

The potential mutagenic effect of the leachates of rural solid waste landfill on *Allium cepa* (L.)

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Abstract

The potential mutagenic effect of raw and simulated leachate from a rural refuse dump site at "Odo Oba", in South-West Nigeria, on *Allium cepa* was evaluated. Roots of *Allium* at about 2—3 cm long were treated with 1%, 2.5%, 5%, 10% and 25% concentrations of the leachate samples for 24 hr. These were then used to prepare slides for the observation of chromosomal aberrations and frequency of mitotic division. Different types of chromosomal aberrations were induced and this was significant at $P < 0.05$ level at all doses tested except at 1% concentration of the simulated leachate. There was also reduction in the number of cells dividing at the tested concentrations when compared with the control. The observed effects may be provoked by genotoxic chemicals found in the leachate samples. This finding may be useful in the practical aspects of waste management and for the assessment of the hazardous effects of the chemicals in the leachate from solid waste dumpsites.

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