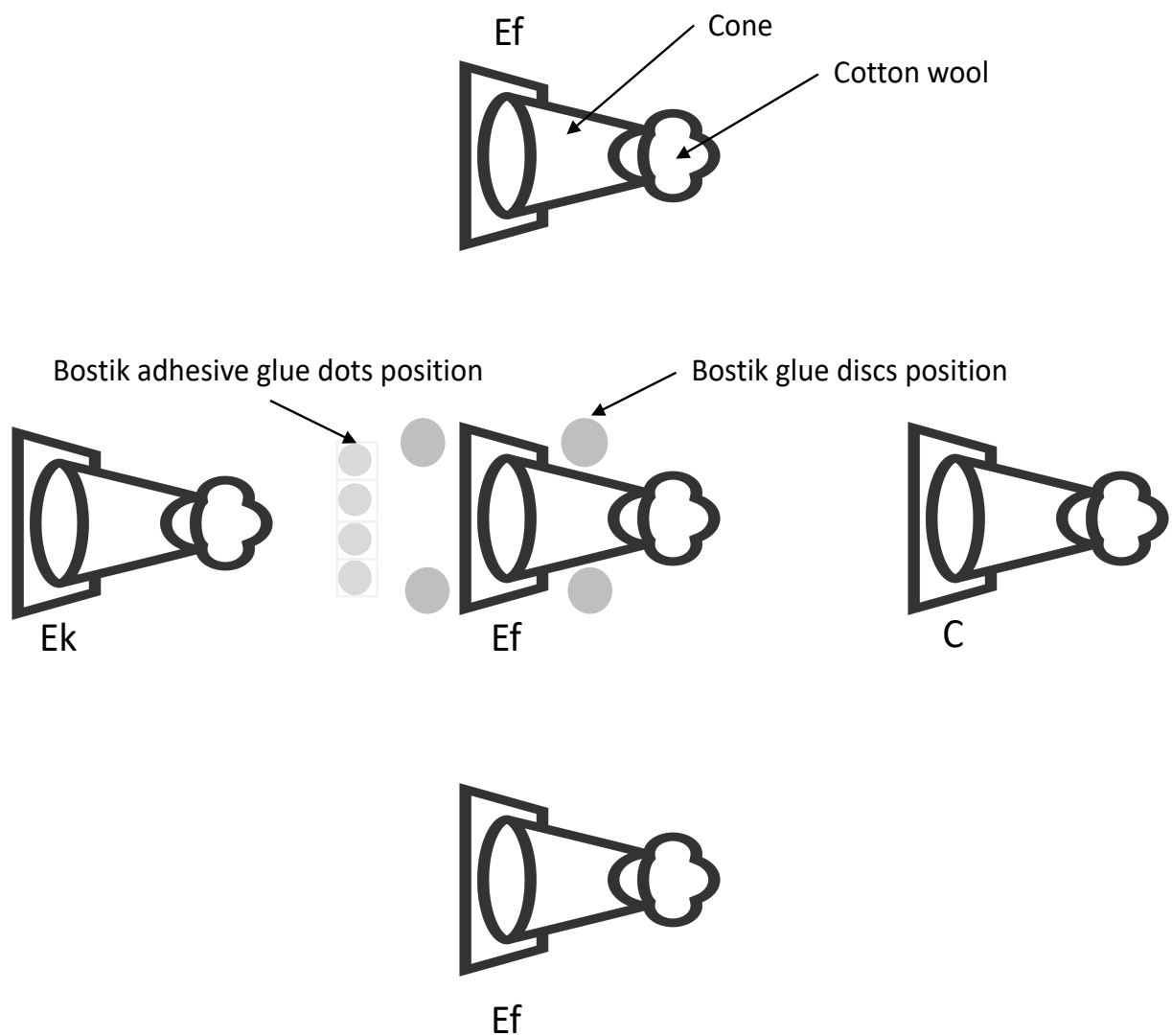
Supplementary Table. 1 HPLC methods for different active ingredients.

