

Biological, biochemical, and molecular parameters of *Helisoma duryi* snails exposed to the pesticides Malathion and Deltamethrin

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Abstract

Aquatic environments get contaminated with pesticides residues that result from the application of pesticides in agricultural practices. The present study aimed to evaluate the pesticides Malathion and Deltamethrin on biological and biochemical parameters of *Helisoma duryi* snails. The results showed that LC10 of the two pesticides caused considerable reduction in survival rates and egg production of treated snails. Glucose concentration in hemolymph of the exposed snails showed a significant increase. On the other hand, albumin in hemolymph and glycogen contents as well as the activities of enzymes in tissues of snails including lactate dehydrogenase (LDH), succinate dehydrogenase (SDH), arginase, and ornithine aminotransferase (OAT) were significantly inhibited. Meanwhile, the activity of AMP deaminase of the exposed snails was significantly increased in the hemolymph in response to treatment. The electrophoretic pattern of total protein showed differences in number and molecular weights of protein bands. DNA concentration was investigated by measuring the intensity of the genomic bands and its showed its increase in the treated snails. It was concluded that the residues of Malathion and Deltamethrin pesticides in aquatic environments have toxic effects on non-target organism, e.g. *H. duryi* snails.