

Glyphosate-Based Herbicide Induced DNA Damage

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Aim of the study: Glyphosate is currently the top-selling pesticides in the world and its selling keeps on the growcorrespondingly increase in the cultivation of glyphosate-tolerant (GT) transgenic crops. As seen with other pesticides, glyphosate, due to its high water solubility, may contaminate surface and ground waters. The purpose of this study is to determine the effect of different concentrations of glyphosate on pBluescript M13+ plasmid DNA (3.2 kb) in the absence and presence of Cu (II) ions.

Material and Methods: The commercial formulation of glyphosate (Roundup) supplied from a local agricultural pest store, were used. The DNA cleavage assay is a simple, quick, and robust tool for the *in vitro* damage effect chemicals on DNA. Plasmid relaxation assay was used to describe the association of markers of DNA damage with pesticide exposure.

Results: It has been found that the Glyphosate can effectively promote damage of plasmid DNA.

Keywords: DNA cleavage, Genotoxicity, Glyphosate.