

Qualitative Study of Medicinal and Food Resources Inorganic Elements with NAT for Health Management

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Life style ailments during these years are usually affected by most of the people from middle age and during recent years; these health problems are being appear even in the lower age too. Nuclear analytical techniques such as PIXE and EDXRF are potential tools to analyze variety of nutritious resources to understand the quality of the respective samples/materials. Inorganic elements also play a vital role in managing health problems, particularly to control life style diseases such as diabetic and blood pressure issues besides some related chronic ailments.

Hair and blood samples of psychiatric patients were analyzed with the determined inorganic elements due to PIXE spectra and observed their abnormal profile. Cu / Zn ratio was found to be higher in the hair samples of male and female patients compared with Nirmal's. For all the cases of disorder; Cu and Zn were reflected their mutual antagonism. Thus, Zn deficiency may cause to rise Cu conc. resulting its toxicity-exhibiting neurological disorders.

Later vegetables, coffee seeds, packed food items, plants having applications for perfume(s) manufacturing etc. were studied by using EDXRF and discussed about the role of different elements observed in terms of their quality and safety of the consumers. Tribal people of hill stations located near to Visakhapatnam were found to use variety of medicinal plants for curing different traditional diseases. These plants were studied by using EDXRF and interpreted the obtained results in terms of inorganic elements role relating to various ailments. Sea weeds and mangroves of Kakinada coast were also investigated to understand their usefulness relating to elements they contained. Food resources such as cereals, pulses, vegetables, coffee beans, medicinal plants, packed food items of Ethiopia were analyzed in terms of nutritional values with inorganic elements for health management. The ratio of Na/K works as a bio-indicator for obstruction of hypertension when the ratio values less than unity. This raises bioavailability of Ca in human beings to enhance bone strength. Rice, pulses and millets were studied and analyzed the observed results in terms of nutritious quality for management of sustainable health based on their macro and micro elements. These raw materials were cooked in aluminium and earth pot utensils to know their elemental modifications on cooking relative to raw materials. These facilitated to assess the role of container along with cooking method for maintaining good health.

Fishes are known to contain different nutritious contribution in food items facilitating to control several health benefits. Marine fishes are large component among fish consumption by the consumers. But sea ports are polluted due to industrial effluents and anthropogenic garbage. Different species of marine fishes were collected during all the seasons belonging to southeastern part of India covering Visakhapatnam and Kakinada ports along with Bheemunipatnam and Pudimadaka to analyze impact of pollution on inorganic elements of marine fishes, which in turn their influence on nutritional values of fishes that contribute health of these fishes' consumers. The average conc of Cd and Zn were found to be higher in the fishes collected during Summer while As, Cu and Fe observed to be higher in the fishes procured in the Monsoon season. Mn and Se seemed to be higher in the fishes belong to Winter season. The estimated daily intake (EDI) values of all the heavy metals of the present studies are higher than the reference dose (RfD). Thus, pollution monitoring in the coastal environment of Visakhapatnam needs to be performed periodically with regard to heavy metals accumulation.

The complete scenario of these investigations can be highlighted during the presentation in the conference.

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