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Insecticide susceptibility testing of *Mansonia uniformis* in Trat province, Thailand

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Land transformation such as urban and rural land area, plantations, and agriculture has changed the habitats and invasive mosquito species in a specific location or a wider land area. Based on baseline entomological surveillance data, *Mansonia* mosquito vectors are among invasive species have been found to be geographically distributed from the habitats in urban area to rural area, in Bo Rai district, Trat province, Thailand. Among *Mansonia* mosquito vectors observed by entomological surveys, *Mansonia uniformis* is a predominant species adapted well to local environments. Its insecticide susceptibility to pyrethroids currently used in vector control for dengue and malaria in Bo Rai district, Trat province, has never been documented. The study objective was to test the susceptibility of *Mansonia uniformis* against the pyrethroids such as deltamethrin (DEL) and bifenthrin (BT). By using human landing catch collections, pooled population samples of night-biting *Ma. uniformis* were repeatedly collected at a peak hour from 18:00 to 22:00 pm., between August and November 2015. Then, all samples were individually examined for species identification under steromicroscope and subjected to testing susceptibility to DEL and BT insecticides using paired test and control samples. Single dose diagnostics of 0.05% DEL and 0.09% BT was performed with standard testing procedures and exposure times on DEL- and BT-treated test papers as recommended by WHO. In August, mortality rate of *Ma. uniformis* was 92.0% for DEL and 98.0% for BT. In November, mortality rate was 92.0% for DEL and 80.3% for BT. No dead *Mansonia* mosquitoes in untreated control samples was observed throughout the study. Such findings suggested that *Ma. uniformis* had a tendency of resistance against BT. If there is need for using other synthetic pyrethroids in a wider area of Bo Rai district, it is critical to determine what extent resistance in *Ma. uniformis* is significant.

Biography

Suntorn Pimnon has been trained in field of entomology at Laborotoire d'Immuno-Physiopathologie Virale-Maladies Virales Emergentes, Faculty of Pharmacy, Montpellier University (IRD), France. He is at the Faculty of Public health, Bangkokthonburi University, Thailand. He has published more than 5 papers.

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