



**3RD SCHOOL OF PHYSICAL SCIENCES BIENNIAL
INTERNATIONAL CONFERENCE**

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA

25TH – 28TH OCTOBER 2021

ABSTRACT

The present research was conducted to measure the concentration of the natural radionuclides in building materials imposes radiological hazard to human population. Both alpha and gamma radiation are produced from decay chain of uranium and thorium while the potassium itself is a source of gamma radiation. The results showed that the mean activity concentration of uranium value $30.649 \pm 4.6 \text{ Bqkg}^{-1}$ is higher in concrete compare to thorium and potassium values $23.285 \pm 3.492 \text{ Bqkg}^{-1}$ and $10.691 \pm 1.603 \text{ Bqkg}^{-1}$ respectively in bricks and mud blocks. The values of activity concentration for each sample are $30.649 \pm 4.6 \text{ Bqkg}^{-1}$, $36.717 \pm 5.508 \text{ Bqkg}^{-1}$ and $420.98 \pm 63.147 \text{ Bqkg}^{-1}$ for ^{238}U , ^{232}Th , and ^{40}K respectively in concrete blocks, the mean activity concentration values $23.285 \pm 3.492 \text{ Bqkg}^{-1}$, $100.639 \pm 15.095 \text{ Bqkg}^{-1}$ and $707.869 \pm 106.180 \text{ Bqkg}^{-1}$ obtained in brick blocks and values $10.691 \pm 1.603 \text{ Bqkg}^{-1}$, $91.590 \pm 13.738 \text{ Bqkg}^{-1}$ and $759.189 \pm 113.878 \text{ Bqkg}^{-1}$ obtained in mud blocks. The concentrations of the major oxides (Al_2O_3 , SiO_2 , K_2O , CaO , Fe_2O_3 etc) in the samples were determined using Energy Dispersive X-ray Fluorescence technology (EDXRF). High potassium and iron content in the samples might be attributed to the active fault of mountain valley in Minna.

Effect of Hyptis Suaveolens Methanol Leaf Extract on Trypanosoma brucei brucei Infected Mice

Fatima Mohammad Madaki1*, Adamu Yusuf Kabiru1, Emmanuel Olofu Ogbadoyi1, Abdullahi Mann2 and Salawu Muhammad Kazir1

ABSTRACT

The search for new antitrypanosomal drug lead owing to the setback associated with commonly used conventional drugs is highly recommended. In the present study, trypanostatic activity of the methanol leaf extract of *H. suaveolens* was investigated in mice infected with *Trypanosoma brucei brucei* (T.b.b or T. brucei). A total of Twenty (20) mice were selected into 5 groups (A-E) of 4 mice each. Groups A to D were intra-peritoneally inoculated with 0.2 ml of blood containing approximately 106 cells/ml parasite. Group A, B and C mice were treated with 300 and 400mg/kgbw leaf extract of *H. suaveolens* and 3.5mg/kgbw of diminazene aceturate (Berenil®) respectively for 9 days, while group D and E served as negative control and positive control respectively. The level of parasitaemia was monitored on a daily basis. Also, effect of the extract on haematological parameters was investigated. The result revealed a dose dependent decrease in parasite in mice treated with leaf extract of *H. suaveolens* compared with untreated mice. The infected untreated mice also shows significant decrease in PCV, HB and RBC and increase the WBC when compared with the control mice. However, administration of methanol leaf extract of *H. suaveolens* at dose of 300 and 400mg/kgbw increase the level of PCV, HB and RBC and decrease the WBC in a dose dependent fashion when compared with infected untreated mice. It is concluded that *H. suaveolens* inhibited T.brucei parasite and ameliorated the parasites induced anemia in mice. Therefore, could be useful for management of Africa trypanosomiasis

Keywords: Hyptis Suaveolens, Trypanosoma brucei brucei, Methanol, Africa trypanosomiasis

A review on CZTS ($\text{Cu}_2\text{ZnSnS}_4$) synthesis methods and characterisation

T. Yahaya, K. I. Mohammed, A. A. Abubakar and K. U. Isah
 Physics Department, Federal University of Technology, Minna, Nigeria
 yahayatitus250@gmail.com, kimpa@futminn.du.ng, elahmad.abu505@gmail.com
 kasim309@futminna.edu.ng

ABSTRACT

$\text{Cu}_2\text{ZnSnS}_4$ (CZTS) is a p-type semiconductor with high absorption coefficient and a low cost promising absorber material, having a direct band gap from 1 to 1.5 eV, which is ideal for making absorber layer