

# FORMIC ACID INDUCED ACUTE TOXICITY AND ITS SUBLETHAL EFFECTS ON GROWTH, BEHAVIORAL PATTERN AND OXIDATIVE STRESS PARAMETERS OF THE FRESHWATER SNAIL *BELLAMYA BENGALENSIS*

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*The organic acid, namely formic acid is discharged into the water bodies from various paper, leather tanning, and textile processing industries causing a potential threat to the aquatic life forms. This study evaluated the acute and sublethal toxicity of formic acid by assessing the mortality, behavioral alterations, and changes in the levels of oxidative stress enzymes in the freshwater snail, Bellamyia bengalensis. The acute toxicity (96h LC50) value of formic acid to B. bengalensis is 182.69 mg/l. Various behavioral alterations like crawling movement, tentacle movement, touch reflex, and mucous secretion were also noted among treated and controlled snails. The effect of sublethal concentration of formic acid on differential expression of oxidative stress enzymes was investigated. Integrated biomarker response (IBR) and biomarker response index (BRI) analysis illustrate an overall summative representation of oxidative stress parameters and the health status of B. bengalensis. Moreover, toxicokinetic-toxicodynamic and species sensitivity distributions studies performed in the study will be helpful for ecological risk management. Therefore, the study concludes that exposure to formic acid affects survivability and behavior by generating oxidative stress in B. bengalensis.*

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