

Abstract

The use of Maggot Debridement Therapy (MDT) has increased over the years for the debridement of chronic wounds and for the enhancement of wound healing. In it, the bodily secretions of maggots were revealed to contain some form of natural defence against bacteria, such that treatment of wounds against infection in patients was possible. Research carried out in this field mainly focused on larval therapy and barely any study has been conducted on the adult flies to investigate for possible anti-bacterial properties.

After hatching, female *Lucilia cuprina* need a source of protein for their reproductive organs to mature, and also another feed of protein before they lay their eggs. The common sources of protein for *Lucilia cuprina* include carcasses and manure.^{i ii} As microorganisms are found in abundance amongst these, we have concluded that in order to feed on the rotting flesh of carcasses and manure, *Lucilia cuprina* must have some antibacterial and antimicrobial properties in their bodies to counteract the bacteria and fungi found in their diet.

Thus, this motivated the project team to investigate the anti-bacterial properties of the bodily fluids of *Lucilia cuprina* adult flies and compare them to that of maggots from the same species.

The body fluids of *Lucilia cuprina* flies were extracted and screened against four strains of bacteria: *Escherichia coli*, *Staphylococcus epidermidis*, *Pseudomonas putida* and *Micrococcus luteus* through serial dilution. Our study conducted showed that the body fluid of *Lucilia cuprina* flies indeed had antibacterial properties against all the above bacteria apart from *Escherichia coli*.

ⁱ Gordon Gordh, D. H. (2005). *A Dictionary of Entomology*. (2nd ed.). Massachusetts: CABI.

ⁱⁱ Roberts, J. A., & Kitching, R. L. (1974). Ingestion of sugar, protein and water by adult *Lucilia cuprina* (Wied.) (Diptera, Calliphoridae). *Bull Entomol Res*, 64, 81-88.