Forensic Application of Larvae Analysis to Detect Chemicals in Muscle Tissue

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Past events cannot be observed, that is where forensic toxicology comes into play regarding the detection of toxic amounts of chemicals. This is useful in the forensic science field because it allows death investigators to deduce if the body at the scene had been under the influence of any chemicals before death. The purpose of this research is to determine if maggots can uptake trace amounts of chemicals from muscle and to determine if this uptake can be detected and quantified. This research will specifically examine the toxicology of three common chemicals (alcohol, caffeine, and penicillin) as absorbed by fetal pig muscle. To do such, fetal pig thighs were removed and skinned then placed in individual solutions of alcohol, caffeine, or penicillin to soak for 24 hours. Once all the liquid was removed, maggots were placed on the muscle. Samples of maggots were collected every 12 hours for a total of 72 hours. The maggots were then frozen and later placed in a nitric acid digestion to create a liquid solution that was later analyzed using the GC-MS.