In vitro Effects of Chlorpyrifos on the Acetylcholinesterase Activity of Euryhaline Fish, *Oreochromis mossambicus*

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The *in vitro* effect of a widely used organophosphorus insecticide, chlorpyrifos (CPP), on the acetylcholinesterase (AChE) activity was studied *in vitro*. The kinetic constants K_m and V_{max} and the bimolecular constant k_i were determined *in vitro*. The *in vitro* AChE study indicated that CPP is neurotoxic and that it alters the apparent K_m values widely in a concentration-dependent manner, resulting in a competitive type of inhibition. Based on the k_i values, the sensitivity of AChE in brain is greater than that in gill tissue, at $7.3 \cdot 10^{-5}$ M and $11.92 \cdot 10^{-5}$ M, respectively. The study points to the importance of kinetic studies and the results suggest that in biomonitoring programmes brain AChE activity can be a good diagnostic tool for CPP toxicity.

Key words: Acetylcholinesterase, Chlorpyrifos, *Oreochromis mossambicus*