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Ana-Maria Croicu* (acroicu@kennesaw.edu), 1000 Chastain Rd, MD# 1102, Kennesaw, GA 30144. *Outbreak or bio-terrorism? An optimal control model to reduce and eradicate Anthrax disease.*

Anthrax is a fatal infectious disease which can affect animals and humans alike. Anthrax outbreaks occur periodically in animals and they are of particular concern in herbivores, due to substantial economic consequences associated with animal death. The purpose of this study is to develop optimal control interventions that focus on vaccinating susceptible animals and/or removing infected carcasses. Our mathematical goal is to minimize the infectious animal population while reducing the cost of interventions. Optimal control interventions are derived theoretically and numerical results with conclusions are presented. (Received September 20, 2017)