	Active Ingredient	
	Pirimiphos Methyl	Clothianidin
Injection Volume	20 µL	20 µL
Mobile Phase	70:30 Acetonitrile: Water	93:7 Acetonitrile: Water with 0.1% phosphoric acid
Flow Rate	1 mL/min	1 mL/min
Run Time	22 min	9 min
Wavelength	232 nm	232 nm

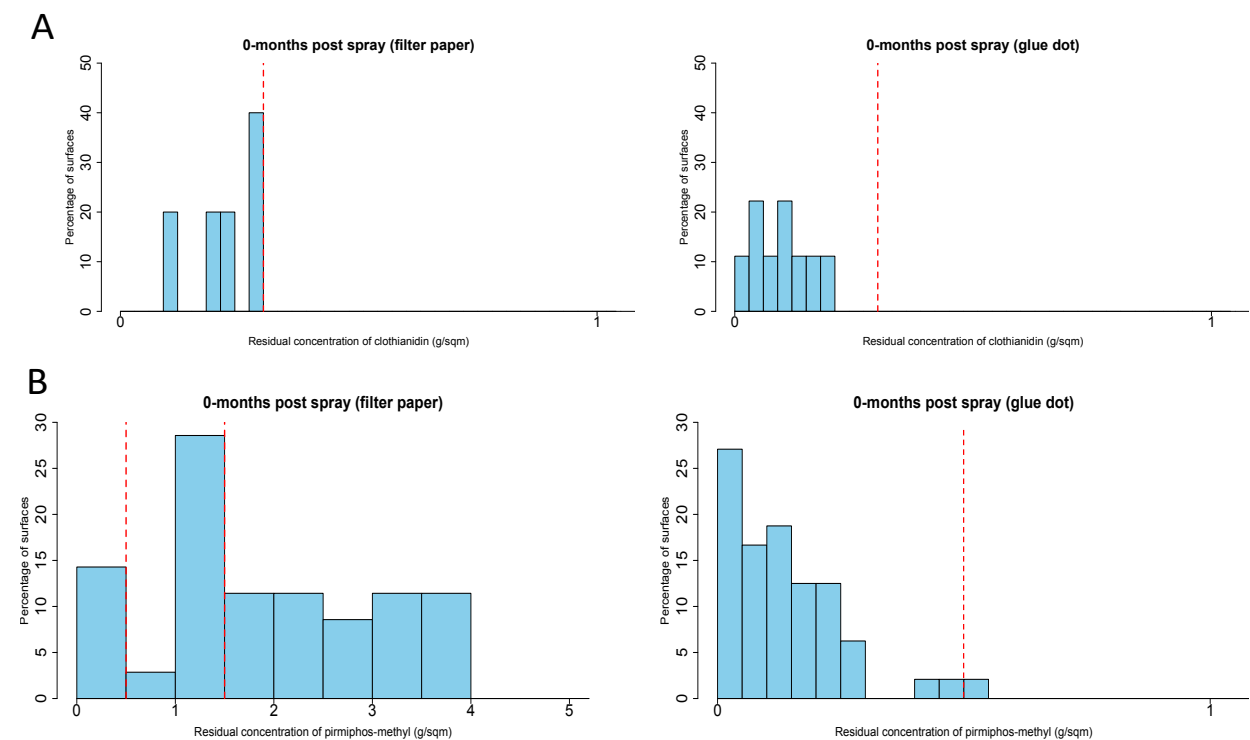
Supplementary Fig. 1 Phenotypic resistance characterisation of BusiaUg and Kisumu lab strains to pyrethroids (PY) – deltamethrin and permethrin and an organochlorine (OC) – DDT, and response of wild F0 mosquitoes to clothianidin + deltamethrin (CTD+DM) and clothianidin (CTD) only.



Supplementary Fig. 2 A cartoon showing the setup of cones on the walls of houses during exposure. The exposed field mosquitoes are labelled as (Ef), the exposed Kisumu strain (Ek) and the unexposed control cone (C).

