



H28 A Checklist of Forensically Important Blow Flies (Diptera: Calliphoridae) Collected From Human Remains in Central Indiana

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After attending this presentation, attendees will better understand the importance of forensic entomology in criminal investigations. Attendees will also be informed about the species of Calliphoridae that colonize human remains in central Indiana.

This presentation will impact the forensic science community by providing case-by-case information pertaining to blow fly colonization of human remains. This will provide insight into blow fly biology and, furthermore, will increase knowledge of how seasonality, temperature, and other variables can play a role in the behavior of these forensically important insects. This presentation will also reveal the most common primary blow fly colonizers of human remains in the study area, which may be applicable to surrounding regions. To date, relatively little information has been published on blow fly species diversity and abundance on actual human remains; consequently, this study will help to fill this deficiency in the literature.

The field of forensic entomology has seen immense growth over the past several decades. Insects can be used to help answer questions pertaining to time since death or movement of remains in homicide investigations as well as providing insight in abuse and neglect cases; however, to improve our use of insects in these types of investigations, we must first know their distribution and biodiversity in a given range.¹ Several areas of the United States have records of surveying forensically important blow flies, using traps baited with beef liver or other decaying remains.²⁻⁴ Many of these studies have shown that these types of traps can provide a sufficient sample of species that would be expected to colonize human remains in that area; however, given the logistical difficulty in sampling insects from human remains, very few studies conducted in the United States have been able to compare blow fly diversity in traps with those found on humans. This study presents the results from a survey of the forensically important blow flies found colonizing human remains in Central Indiana in 2016 and 2017. The findings from this work will provide baseline data that can be compared with future collections of forensically important blow flies on non-humans in Indiana.

Reference(s):

1. Greenberg, B. Flies as forensic indicators. *Journal of Medical Entomology*. 1991 (28) 565-577.
2. Brundage, A., Bros S., Honda J.Y. Seasonal and habitat abundance and distribution of some forensically important blow flies (Diptera: Calliphoridae) in Central California. *Forensic Science International*. 2011; 212(1): 115-120.
3. Weidner L.M., Jennings D.E., Tomberlin J.K., Hamilton G.C. Seasonal and geographic variation in biodiversity of forensically important blow flies (Diptera: Calliphoridae) in New Jersey, USA. *Journal of Medical Entomology*. 2015; 52 (5): 937-946.
4. Weidner L.M., Gemmellaro M.D., Tomberlin J.K., Hamilton G.C. Evaluation of bait traps as a means to predict initial blow fly (Diptera: Calliphoridae) communities associated with decomposing swine remains in New Jersey, USA. *Forensic Science International*. 2017 278: 95-100.

Forensic Entomology, Blow Flies, Human Remains