

Impact of the residue of Deltamethrin and Endosulfan pesticides on biochemical toxicity and some neurotransmitter contents in different brain areas of male Albino mice

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ABSTRACT:

Evaluating the action of the residues of pesticides on non-target organisms has been of interest to many researchers. The present study aimed to evaluate the pesticides deltamethrin and endosulfan on biochemical toxicity and some neurotransmitter contents in different brain areas of male albino mice. The results showed that the daily oral administration of deltamethrin and endosulfan caused a significant decrease in neurotransmitter contents (NE, DA and GABA) in most of the tested brain areas (cerebellum, striatum, cerebral cortex, hypothalamus, brain stem and hippocampus). On the other hand a gradual significant reduction, ALT, AST and ALP enzyme activities, while the glucose level and acid phosphatase increase were observed in serum of mice treated with deltamethrin and endosulfan for two weeks. Also, this study has a significant inhibition in the activities of enzymes in liver tissues of treated mice including glutathione reductase. Meanwhile, the activity of lipid peroxide, glycolytic (PK, PFK and GPI) and gluconeogenic enzyme activities (F-1, 6-D-Pase) were significantly increased in liver tissues of treated mice in response to treatment. Additionally, total protein and glycogen content showed a significant reduction in liver tissues of mice treated with deltamethrin and endosulfan for two weeks. It was concluded that the pollution of the aquatic environment by deltamethrin and endosulfan pesticides, would adversely affect the metabolism of the mice.

Keywords:

Deltamethrin, Endosulfan pesticide, Laboratory-bred strain Swiss albino male mice, neurotransmitter contents (NE, DA and GABA).