

1109-92-275

**Ahmed Abdelrazec\*** (aabdelr@asu.edu), ASU - Tempe, Tempe, AZ 85282, and **Jacques Belair** and **Huaiping ZHU**. *Modeling the Spread and Control of Dengue with Limited Public Health Resources*.

A deterministic model for the transmission dynamics of a dengue disease, with a nonlinear recovery rate reflecting the public health resources, is formulated to study the impact of available resources of the health system on the spread and control of dengue fever. Model results indicate the existence of multiple endemic equilibria and coexistence of an endemic equilibrium and a periodic solution. Additionally, our model exhibits the phenomenon of backward bifurcation. The results of this study could be helpful for public health agency arrange a proper amount of health resources for the control of dengue transmission. (Received February 03, 2015)