



SDI Review Form 1.6

PART 1:

Journal Name:	<u>British Journal of Applied Science & Technology</u>
Manuscript Number:	2013_BJAST_4668
Title of the Manuscript:	Carcinogens: Polycyclic Aromatic Hydrocarbons and Heavy Metal Content in Some Locally Processed Foods in South Eastern Nigeria
Type of the Article	Research paper

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment (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)
<u>Compulsory</u> REVISION comments		
<u>Minor</u> REVISION comments	The subject of the paper is very interesting. The article is generally well written and will serve as a valuable resource for increasing our knowledge on the levels of polycyclic aromatic hydrocarbons and heavy metal content in some locally processed foods. The study led to know that the total concentration of PAHs in long processed (LP) food samples was higher when compared to freshly processed (FP) samples, whereas variations in concentration of individual PAHs in both samples were observed. Benzo(a)pyrene and other PAHs which are probable human carcinogen, were present in varying concentrations in the samples. This study have added to the numerous evidences that processing of food by exposure to heat, flame and smoke encourages the generation of toxic compounds and the nature of the food chain and certain environmental activities can impact negatively on their nutritional content. This therefore places consumers at potential health risk. I suggest going ahead in a future in such a research line focusing on other toxic components. Anyway, I feel the authors should comment on related papers such as: 1. "Analysis of benzo[a]pyrene in spiked fatty foods by second derivative synchronous spectrofluorimetry after microwave-assisted treatment of samples. Food	Thanks for the comments... we have taken note We have accessed some these articles and used them to improve the paper as advised by the reviewer. These can be seen as follows



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	Additives and Contaminants, 2000, 17(12), 957-964.”. 2. “Strategies for the extraction of free and bound polycyclic aromatic hydrocarbons in run-off waters rich in organic matter. Analytica Chimica Acta, 2004, 508(2), 177-183”. 3. “Procedure to measure the level of polycyclic aromatic hydrocarbons in wood ashes used as fertilizer in agroforestry soils and their transfer from ashes to water. Journal of Agricultural and Food Chemistry, 2004, 52, 3900-3904”. 4. "Comparison of strategies for extraction of high molecular weight polycyclic aromatic hydrocarbons from drinking waters. Journal of Agricultural and Food Chemistry, 2004, 52(23), 6897-6903”. 5. “Minimal clean-up and rapid determination of polycyclic aromatic hydrocarbons in instant coffee. Food Chemistry, 2005, 90(4), 643-647”. 6. “Polycyclic aromatic hydrocarbons in smoke from different woods and their transfer during traditional smoking into chorizo sausages with collagen and tripe casings. Food Additives and Contaminants, 2005, 22(1), 1-8”. 7. “Determination of polycyclic aromatic hydrocarbons in alcoholic drinks and identification of their potential sources. Food Additives and Contaminants, 2005, 22(9), 791–797”. 8. "Evolution of the concentrations of polycyclic aromatic hydrocarbons in burnt woodland soils. Environmental Science and Technology, 2006, 40, 759-763”. 9. "Sorption of polycyclic aromatic hydrocarbons to colloid dispersions of humic substances in water. Bulletin of Environmental Contamination and Toxicology, 2007, 79, 251-254”. 10. “Effects of a chemical company fire on the occurrence of polycyclic aromatic hydrocarbons in plant	Lines 26-28; formed from incomplete combustion or pyrolysis of organic materials (such as; coal, oil, gas, wood, fossil fuels and biomass) by a series of complex chemical reactions (3,4). Lines 35-37; and contaminated water. Human exposure to PAH is over 90 % linked to food and it can penetrate food via water and air (7,8). Lines 52-54; Ashes from these woods have been shown to contain significant concentration of heavy metals, and they are also sources of PAH, which are strongly sorbed to the woods matrix (13,14). Lines 226-229; Ashes from these woods have been shown to contain significant concentration of heavy metals, and they are also sources of PAH, which are strongly sorbed to the woods matrix (13,14). Lines 261-267; The industries activities within the areas where these animal foods were breed could affect air quality which may impact negatively on the chemical constituents of food chain especially the plants (33,34) which constituents majority of these animal feed during free ranching as practiced in Nigeria. Studies by Rey-Salgueiro et al. (8) showed that PAH concentrations in plants were related to their surface exposed to air, indicating a significant contribution of environmental air quality to plant PAHs concentration.
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	foods. Food Chemistry, 2008, 108(1), 347-353". 11. "Occurrence of polycyclic aromatic hydrocarbons and their hydroxylated metabolites in infant foods. Food Chemistry, 2009, 115(3), 814-819". 12. "Comparative performance of extraction strategies for polycyclic aromatic hydrocarbons in peats. Journal of Chromatography A, 2009, 1216, 5235–5241". 13. "Survey of polycyclic aromatic hydrocarbons in canned bivalves and investigation of their potential sources. Food Research International, 2009, 42(8), 983-988". 14. "Removal of polycyclic aromatic hydrocarbons from organic solvents by ashes wastes. Journal of Hazardous Materials, 2010, 178(1-3), 273-281". 15. "Feeds and corresponding footprints of residual polycyclic aromatic hydrocarbons and polychlorinated biphenyls based on their constituents. Polycyclic Aromatic Compounds, 2012, 32, 248-264". 16. "Feed ingredients mainly contributing to polycyclic aromatic hydrocarbon and polychlorinated biphenyl residues. Polycyclic Aromatic Compounds, 2012, 32, 280-295". 17. "Searching ingredients polluted by polycyclic aromatic hydrocarbons in feeds due to atmospheric or pyrolytic sources. Food Chemistry, 2012, 135(3), 2043-2051". The science presented is of a high quality with plenty of detail. This is a substantial manuscript that occupies the bounds between environmental and food chemistry. I do express my positive opinion on the acceptance of the article to be published by BJASt after minor revision updating the cited references.	Lines 299-301; Since wood ashes contains heavy metals (13), the long period of roasting increases the amount of wood ashes generated and the possibility of its heavy metal content to volatilize and penetrate the foods. Line 319; water (7)
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<u>Optional/General</u> comments		
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