

INSECTICIDE CANDLE

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Abstract Insecticide candle is the optimum human lifesaving innovation that kills flying vectors, particularly mosquitoes - the most lethal of all insects in the world. Over one million people worldwide die from mosquito-borne diseases every year. The candle is a special vegetable wax-encased formulated candle which uses pyrethroids as the active repellent ingredient. An evaluation of the candles' repellent effect was done by the National Institute of Malariology, Parasitology and Entomology, Vietnam, after a field efficacy trial of the candles' formulation with transfluthrin was done using the human bait technique as the criteria in measuring the population of night biting mosquitoes, *Anopheles epiroticus* and *Culex vishnui*. The field trial was done in an indoor setting, conducted at the brackish residential area, An Thoi Dong, Can Gio District, Vietnam where the predominant population density species was the *Anopheles epiroticus* reported to be resistant to the pyrethroids class. The field trial results showed that in spite of mosquito resistance to pyrethroids the repellent candles provided a highly substantial protection effect from biting. The average protection effect of the candles in 6 hours biting of *Anopheles epiroticus* was 71.92% and *Culex vishnui* at 76.36%. In comparison, the results showed an increase of protection against a previous bioassay result done in July 2014 where the protection rate was only 60% with alphacypermethrin. This suggests that the candles had proved better to limit mosquito biting and has gathered a high degree of acceptance by the community (98%) for the candle. Further prevailing results were gathered from a laboratory evaluation research at the Vector Control Research Unit, Universiti Sains Malaysia using the Peet Grady chamber method indicating a response after 5 hours burning of a single candle. After-burned-time measured for 8 hours showed the efficacy for knock-down (KT50 and confidence limit) at 4.09 minutes and 100% mortality. This candle is a new revolutionary solution. It is a scientifically tested and proven tool in fighting mosquitoes and the diseases they transmit. Essentially applicable for both indoor and outdoor use, it is smokeless, odourless and adequately doubles up ideally as a light providing source especially useful in areas with no electricity. It stands decidedly as an effective, acceptable, affordable, accessible, and available source of household protection against many widespread vector diseases.