



PHYTOCHEMICAL SCREENING, GC-MS AND FTIR ANALYSIS OF BIOACTIVE COMPOUNDS PRESENT IN VEGETABLES AND FRUITS

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ABSTRACT

Vegetables and fruits are among the most regularly consumed foods because of their physiological effects. This study aimed to check the potential phytochemical substances in the vegetables and fruits of Larkana, Sindh, Pakistan, using qualitative and quantitative analysis. The vegetables and fruits extract screening analysis showed important phytochemicals such as phenols, proteins, quinones, alkaloids, flavonoids, tannins, terpenoids, and carbohydrates. The GC-MS identified different phytochemical compounds. The major components present in vegetables and fruits were Benzoic acid (7.73%), Lupeol (13.44%), 1-Eicosene (11.49%), N-Tetratetracontane (8.41%), 2-Pentadecanone, 6,10,14-trimethyl (9.33 %), Hexadecanoic acid methyl ester (12.89%), Nonadecane (12.19%), 3-Buten-2-one, 4-(2,6,6-trimethyl-1-cyclohexen-1-yl)- (9.14%), Ethyl benzoate (14.43%) and 5-Hydroxymethylfurfural (15.06%). FTIR spectroscopy was also used to identify typical functional groups in freeze-dried materials. Data revealed the strong absorption around 3600-3200 cm⁻¹ due to the O-H stretching vibrations and C-H stretching vibration at 3000-2800 cm⁻¹. The representing C=O and C-O stretching vibrations appeared at 1700-1750 cm⁻¹ and 1200-1000 cm⁻¹. The C-N stretching vibration was observed at 1300-1200 cm⁻¹.