

## POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) CONTAMINATION IN PALM OIL SAMPLES FROM MAJOR MARKETS OF OHAFIA AGRICULTURAL ZONE, ABIA STATE, NIGERIA

Sunday O. Eze<sup>1</sup>, Kalu Uche Nnenna<sup>1</sup> & Christiana N. Eze<sup>2</sup>

1. Department of Pure and Industrial Chemistry, Abia State University, Uturu, NIGERIA

2. Department of Agricultural Economics, Abia State University, Uturu, NIGERIA

### ABSTRACT

Sequel to the extensive use of palm oil in South Eastern Nigeria and the economic importance of Polycyclic aromatic hydrocarbons (PAHs) contamination in foods, palm oil samples collected from 3 major markets each from the 5 Local Government Areas making up the Ohafia Agricultural Zone of Abia State, in South Eastern Nigeria, were assessed for possible PAHs contamination. Fifteen palm oil samples 3 from each in the major markets in the 5 Local Government Areas of the Agricultural Zone were analyzed using Gas chromatographic techniques with a flame ionization detector (GC – FID). The results show very low concentrations of the PAHs in some of the samples while others were below detectable limits. These include chrysene in sample 6- Nkwoachara Uturu in Isuikwuato Local Government Area with level of (0.02µg/kg), Benz(a) anthracene in sample 9- Eke Isuochi Nkwoagu in Umunneochi Local Government Area, (0.01µg/kg), sample 10- Ibom Arochukwu in Arochukwu Local Government Area (0.1µg/kg) and sample 13 – Abuma Ututu in Arochukwu Local Government Area, (0.2µg/kg), sample 1- Ovim Oriendu in Isukwuato (0.02µg/kg), sample 5- Eluama in Isuikwuato, (0.01µg/kg), sample 7- Uzuakoli in Bende, (0.01µg/kg), sample 8- Akawa Nneato in Umunneochi, (0.1µg/kg). Anthracene was detected in sample 10- Ibom Arochukwu, (0.1µg/kg) and sample 13- Abuma Ututu Arochukwu, (0.2µg/kg). While Fluorene was detected in sample 3- Okoko Item in Bende Local Government Area, (0.01µg/kg). The other polycyclic aromatic hydrocarbon were below detectable limits. Therefore, the levels of these polycyclic aromatic hydrocarbons were far negligible based on EPA and WHO standards so all the palm oil samples are considered safe to human health.