A Study of presence of Ante-mortem Administered Drugs and to Analyse them in the Different Stages of Insect Development.

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Key Words: Blowfly (*Calliphora* sp.); Entomo-toxicology; Ante-mortem; Drugs

Abstract

Forensic entomology is the science of using insect evidence to uncover circumstances of interest to the law, often related to a crime and forensic entomo-toxicology is its branch where potential use of insects for detecting drugs and other toxins in decomposing tissues has been widely demonstrated. In death investigations, Diptera and other arthropods can be reliable alternative specimens for toxicological analysis in the absence of tissues and fluid normally taken for such purposes. It also investigates the effects caused by drugs and toxins on arthropod development in order to assist the forensic post-mortem interval estimates. Insects that feed on tissue that contains substances relevant under toxicological aspects will, in many cases, ingest and store these toxicologically relevant substances in their own tissue. The present research is an attempt to detect the presence of any ante-mortem administered drugs such as alcohol, phenobarbitone, diazepam, prednisolone etc., and to analyse them in the different stages of insect development. The insect used for the study is necrophilous insect,

Blowfly (*Callphora* sp.).Colour tests were used for determining the presence of nine drugs/ chemicals at different stages of growth of the insect. The drugs used for the administration purpose included, Librium (Tranquillizer), Diazepam (Tranquillizer), Phenobarbitone (Barbiturate), Prednisolone (Cortico-steroid), Mercury (Metallic poison), Dextromethorphan (Anti-tussive drug), D.D.T. (Organo-chloro compound), Lead (Metallic poison), Alcohol. The analysis showed that drugs such as Librium, Diazepam, Phenobarbitone, Prednisolone and Alcohol can be detected in all the stages of the insect from adult stage which was administered with these drugs to the adult stage of new generation; whereas Dextromethorphan could not be detected in any of the developmental stage of the insect. Lead and Mercury could only be detected from the adult stage of insect which was administered the chemicals. Tests administered for D.D.T. gave positive result only till the third larval stage but not the pupal stage and adult stage of the new generation. This study can be used in forensic science for finding out the ante-mortem administered drugs/ chemicals. As these substances can be found in the dead body or corpse and can give an indication of foul play, suicidal, accidental or homicidal nature of the crime.