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Effect of diesel oil pollution on biomass parameters of plants (*Glycine max L.*, *Vigna subterranean L. verdc.* and *Zea mays L.*) in sandy loam soil

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Field trial was carried out in 2010 cropping season to determine biomass parameters in plants (*Glycine max L.*, *Vigna subterranean L. verdc.* and *Zea mays L.*) as influenced by diesel oil pollution in sandy loam soil at Teaching and Research Farm of Faculty of Agriculture and Veterinary Medicine, Imo State University, Owerri. The experiment was a split-plot design based on Randomized Complete Block design and least significant difference was used in separating the means. The crop plants constituted the main plots and the diesel oil pollution levels (0, 1.0, 1.5 and 2.0 liters) constituted subplots and each treatment was replicated five times. Results showed that diesel oil pollution at different levels (0, 1.0, 1.5 and 2.0 liters) significantly affected the performance of *Glycine max L.*, *Vigna subterranean L. verdc.* and *Zea mays L.* The result obtained showed that the test crops exhibited dose-dependent response to the diesel oil polluted soils. Reduction in root relative growth rate, shoot relative growth rate, root dry weight, shoot dry weight and shoot-root ratio due to effect of high dose (2.0 liters) of diesel oil pollution was significantly different ($P < 0.05$) compared to their control. The result on relative growth rate showed that *Vigna subterranean L.* significantly recorded higher shoot relative growth rate at all treatment levels than *Zea mays L.* and *Glycine max L.* Also, *Zea mays L.* plant showed the highest shoot dry weight in all treatment levels compared to the *Glycine max L.* and *Vigna subterranean L.*, *Vigna subterranean L.* recorded higher root relative growth at early stage compared to *Glycine max L.* and *Zea mays L.*, whereas at mature stage, *Zea mays L.* crop performed better than *Glycine max L.* and *Vigna subterranean L.* This study has demonstrated that diesel oil pollution has a significant effect of reducing the biomass parameters of the test crops, thereby disrupting metabolic activities of these plants leading to poor synthesis of carbon and its subsequent fixation in the matrix of plant tissues.

Biography

Hyginus Ogbuehi is a Lecturer in the Department of Crop Science and Biotechnology at the Imo State University, Nigeria where he has been a faculty member since 2008. He completed his Ph.D. at Imo State University and his Undergraduate/Postgraduate Studies at University of Port-Harcourt River State, Nigeria. His research interest lies in the area of Plant Physiology, Stress Physiology and Environmental Pollution. He has authored over 20 peer-reviewed journal publications.

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