

**EFFECT OF FORMALIN TREATMENT ON BLOWFLY COLONIZATION,
MAGGOT MASS AND RATE OF DECAY OF FISH CARCASSES**

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Blowflies, also known as green bottles or carrion flies, play a vital role in forensic entomology by helping to determine decomposition patterns. They are crucial in entomotoxicology, studying how drugs or toxins affect insect development and are invaluable in identifying substances in inebriated corpses. This study investigated how formalin, a chemical that preserves fish to prolong shelf life affects blowfly colonization, maggot mass development, and carcass decomposition rates. Five sets of six *Oreochromis* fish carcasses, three treated with 50 mL of 37% thin layer of formalin using a spray bottle, and three as controls were used. Each fish was placed outdoors on soil-filled trays, five meters apart, in a sunny location from 0800 to 1600 h from August 1st to November 30th, 2023. Blowfly visits were recorded at 30-minute intervals for two days, after which the carcasses were moved to a cage until maggots developed into pupae. Collected pupae were reared in glass jars covered with mesh until adult emergence. Carcasses were photographed daily to document decay. Data was analysed using IBM SPSS Statistics v26.0. Both groups of carcasses, experimental and control, were visited by *Chrysomya megacephala*, *Calliphora vicina* (Diptera: Calliphoridae) and *Sarcophaga* sp. (Diptera: Sarcophagidae), with the visitation rate being significantly low for the formalin-treated carcasses ($p < 0.001$). Of the colonized maggots, comparatively fewer pupae and adults emerged from the formalin-treated carcasses ($p = 0.007$). However, there was no difference ($p = 0.135$) in the rate of decay of the fish carcasses treated with formalin and the controls. The study reveals that formalin significantly affects fly visitation and also lowers the development of maggot mass on fish carcasses. However, formalin does not significantly affect the decay rate of fish carcasses, indicating that formalin impacts the initial stages of carcass decomposition, but its effect may diminish over time.

Keywords: Blowflies, Entomo-toxicology, Fish carcasses, Formalin, *Oreochromis*