

The circadian activity pattern of carrion flies in Malaysia

Chee-Dhang Chen *¹, Wasi-Ahmad Nazni ², Koon-Weng Lau ¹, Mohd Sofian-Azirun ¹

¹ Institute of Biological Sciences, University of Malaya, 50603 Kuala Lumpur, Malaysia

² Medical Entomology Unit, Institute for Medical Research, Jalan Pahang, 50588, Kuala Lumpur, Malaysia

Whether a corpse has been colonised by flies close to the time of death or a delayed oviposition might have occurred is an important question in determining the post mortem interval (PMI). The circadian activity and the oviposition behaviour of blowflies are some of the important factors. Two studies were conducted to investigate the circadian activity of blowflies by exposing euthanised monkeys to see if blowflies visited and oviposited on the carrion over three consecutive days. The first study was commenced at daytime (1130h) while the second study was commenced at nighttime (2200h). Both studies were monitored hourly for the first three days. The first study showed that flies were able to visit the fresh carrion within 30 minutes after it was placed outdoor in the day time. The second study showed no fly activity throughout the night until sunrise, indicating that the oviposition of blowflies was delayed. The result was further confirmed by observation on fly activity for another two consecutive days. Both studies showed that flies began visiting monkey carcasses about half an hour after sunrise (mean 29.25 ± 1.49 minutes) and actively laid eggs on the carcasses throughout the day until sunset. No flies were observed visiting the carcasses from approximately less than 10 minutes after sunset (mean 5.80 ± 0.68 minutes). No fly activity was observed throughout the night. Both studies confirmed that flies are inactive at night. Based on these results, presumably a victim killed after sunset would not be colonised by flies before the next sunrise. This may lead to a considerable discrepancy between the estimated PMI and the actual time of death.

