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Fan Bai* (baifan.ubc@gmail.com), Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409. *Dynamical analysis of malaria transmission model includes both extrinsic incubation period and intrinsic incubation period.*

We formulate a delayed malaria transmission model, which includes both extrinsic incubation period and intrinsic incubation period. We calculate the basic reproduction number \mathcal{R}_0 , the disease-free equilibrium and the possible endemic equilibrium (exists if and only if \mathcal{R}_0 is larger than the unity). Then we analyze the equilibria of this model. We prove that if $\mathcal{R}_0 < 1$, the disease-free equilibrium is asymptotically stable; while if $\mathcal{R}_0 > 1$, the endemic equilibrium is asymptotically stable for any lengths of delay periods. Several numerical simulations are provided to verify our theoretical results. (Received September 15, 2016)