1163-92-1427 **Alexis L. White*** (`alexis.white@ufl.edu`), University of Florida, Gainesville, FL 32611, and **Holly D. Gaff** (`hgaff@odu.edu`), Dept of Biological Sciences, Norfolk, VA 23529. *Simulation of an integrated tick management program with a tick-killing robot and guinea fowl.*

Ticks are vectors of disease-causing pathogens that affect humans, wildlife, and domestic animals. Effective control measures are needed to reduce the risk of encountering ticks, and thus reduce risk of tick-borne disease. Interated tick management (ITM) has been used to implement multiple tick control methods at once to increase efficacy but have not been well studied because of the complexities of tick and host ecology. Using the data from a tick surveillance study, along with the results from tick control field studies, an agent based model was developed to explore how integrated tick management tools interact to increase efficacy. Within the model we explore an ITM program within a backyard that uses three forms of control: (1) TickBot, a tick-killing robot that lures ticks to a treated area (2) guinea fowl as a biological control, but are also hosts to juvenile life stages of ticks (3) lawn mowing to decrease favorable habitat of ticks. Results from the model reveal the complex dynamics between control strategies and emphasize the need for further field studies to better under these forms of tick control and improve model parameters. (Received September 15, 2020)