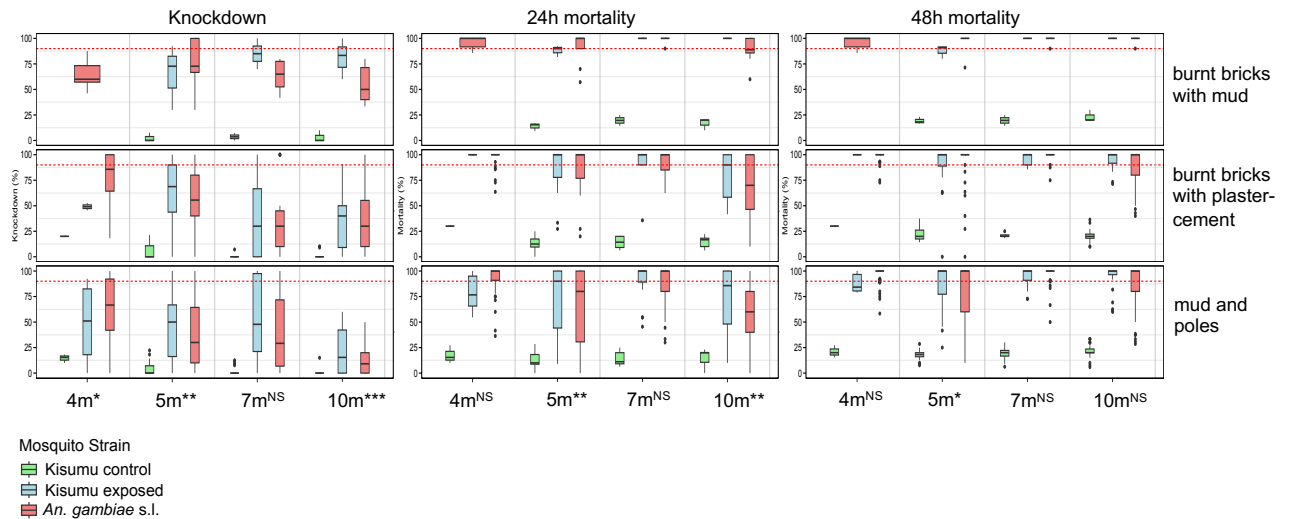


Supplementary Fig. 3 Residual concentration of insecticides sampled during spraying (0-months). A) Sumishield (clothianidin) and B) Actellic (pirimiphos-methyl).

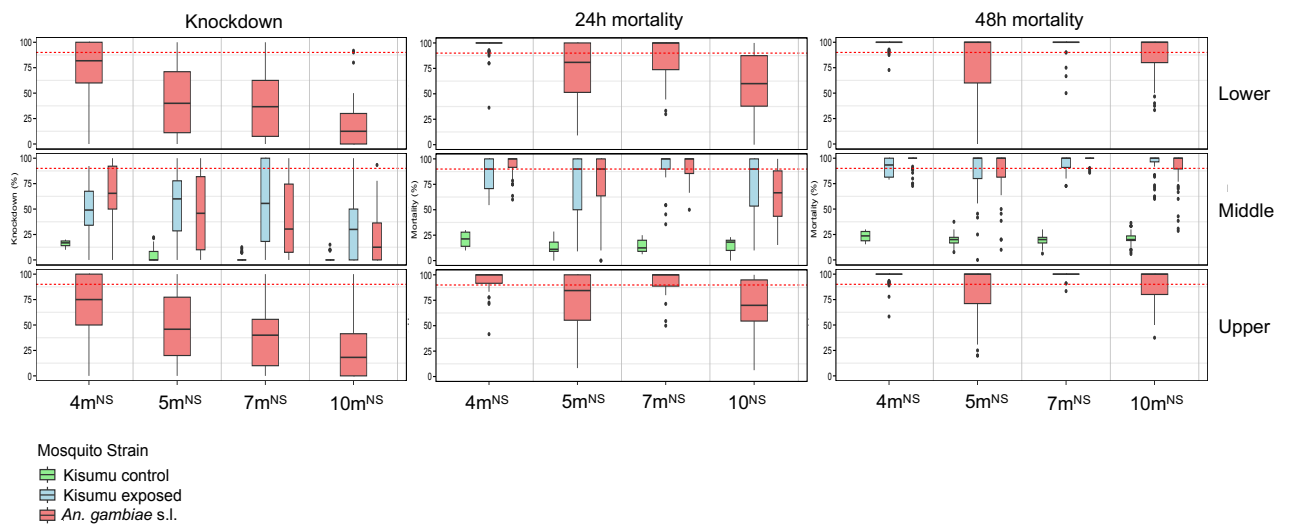


Supplementary Fig. 4 Box plot for mortality rates of exposed mosquitoes from wall cone assays in 2022 grouped by wall types (A) and part of the wall (B). Error bars represent SEM. The red dotted horizontal line is 90% mortality cut-off, below which is confirmed resistance. The level of significance is indicated by asterisks (* <0.05 , ** <0.01 , *** <0.001) and ^{NS} meaning “not significant”.

