ANALYSIS OF SEASONAL VARIATION OF ATMOSPHERIC TOTAL SUSPENDED PARTICULATE IN SAPELE (URBAN AREA) OF DELTA STATE, NIGERIA

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ABSTRACT
Atmospheric and terrestrial moisture in its various phases is the final weather element of notable import to air pollution. It is generally appreciated that rainfall is probably the most effective cleansing agent in the atmosphere. The particulate matter was captured at ten different locations using SKC Air Check XR5000 High Volume Gravimetric Sampler. The study was carried out between the months of December 2009 – October, 2010 to care of the predominant season. There was a marked difference between the particulate matter captured in the dry season and wet season. The spatial variations were significant and remarkable. During the dry season, the toxicity potential was greater than unity, while in some locations in wet season this was below unity. The mean ambient temperature was in the range of 27.9-29.9°C, the relative humidity was in the range of 75-85% and the mean wind speed was in the range of 0.85-0.95m/s, while in dry season the mean ambient temperature was in the range of 28.65-31.65°C, the mean relative humidity was in the range of 62.20-73.13% and the mean wind speed was in the range of 0.27-1.08m/s. The mean TSP was in the range of 198.86-1202.65 µg/m³. The high particulate loading can be adduced to incessant vehicular emissions, incineration of solid wastes, gas flaring and sawmill exudates.

Keywords: Urban area, seasonal variation, particulate matter, gravimetric sampler
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