Purdue University
Department of Entomology
Undergraduate Capstone
Project Summary

Name of Student:

Matthew Keen

Name of Mentor:

Dr. Ralph Williams

Name of Academic Advisor:

Jonathon Neal

Project Title:

Species composition and insect succession on pig cadavers subjected to 3 wrapping treatments.

Project Summary:

Introduction

Different insects arrive on a body at different times of decomposition. However, if a body is wrapped preventing insects from the cadaver as well as slowing the rate of decomposition, how is insect succession affected? Our objective is to compare the rates of decomposition involving three different wrapping methods: blankets, tarps, and black trash bags. Comparing these rates of decomposition to a control and to each other. With that being said, our hypothesis is if cadavers are wrapped in different materials then we plan to see a difference in rate of decomposition. We believe the rate of succession will be the slowest with the trash bag, then tarp, and fastest with the blanket.

Materials and Methods

Eleven infant pig cadavers were place out at the Forensic Entomological Research Compound, (FERC), to allow for decomposition. Three of the pigs were wrapped in tarps, three in black construction grade trash bags, 3 in black fleece blankets, and 2 left untreated. Ribbon was hung to prevent scavenging. Each pig was placed in a five-foot by five-foot section at random. Every day observations and photographs were taken. On every fourth/fifth day one pig from each style of treatment was removed and unwrapped to examine the rate of decomposition and insect succession. Insect samples were collected off the control pigs in the first couple of days until no insect presence. Insect sample from the wrapped pigs were taken upon removal. Two trials of the experiment were conducted each lasting 14 days. Vegetation was cleared before each trial.

Results

Our results showed that insect succession and the rate of decomposition were slowest on the trash bag, then the tarp and fastest on the blanket. No insect species composition data could be shown, due to the need for more trials, as well as longer durations. Results also showed that you will see fly activity on the trash bag and the tarp long after the blanket and the control.

Conclusion

We confirmed our hypothesis that the rate of decomposition and insect succession will be slowest on the trash bag, then the tarp and fastest on the blanket. Further study would need to done to acquire accurate data confirming the actual rate of decomposition to the control. Also further data would need to be collected in order to record the species composition on each of the treatments.