

**Vargas-De-León, Cruz****Global analysis of a delayed vector-bias model for malaria transmission with incubation period in mosquitoes.** (English) [Zbl 1259.34071](#)

Math. Biosci. Eng. 9, No. 1, 165-174 (2012).

Summary: A delayed vector-bias model for malaria transmission with incubation period in mosquitoes is studied. The delay  $\tau$  corresponds to the time necessary for a latently infected vector to become an infectious vector. We prove that the global stability is completely determined by the threshold parameter,  $R_0(\tau)$ . If  $R_0(\tau) \leq 1$ , the disease-free equilibrium is globally asymptotically stable. If  $R_0(\tau) > 1$  a unique endemic equilibrium exists and is globally asymptotically stable. We apply our results to Ross-MacDonald malaria models with an incubation period (extrinsic or intrinsic).

**MSC:**[34K20](#) Stability theory of functional-differential equations[92D30](#) EpidemiologyCited in **17** Documents**Keywords:**

malaria transmission; time delay; global stability; Lyapunov functional

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