



Chemical Analysis of Nutritional and Anti-nutritional properties of Groundnut shell and its Waste Management

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Abstract: *The present investigation was aimed at assessing the chemical components present in the groundnut shell extract. Analysis of aqueous and ethanolic extract shows the presence of major nutritional components like protein, carbohydrate, lipid content etc and also anti nutritional components like oxalates, alkaloids, tannin and phenol. The ethanolic extract was also found to be effective against the gram-negative bacteria Escherichia coli. FTIR result shows the presence of tertiary amides and alkenyl like the functional group. The Result of the Atomic Absorption*

Spectrophotometer suggests that the concentrations of Copper and Zinc gradually reduced from 0.225µg/ml to 0.125µg/ml and 0.0024µg/ml to 0.010µg/ml respectively. Hence, the research work suggests groundnut shell waste as a potential bio- absorbent.

Keywords: *Groundnut shell, Atomic Absorption Spectrophotometer, Escherichia coli, FTIR.*

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Introduction:

Arachis hypogaea, the peanut or groundnut, is an annual herbaceous plant in the Leguminosae family, originated and domesticated in South and Central America 3,500 years ago, and is now grown in tropical and warm-temperate regions worldwide for its seeds and their oil. The Legume family is one of the largest families of the plant kingdom that contributes agricultural wastes in the form of oilseed harvest residues. Peanut is the second most important legume in the world on the basis of total production after soyabean (Redden., et.al. 2005). Being an oil seed crop, it liberates a tremendous amount of by-product, of which husks or shells of groundnut are considered as agricultural waste. Peanut shells, also known as peanut hulls, similar with peanut roots, are classified as low value agricultural wastes or agricultural by-products. In