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Jia Li* (li@math.uah.edu), Department of Mathematical Sciences, University of Alabama in Huntsville, Huntsville, AL 35899. *Stage-structured wild and sterile mosquito population models and their dynamics.*

The sterile insect technique (SIT), in which sterile mosquitoes are released to reduce or eradicate the wild mosquito population, is an effective weapon to prevent the transmission of mosquito-borne diseases. To study the impact of SIT on the disease transmissions, we formulate stage-structured, continuous- or discrete-time mathematical models, which include wild larvae and adult mosquitoes and sterile adult mosquitoes, for their interactive dynamics. We incorporate different strategies for releasing sterile mosquitoes, investigate the model dynamics, and compare the impact of the different release strategies. Numerical examples are also provided to demonstrate dynamical features of the models. (Received February 03, 2015)