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**A study on cell and gene toxicity of soil samples collected along an urban Manila major thoroughfare****Jay Mathias A Arellano**

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This study was done to know if soil along a busy urban Manila major thoroughfare exposed to different pollutants have developed cytotoxic and genotoxic effects on a certain plant cell. Loam soil is the soil type used in this study. Prolonged exposure to unknown environmental pollutants may have rendered the soil from the collection site cytotoxic and genotoxic to certain organisms. The possible cytotoxic and genotoxic effects of the soil extract were investigated using the *Allium cepa* assay. The purpose of this research was to assess the different chromosomal aberrations using the *Allium cepa* assay to prove, if the soil samples have indeed developed cytotoxic and genotoxic properties through years of exposure to environmental pollutants. The soil extracts were thoroughly mixed with triple distilled water to come up with the following concentrations: 100%, 50%, 25% and 12.5%. The root meristems of the *Allium cepa* were then exposed to these concentrations. Maleic hydrazide was used as positive control while triple distilled water was used as negative. Macroscopic and microscopic analyses were performed to score chromosomal aberrations during the mitosis stage of cell division. The results showed that there was no significant difference between the root lengths of the *Allium cepa*, when exposed to different test control concentrations. However, microscopic analysis proved that there were indeed chromosomal aberrations developed between treatments. Chromosomal breaks were the most common chromosomal aberration found on some of the treatments.

**Biography**

Jay Mathias A Arellano has research interest in Ecological and Biological effects of environmental pollutants. He is both a registered Physical Therapist and Nurse in the Philippines and received his Master's in Education major in Health from the University of the Philippines. Currently, he is the Principal and the Head of Research of the Pasig City Science High School, Philippines.

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