

Abstract

To better comprehend the dynamics of Lumpy skin disease (LSD), a novel mathematical model with treatment is proposed here. We check if the model has a positive and finite solution. To evaluate the proposed model's sustainability at both the disease-free and endemic equilibrium points, we estimate the reproduction number as a measure of sickness contagiousness. Graphical data are also analyzed to back up the theoretical findings. We employ sensitivity analysis to probe how changing the model's parameters affects its reproducibility. The fundamental objective of this research is to evaluate different approaches to illness prevention that may be available. As a result, we start by considering the impact of the treatment to be the direct control, and then we consider the rate of exposure to vulnerable people to be the direct control. The findings of each of the examples, in addition to discussion and graphical representations, are reported in the accompanying manuscript.