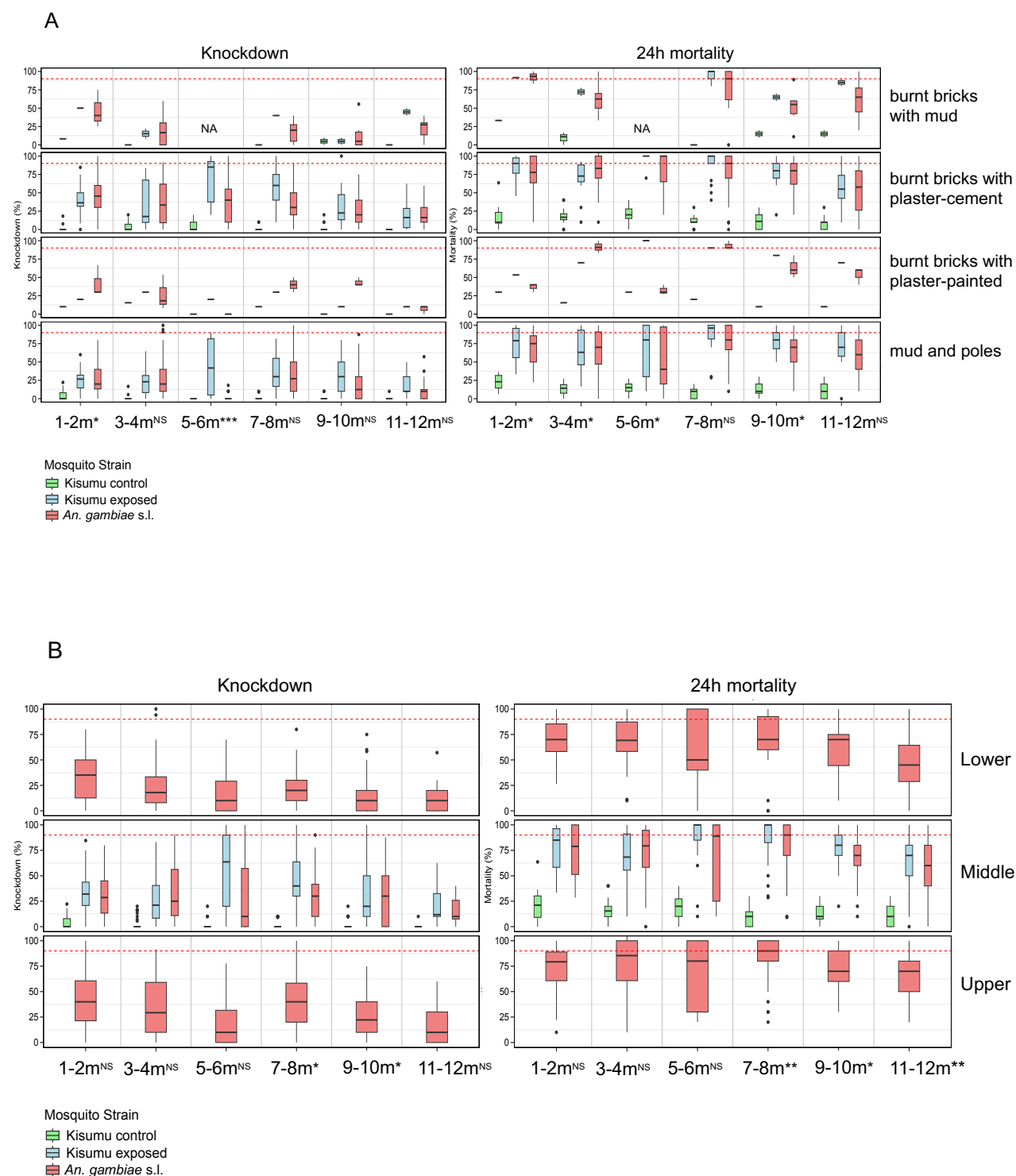
A



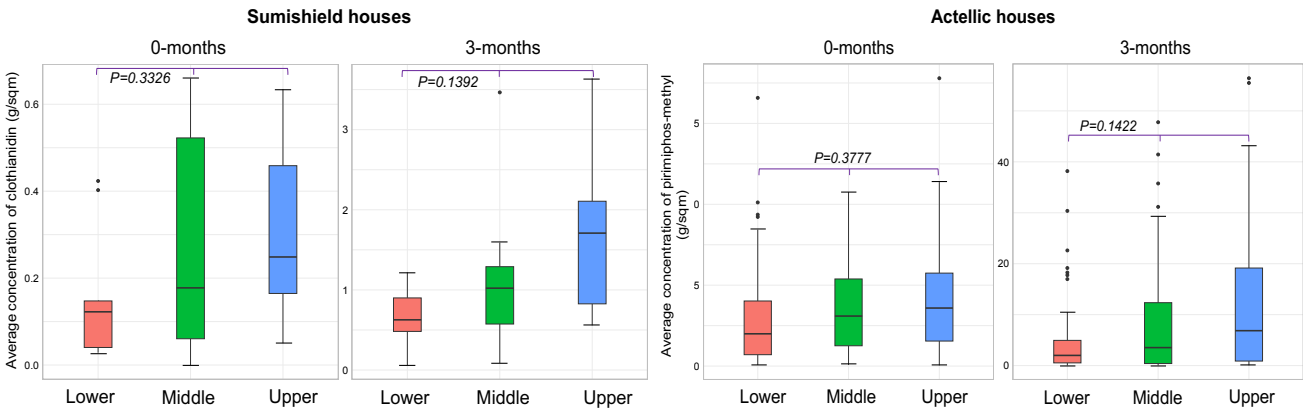
B



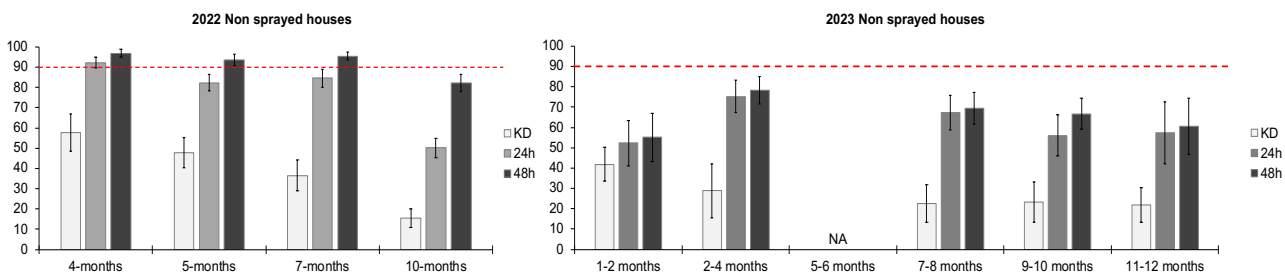
Supplementary Fig. 5 Box plot for mortality rates of only *An. gambiae* exposed mosquitoes from wall cone assays in 2023 grouped by wall types (A) and part of the wall (B). C) is the average concentration of IRS insecticides in Sumishield and Actellic houses grouped by part of the wall. Error bars represent SEM. The red dotted horizontal line is 90% mortality cut-off, below which is confirmed resistance. The level of significance is indicated by asterisks (* <0.05 , ** <0.01 , *** <0.001) and ^{NS} meaning “not significant”.



C



Supplementary Fig. 6 Bar plot for mortality rates of only wild *An. gambiae* mosquitoes exposed to non-sprayed walls in 2022 and 2023 with a table showing the average concentration of clothianidin detected in those houses.



	2022 (n=9)	2023 (n=2)
Average clothianidin concentration (g/sqm)	0.0184	0.4237
Average pirimiphos-methyl concentration (g/sqm)	NA	NA