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Effect of carbofuran on the development of a forensically important blow fly *Chrysomya megacephala* Linn. (Diptera: Calliphoridae)

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Forensic entomology is the comprehensive field where civil and criminal legal investigations profit by insect evidence. Estimation of minimum time since death or Postmortem Interval (PMI) is the most vital task under its purview. Blow flies are the earliest colonizers of corpses and the development rate of their immature stages is being extensively utilized in PMI calculations. Blow fly larvae feeding on the dead bodies that contain foreign substances, such as illegal or prescription drugs, or poisons, will often sequester these substances in their own bodies. Therefore, entomotoxicology is another medicolegal application of forensic entomology in which the gut contents of the larvae and pupae sampled from human remains can be analyzed for foreign substances. Additionally, these toxins may induce changes in their development rate that could be enough to significantly alter PMI estimates. It may lead to errors if overlooked and not taken into account during a death investigation. Suicide and deliberate self harm using pesticides is a major but under recognized public health problem in the developing world. Each year 250,000–370,000 thousand people die from deliberate ingestion of pesticides. The WHO now recognizes pesticide poisoning to be the single most important means of suicide worldwide. Out of total 1,31,666 cases of suicides reported from India in 2014, 14,352 cases (10.9%) correspond to deaths caused by deliberate consumption of insecticides (NCRB, 2014). Carbofuran is a broad spectrum carbamate pesticide that kills insects, mites, and nematodes on contact or after ingestion. With their widespread use in agriculture and forestry, Carbamates, after Organophosphates, are most commonly associated with unnatural deaths caused by either accidental or incidental poisoning. Bearing in mind the above facts, the effect of Carbofuran on the development of *Chrysomya megacephala*, a blow fly of forensic significance, has been investigated in the present study.

Biography

Devinder Singh did his PhD in 1986 and has been a faculty member for the last 29 years. He was awarded a Post-doctoral fellowship by the Govt. of India for undertaking research in the laboratory of the legendary forensic entomologist Prof. Bernard Greenberg, University of Illinois at Chicago, USA. He has been actively involved in the field of Forensic Entomology for the last 23 years. 17 students have completed PhD under his supervision and 9 major research projects have been sanctioned to him by various funding agencies. 130 research papers have been published by him in national and international journals of repute.

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