

## THE EFFECT OF SUITCASE CONCEALMENT ON THE INSECT COLONIZATION: A PILOT STUDY IN WESTERN AUSTRALIA

Petersen C., Georgy J., Magni P.A.

School of Veterinary & Life Sciences, Medical & Molecular Sciences Cluster,  
Murdoch University, Perth, Western Australia  
p.magni@murdoch.edu.au

Decomposition is a complex and continuous process that involves the breakdown of soft tissues post mortem. This is often mediated by the action of necrophagous macro- and micro-fauna, especially insects (e.g. Diptera, Coleoptera). Depending on the geographic region and the author, the number and the extent of decomposition stages has varied from one to as many as nine. However, the decomposition process is often broadly categorised into five stages (fresh, bloated, active decay, advanced decay, and dry/skeleton). Generally, each stage is characterised by specific changes in tissue morphology and insect activity. Although researchers frequently use decomposition stages, it is important to understand that in reality, the process of decay doesn't occur in discrete stages (as it is a continuous process).

Even though the basic sequence of decay is generally the same for all carcasses, the rate at which decomposition occurs varies between bodies as a result of many interrelated variables. Both intrinsic (variables concerning the corpse itself, e.g. body size, condition of body, health of the individual, cause of death, and presence of clothing) and extrinsic factors (variables in the external environment, e.g. temperature, humidity, precipitation, sun/shade, accessibility to insects) may directly influence the rate of decomposition, with a number of these factors having been previously investigated.

The present pilot study investigated suitcases as a barrier that may affect the access of bodies to insects, and therefore modify or delay the typical decomposition process.

The field of experiment has been held at Murdoch University Vet Farm, over a period of six weeks (April-May 2017). A total of six pig carcasses (*Sus scrofa* L., approx. 7-11 kg) and 6 identical suitcases were used over the course of the study. Five pigs were singularly placed in suitcases, one pig was caged and exposed and one suitcase was left empty. Experimental pigs were placed approximately 20 meters apart from each other. Temperature data loggers were used to record the temperature and humidity within the suitcases, as well as the ambient temperature/humidity of the study field. The exposed pig and suitcases were photographed and sampled daily. Insect samples collected were reared in laboratory until the adult instar. The first suitcase was opened after 15 days from the beginning of the experiment, while the others every 7 days until the end of the study.

Results regarding the decomposition process inside/outside the suitcases as well as the insect species colonizing the carcasses will be presented. At present the study is currently ongoing.