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The effect of Environmental Pollution on some biochemical parameters in earthworms (*Esienia Fetida Andrei*)

Asagba Samuel Ogheneovo
Delta State University, Nigeria


The effect of environmental pollution on the activities of aldehyde oxidase (AO), superoxide dismutase (SOD), catalase (CAT) and levels of ascorbic acid (AA) and lipid peroxidation (LPO) in earthworms (*Esienia fetida Andrei*), was studied in three highly polluted locations (Refinery road, Okere market and PTI round-about) in Warri, an Industrial town in the Niger-Delta region of Nigeria, relative to Abraka, a less industrialized town in the same region, which was used as a control study point. The Mean \pm SD values of AO activities (μ mole benzoate / ml) were 0.011 ± 0.0012 for Refinery road, 0.0080 ± 0.002 for Okere market area, 0.0058 ± 0.0013 for PTI round-about area and 0.0022 ± 0.00009 for Abraka study location. The results obtained for SOD activity (Units / g wet tissue) were 24.00 ± 3.80 for Refinery road, 12.00 ± 2.80 for Okere market, 16.00 ± 4.62 for PTI round-about and 5.60 ± 2.50 in Abraka town. For CAT activities ($K \text{ min}^{-1}$), the Mean \pm SD values were 0.98 ± 0.0134 for Refinery road, 1.08 ± 0.061 for Okere market, 0.95 ± 0.018 for PTI round-about and 0.93 ± 0.0125 for Abraka. AA concentrations in

earthworms from Refinery road, Okere market, PTI round-about and Abraka were 0.175 ± 0.0172 , 0.118 ± 0.0148 , 0.109 ± 0.014 and 0.072 ± 0.0040 mg / ml respectively. The values for LPO (μ mole / ml) for Refinery road, Okere market, PTI roundabout and Abraka were also 5.83 ± 0.46 , 4.04 ± 0.58 , 4.25 ± 0.48 and 2.09 ± 0.43 respectively. After statistical analysis, the foregoing results indicate that the levels of AO, SOD, AA and LPO but not CAT were significantly higher in Warri area relative to Abraka. The results obtained suggest that elevation of these parameters in earthworms can be used as bioindicator of pollution.

Speaker Biography

Asagba Samuel Ogheneovo is a Nigerian by birth. He is an alumnus of the University of Benin, Nigeria, where he obtained his B.Sc. and PhD degrees in Biochemistry. He obtained his M.Sc. degree in the same subject from the University of Lagos, Lagos Nigeria. He is highly interested in academic research, which informed his decision to pick up an academic position with Delta State University in 1994 where he has remained till date. He has been a Professor of Biochemistry, since October, 2010 and his current research interest is in Molecular aspects of heavy metal toxicity.

e: asagbabch@yahoo.com

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