

Table 4 Mosquito pupicidal activity of *C. rigidus* essential oil against *Ae. aegypti*, *An. gambiae* and *Cx quinquefasciatus* pupae 24 h post exposure

Targeted Mosquito species	Conc.(ppm)	MM±SD (%)	LC ₅₀ (LCL-UCL) (ppm)	LC ₉₀ (LCL-UCL) (ppm)	χ ²
<i>Aedes aegypti</i>	25	18.67±4.61 ^a	50.95	129.91	2.44
	50	50.67±4.11 ^b	(39.70–63.19)	(99.42–201.06)	
	100	73.33±5.32 ^c			
	200	100.00±0.00 ^d			
	300	100.00±0.00 ^d			
	F value	140.89***			
<i>Anopheles gambiae</i>	25	44.00±5.58 ^a	47.63	389.46	7.38
	50	46.67±5.11 ^a	(-)	(-)	
	100	57.33±3.11 ^a			
	200	72.00±3.00 ^b			
	300	100.00±0.00 ^c			
	F value	31.48***			
<i>Culex quinquefasciatus</i>	100	0.00±0.00 ^a	307.19	503.61	6.30
	200	18.67±4.61 ^b	(189.80–437.66)	(378.09–821.03)	
	300	44.00±3.00 ^c			
	400	61.33±4.61 ^d			
	500	100.00±0.00 ^e			
	F value	211.32***			

Note: MM±SD (%): Mean of mortality ± standard deviation (%); MM±SD within a column followed by the same letter do not differ significantly at P= 0.05 (Duncan's test); ***: p<0.001; LC₅₀ and LC₉₀: Lethal Concentrations to kill 50% and 90% of pupae respectively; ppm: parts per million; LCL: Lower Confidence Limit; UCL: Upper Confidence Limit; (-): no Confidence Limit estimated; χ²: Chi-squared; Number of replicates: 4