



**SDI Review Form 1.6**

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| Journal Name:            | <a href="#"><u>International Research Journal of Pure and Applied Chemistry</u></a>                                                                      |
| Manuscript Number:       | <b>Ms_IRJPAC_20154</b>                                                                                                                                   |
| Title of the Manuscript: | <b>Levels and risk assessment of polycyclic aromatic hydrocarbons PAHs of soils and tubers crops collected from Ikot Oborenyin, South- south Nigeria</b> |
| Type of the Article      | <b>Original Research Article</b>                                                                                                                         |

**General guideline for Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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**PART 1: Review Comments**

|                                     | <b>Reviewer's comment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Author's comment</b> (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <b>Compulsory</b> REVISION comments | <p>In Section 2.3.1. Soil samples were collected and mixed together. This show that, author has taken the aggregate value of the soil pH and PAH level are taken. If actual pH and PAH value were taken the correlation of better precision would be possible.</p> <p>In Section 2.4. There is no reference given for the method of extraction.</p> <p>It is observed that concentration of PAH is found higher in plant than soil. This suggests there is no correlation between soil's PAH and plant uptake, but it is against the accumulation studies reported. This requires more explanation of the uptake process by plants. Since heavier PAH cannot fly far away from the source point.</p> <p>Fig. 5, 6, and 7 show correlation between PAH concentration by plant uptake from soil and plant. It is noticed that the manuscript is lacking the discussion on the fact that why the same PAH has different concentration in different vegetable sample for example Acenaphthylene (Acy) has variation in it uptake by different vegetables.</p> | <p>The sampling technique was Composite sampling (combination of subsamples). Reference for the sampling method is provided in the text. All sampling techniques have inherent limitations.</p> <p>A reference has been provided for the extraction methodology.</p> <p>There is no correlation between soils PAH and plant uptake. This fact is stated in (3.4, referring to figure 8). No accumulation studies are reported this article. Explanations had been provided in the section (see second yellow text in 3.4 ). foliar uptake is the predominant root and references for similar results are provided.</p> <p>Figure 5, 6. and 7 show concentrations of PAH in plants from study and control sites, therefore comparisons were made based on the figures. Comparison of PAH concentrations were made between the plants from the two study sites. (See first</p> |



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|                                         | Fig. 8 shows correlation matrix. The caption of the figure is not properly written it creates confusion. The poor correlation matrix also not properly explained. It requires more explanation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | highlighted text in section 3.4)<br>The caption has been re-phrased. Low correlation between PAH soil and plant are in text ( see reply to comment 3 please).                                                                                                                                                 |
| <b><u>Minor</u></b> REVISION comments   | <p>16 of the PAHs were detected in soil and food crops. PAH composition in soils were dominated by HMW PAHs, conversely, the PAH in food crops were dominated by LMW PAHs. It requires some more discussion on Plant uptake and molecular mass of and pH of the soil.</p> <p>Experimental condition for gas chromatography-Mass spectrometry are not given.</p> <p>Toxicity equivalent factor (TEF) method of risk assessment is used to evaluate the toxicity and assess the risks associated with a given compound. TEF is an estimate of the relative toxicity of a chemical compound to a reference chemical [7]. It will be far better to give the methodology of TEF.</p> | <p>This fact is stated in the text Please see highlighted text 3 in section (last part)<br/><b>SORRY FOR ALL THE HIGHLIGHTING. LINE NUMBERS WOULD HAVE HELPED A LOT.</b></p> <p>The experimental conditions for GC-MS is now included in the methodology.</p> <p>TEF methodology is given in section 2.8.</p> |
| <b><u>Optional/General</u></b> comments |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                               |