1023-92-1140   **Sophia R.-J. Jang*** (`jang@louisiana.edu`), Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504-1010. *On a discrete West Nile epidemic model.*

A West Nile epidemic model in discrete-time is proposed. The model consists of two interacting populations, the vector and the avian populations. The avian population is classified into susceptible, infective, and recovered classes while an individual vector is either susceptible or infective. The transmission of the disease is assumed only by mosquitoes bites and vertical transmission in the vector population. The model behavior depends on a lumped parameter R_0. The disease-free equilibrium is locally asymptotically stable if $R_0 < 1$. The system is uniformly persistent and possesses a unique endemic equilibrium if $R_0 > 1$. Consequently, the disease can persist in the populations if $R_0 > 1$. (Received September 25, 2006)