

MATHEMATICAL MODEL OF THE TRANSMISSION DYNAMICS OF SWINE FLU

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Abstract

In this paper we present a Mathematical Model for the transmission dynamics of Swine flu among swine and humans. Each population is divided into two compartments: susceptible and infected. The model assumes that there is no recovery in the infected swine and there is no human to swine transmission. The steady states of the model are determined and their stability investigated. The analysis of the disease-free steady state showed that the system will be stable if there is a bound on the growth rate of swine and the infection transmission rate from human to human. The analysis of the endemic steady state showed that the flu will persist in the human population if there is a bound on the infection transmission rate from swine to swine and the infection transmission rate from swine to human.

Keywords: Swine flu, Mathematical model, Steady state, Disease-free steady state, Endemic state
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