World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:11, No:10, 2017

# Impact of Climate Variability on Dispersal and Distribution of Airborne Pollen and Fungal Spores in Nsukka, South-East Nigeria: Implication on Public Health

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**Abstract :** Airborne pollen and fungal spores are major triggers of allergies, and their abundance and seasonality depend on plant responses to climatic and meteorological variables. A survey of seasonal prevalence of airborne pollen and fungal spores in Nsukka, Enugu, South- East Nigeria and relationship to climatic variables were carried out from Jan-June, 2017. The aim of the study was to access climate change and variability over time in the area and their accrued influence on modern pollen and spores rain. Decadal change in climate was accessed from variables collected from meteorological centre in the study area. Airborne samples were collected monthly using a modified Tauber-like pollen samplers raised 5 ft above ground level. Aerosamples collected were subjected to acetolysis. Dominant pollen recorded were those of Poaceae, Elaeis guinensis Jacq. and Casuarina equisetifolia L. Change in weather brought by onset of rainfall evoked sporulation and dispersal of diverse spores into ambient air especially potent allergenic spores with the spores of Ovularia, Bispora, Curvularia, Nigrospora, Helminthosporium preponderant; these 'hydrophilic fungi' were abundant in the rainy season though in varying quantities. Total fungal spores correlated positively with monthly rainfall and humidity but negatively with temperature. There was a negative though not significant correlation between total pollen count and rainfall. The study revealed a strong influence of climatic variables on abundance and spatial distribution of pollen and fungal spores in the ambient atmosphere.

**Keywords :** allergy, fungal spores, pollen, weather parameters
**Conference Title :** ICABP 2017 : International Conference on Aerobiology and Biological Particles
**Conference Location :** Paris, France
**Conference Dates :** October 19-20, 2017