Minerals Analysis by AAS

Material and method:

Medicinal plants were collected from local. After washing, the plants were dried at shade and powdered. The powdered materials were directly subjected to analysis.

Reagents and standards

Analytical grade nitric acid, hydrochloric acid and hydrogen peroxide. Standard sample solutions of Cd, Cu, Fe, Zn, and Na (1000 mg/ml),

Sample preparation

The glassware and polyethylene containers used for analysis were washed with tap water, then soaked overnight in 6N HNO_3 solution and rinsed several times with ultra pure water to eliminate absorbance due to detergent. Accurately weighed (2.0 g) plant samples were transferred into a silica crucible and kept in a muffle furnace for ashing at 450^{o} C for
3 hours and then 5 ml of 6M HCL was added to the crucible. Then, the crucible containing acid solution was kept on a hot plate and digested to obtain a clean solution. The final residue was dissolved in 0.1 M HNO3 solution and made up to 50 ml. Working standard solutions were prepared by diluting the stock sol.

Analytical procedure

Na, Fe, Mg, Mn, Pb, Zn, Cd and Cu in plant samples were analyzed using atomic absorption spectrophotometer equipped with flame and graphite furnace. Air-acetylene flame was used for determination of metal content. The instrument was operated with the following conditions in flame mode: acetylene 1.8 L/min, air 15 L/min, the inert argon gas flow and the temperature parameters were followed as recommended by manufacturer. The absorption wavelength for the determination of each metal together with its linear working range and correlation coefficient of calibration graphs. Data were rounded off suitably according to the value of standard deviation from measurements in triplicate.

Statistical analysis

Results of the research were analysed for statistical significance by ANOVA. This research was performed by three duplicates with a replicate