ISSN: 2320-5407

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Manuscript No.: **IJAR-52728** Date: 12-07-2025

Title: BIOCHEMICAL ALTERATIONS AS TOTAL PROTEINS (TP), ASPARTATE, AMINOTRANSFERASES (AAT) AND ALANINE AMINO TRANSFERASES (ALAT) INDUCED BY CHLORPYRIFOS (AN ORGANOPHOSPHATE) IN THE FISH CHANNA PUNCTATA (BLOCH)

Recommendation:

Accept as it is .....

Accept after minor revision.....

Accept after major revision .....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality			✓	
Clarity			✓	
Significance			✓	

Reviewer Name: Dr Aamina

Reviewer's Comment for Publication.

The abstract presents a focused investigation into the biochemical effects of Chlorpyrifos—both technical grade and 20% EC—on the freshwater fish *Channa punctata*. It effectively outlines the parameters studied: Total Proteins (TP), Aspartate Aminotransferase (AAT), and Alanine Aminotransferase (ALAT). The duration of exposure (four days for lethal and ten days for sub-lethal concentrations) and the use of 96-hour LC_{50} values as reference points provide a clear experimental framework.

The findings are concisely communicated, showing a decrease in TP levels and an increase in AAT and ALAT enzyme activities across vital organs such as gills, liver, kidney, brain, and muscle. The discussion in the abstract also indicates that these alterations are likely due to toxic stress leading to proteolysis, hormonal imbalance, and increased gluconeogenesis. These explanations link the observed biochemical responses to broader metabolic processes, such as the elevation of free amino acids, thereby enhancing the relevance of the study.

The abstract is scientifically sound and sufficiently detailed for its purpose. The keywords are specific and accurately represent the content of the study.

Introduction Review

The introduction begins by tracing the origins of life from chemical evolution to biological complexity, outlining how fundamental elements and compounds came to constitute life forms. It links chemical organization to biological macromolecules such as proteins, carbohydrates, fats, and nucleic acids, and positions these substances as central to the metabolic and physiological integrity of cells, tissues, and organs.

ISSN: 2320-5407
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

The discussion transitions into core biochemical processes such as glycolysis, gluconeogenesis, protein synthesis, and the role of acetylcholinesterase. These processes are appropriately identified as being enzyme-driven and vital for maintaining homeostasis. The emphasis on enzymes sets the stage for examining how external stressors like pesticides might alter enzyme activity and, consequently, physiological equilibrium.

This theoretical framing aligns with the study's central focus on biochemical alterations induced by Chlorpyrifos, establishing a connection between molecular-level changes and systemic physiological impacts. The narrative maintains a scientific tone and supports the rationale for investigating enzyme activities in response to environmental toxicants.

Overall Evaluation

The article offers a well-organized and clearly articulated exploration of pesticide-induced biochemical changes in *Channa punctata*. The abstract and introduction collectively demonstrate a solid grasp of biochemical principles, toxicological mechanisms, and ecological relevance. The study is grounded in empirical observation and framed within a coherent theoretical structure that underscores the role of enzymatic regulation in maintaining homeostasis and health in aquatic organisms.