

1106-VG-567

**Elisha D Hall\*** (ehall115@my.apsu.edu) and **Ramanjit K. Sahi.** *Applications of SIR-type models in kudzu growth.* Preliminary report.

SIR-type compartmental models have been used in modeling epidemics such as Malaria and Ebola since W.O. Kermack and A.G. McKendrick introduced the concept in the early 1927. Mathematicians use these models to find the rate at which the disease spreads, at what point it becomes an epidemic and what factors are most prevalent in eradication or maintenance of the disease. I will use this same SIR-type compartmental model to demonstrate the interaction between kudzu, an invasive species in Tennessee, to two native flora species. This information will show the rates of growth and decline, the relationship in lifecycles between the plants and the major factors in kudzu control. (Received September 02, 2014)