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A preliminary study about the spatiotemporal distribution of forensically important blow flies (Diptera: Calliphoridae) in the area of Bern, Switzerland

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Highlights

- We sampled 5580 blow flies at six locations around the federal city of Switzerland, Bern, by means of baited traps
- *Lucilia sericata* was the most frequent species from total 16 species found
- Species richness was highest in the forest but most specimens were found at the urban locations
- Indicator species were found for seasons and the forest location
- Six blow fly species were found additionally on 12 human bodies in the sampling period

Abstract

To assess the species composition of necrophagous blow flies (Diptera: Calliphoridae) in the area around the federal city of Switzerland, Bern, sampling with baited bottle traps was performed over the course of 34 weeks in 2014. Six locations ranging from urban to forest habitats were sampled weekly or rather biweekly in the winter period. 5580 individuals belonging to 16 species were identified with *Lucilia sericata* as the most dominant and frequent species, followed by *Calliphora vicina*. While most individuals were found in the urban habitats, species richness was highest in the forest. Species richness and Chao-Shen entropy estimator peaked in most locations in the summer. In winter only two species were documented (*C. vicina*, *Calliphora vomitoria*). The species *Lucilia illustris* was found to be an indicator species for summer and autumn, while *C. vomitoria* was found to be an indicator species for the forest location. Entomological cases of the same time period conducted in the Institute of Forensic Medicine Bern were included to compare the species composition. Six blow fly species were found on human bodies which are in line with the monitoring. Of these, *L. sericata*, *C. vicina* and *Protophormia terraenovae* were the most frequent.

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