Analysis of Vector-Bias and Blood Resource Dependence in Malaria Disease Model with Mosquito Repellent

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Vector-bias effect on mosquito-borne disease transmission occur when mosquito is more attracted to bite infected human [1, 2, 3]. The aim of this talk is to investigate how blood resource dependence and vector-bias effect affects the changes in the dynamic of malaria and how mosquito repellent should be implemented to control the malaria transmission. Mathematical model analysis about the existence and local stability of equilibria will be discuss related to the basic reproduction number. Our results showed that the mosquito repellent use can work to eliminate the disease only if the effectiveness of the mosquito-repellent is high enough to satisfy some condition which depend on basic reproduction number and the mosquito-intrinsic net reproductive rate.

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