

Numerical control measures of stochastic malaria epidemic model

ABSTRACT

Nonlinear stochastic modeling has significant role in the all discipline of sciences. The essential control measuring features of modeling are positivity, boundedness and dynamical consistency. Unfortunately, the existing stochastic methods in literature do not restore aforesaid control measuring features, particularly for the stochastic models. Therefore, these gaps should be occupied up in literature, by constructing the control measuring features numerical method. We shall present a numerical control measures for stochastic malaria model in this manuscript. The results of the stochastic model are discussed in contrast of its equivalent deterministic model. If the basic reproduction number is less than one, then the disease will be in control while its value greater than one shows the perseverance of disease in the population. The standard numerical procedures are conditionally convergent. The propose method is competitive and preserve all the control measuring features unconditionally. It has also been concluded that the prevalence of malaria in the human population may be controlled by reducing the contact rate between mosquitoes and humans. The awareness programs run by world health organization in developing countries may overcome the spread of malaria disease.

Keyword: Malaria disease model; Stochastic modelling; Stochastic methods; Convergence