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**Vinodh kumar Chellamuthu\***, Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504, and **Azmy S. Ackleh, Jacoby Carter** and **Baoling Ma**. *A Mathematical Model to Control the Impact of  $B. dendrobatidis$  in Amphibian Population.*

Chytridiomycosis is a disease that poses a serious threat to amphibian populations worldwide. Several studies show that inoculation of *Janthinobacterium lividum* ( $Jl$ ) could inhibit the disease. In this study, we developed a mathematical model of an amphibian juvenile-adult population in a single pond infected with chytridiomycosis caused by the fungal pathogen *Batrachochytrium dendrobatidis* ( $Bd$ ) to investigate on how the inoculation of anti-Bd bacterial species  $Jl$  could reduce  $Bd$  infection on amphibians. Furthermore, we demonstrate that temperature plays an important role in the disease dynamics. We also showed how temperature variation influence the  $Bd$  disease on amphibians. Our findings confirm that chytrid fungus is limited by temperature and is less likely to occur at warmer ponds. Although our results predict various scenarios where it is possible for  $Jl$  to limit the impact of  $Bd$ , better understanding of the  $Jl$  lifecycle is needed to fully understand such interaction. (Received September 14, 2014)