

B50: The Existence and Stability Analysis of the Equilibria in Lymphatic Filariasis Model

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Abstract

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In this paper, a mathematical model describing the dynamics of Lymphatic Filariasis epidemics, which involves the interactions of two principal communities of Hosts (Humans) and vectors (mosquitoes) is presented. We found a threshold parameter \Re_0 , known as the Basic Reproduction Number. This model has two equilibria, disease-free equilibrium and endemic equilibrium. By constructing suitable Lyapunov function, we show that the disease free equilibrium is globally asymptotic stable whenever \Re_0 is less than one and when it is greater than one, the endemic equilibrium is globally asymptotic stable. ale or Bridding resistant our effective of the second one of the