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Effect of Fluorosis on Village Folks of Rajauli, Bihar

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ABSTRACT

Water is a prime natural resource, a basic human need and a precious national asset. Serious problems are faced in several parts of India due to the presence of high concentrations of fluoride in drinking water which causes dental and skeletal fluorosis to humans. The quality and availability of water depend on the way, we use and misuse this precious resource which is the most important life supporting substance. Hence the present study was undertaken for the determination of fluoride in ground water collected at random from 10 villages of Rajauli Sub-division Nawada, District of Bihar in India. It was observed that the fluoride annual average concentration values vary from 1.73 mgL^{-1} to 4.92 mgL^{-1}, Body Mass Index values ranged from adult female 14.7 to 18.6 and adult male 15.2 to 18.9, All of the adult people in each village were sampled for a total of about 1000 people in all 10 villages. On the basis of results obtained in the present study, it has been concluded that all physico-chemical parameters were within permissible limits whereas in case of fluoride, all samples exceeded permissible limit of the WHO and BIS for drinking water. Therefore, drinking water of study area is not suitable for the consumption without treatment. The ground water of ten villages was measured by the SPAND method.

Graphical Abstract

Photographs of skeletal deformed in Rajauli Sub- division of Bihar, India.

Keywords: Groundwater, Fluoride contamination, Dental fluorosis and BMI value, SPAND method, adult female and male, Rajauli Sub-division, Nawada District.