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Hepatoxicity induced Glyphosate-Based Herbicide Baron in albino rats

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Abstract : Baron is herbicide includes (48% glyphosate) widely used in Egypt. The present study assesses the cytotoxic and genotoxic effect of baron on rats liver. Two groups of rats were treated orally with 1/10 LD 50, (275.49 mg kg -1) and 1/40 LD 50, (68.86 mg kg-1) glyphosate for 28 days compared with control group. Serum and liver tissues were taken at 14 and 28 days of treatment. An inhibition in Alanine aminotransferase (ALT) and aspartate aminotransferase (AST) activities were recorded at both treatment periods and reduction in total serum protein (TP) and albumin (ALB). However, non-significant changes in serum acetylcholinesterase (AChE). Elevation in oxidative stress biomarker malondyaldehyde (MDA) and the decline in detoxification biomarker total reduced glutathione (GSH), Glutathione S-transferase (GST) and superoxide dismutase (SOD) in liver tissues led to increase in percentage of DNA damage. Destruction in liver tissue architecture was observed . Although, Baron was classified in the safe category pesticides repeated exposure to small doses has great danger effect.

Keywords : glyphosate, liver toxicity, oxidative stress, DNA damage, commet assay
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