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**Cytogenotoxicity evaluation of water contaminated with some textile azo dyes using RAPD markers and chromosomal aberrations of onion (*Allium cepa*) root cells**

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**ABSTRACT**

The *Allium cepa* assay is an efficient test for chemical screening and *in situ* monitoring for genotoxicity of environmental contaminants. This test has been used widely to study genotoxicity of many chemicals pollutions revealing that these compounds can induce chromosomal aberrations in root meristems of *Allium cepa*. In this study, we aimed to determine genotoxic effects of some textile azo dyes by using the *Allium cepa* chromosome aberrations test and random amplification of polymorphic DNA (RAPD) analyses. The onion (*Allium cepa* L.) roots were exposed to different concentrations of three textile azo dyes Lanazol Black B (500 µg /ml), Erichromic red (500 µg/ ml) and 1, 3-Metal complex yellow (500 µg /ml). The results indicated that the root length of *Allium cepa* reduced with an increasing azo dye concentration. A random amplification of polymorphic DNA (RAPD) analysis from the extracted DNA was carried out using ten 10-base pair random primers. Ten primers produced 54 bands between 100-1600 base pairs in gel electrophoresis. The number of disappearing bands in profiles was differenced from one to five bands of azo dyes treatment compared to total bands in control and new bands were appeared in treatments.

The obtained results from this study revealed that the total chromosomal aberrations and RAPD profiles were performed as useful tool for detection and biomarker assays for the evaluation of genotoxic effects on textile azo dyes polluted plants.