

Insecticidal activity of *Lantana camara* (Sein-Nar-Pan) against mosquitoes *Anopheles minimus*, *Aedes aegypti* and *Culex quinquefasciatus*

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Abstract

Dengue haemorrhagic fever, Japanese encephalitis, malaria and filariasis, etc. are mosquito-borne diseases and one of the controls of these mosquito-borne diseases is the interruption of disease transmission by using synthetic insecticides as adulticides and larvicides. However, synthetic insecticides are known to cause the problem of environmental pollution, residual effects and resistance by their improper use. Plant-based products (eg. *Azadirachta indica*) are used as alternate insecticides instead of synthetic insecticides. *Lantana camara* (Sein-Nar-Pan) is widely distributed in Myanmar including Pyin Oo Lwin. The aim of present study was to investigate the adulticidal potential of *Lantana camara* (Sein-Nar-Pan) against *Anopheles minimus*, *Aedes aegypti* and *Culex quinquefasciatus*. Adulticidal assay was performed using the WHO standard bioassay procedures. Sugar-fed females; *An. minimus*, *Ae. aegypti* and *Cx. quinquefasciatus* (3-7 days post emergence) were used in adulticidal activity. Median lethal doses (LD₅₀) of essential oil were 0.0261, 0.0816 and 0.0922 mg/cm² against *An. minimus*, *Cx. quinquefasciatus* and *Ae. aegypti*, respectively. And 95% lethal doses (LD₉₅) were found to be 0.0503 mg/cm² for *An. minimus*, 0.1278 mg/cm² for *Cx. quinquefasciatus* and 0.2032 mg/cm² for *Ae. aegypti*, respectively. At a dose tested 0.21 mg/cm² (1.5%) of essential oil, the results of 50% and 95% knockdown time (KT₅₀ and KT₉₅) of mosquitoes were 10.81 and 18.58 min to *An. minimus*, 12.14 and 20.50 min to *Cx. quinquefasciatus* and 15.75 and 29.26 min to *Ae. aegypti*, respectively. After 24 hrs exposure period, 100% mortality was found in both *An. minimus* and *Cx. quinquefasciatus*, but 96±3% mortality was observed in *Ae. aegypti*. The essential oil of *Lantana camara* (Sein-Nar-Pan) possesses the potential to be used as plant-based insecticide.