

DRINKING WATER WITH FLUORIDE POLLUTION RISK TO HUMAN HEALTH

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Abstract

Drinking water source was open dug wells but as time passed these wells became dry due to decrease in ground water column. Present day locations under study get the drinking water from bore wells. These water sources are safe and hygienic compared to open dug wells. Health complaints after consumption of this water were alarming and it was envisaged to check their quality by chemical analysis. A systematic investigation of variations in some nutrient levels from 58 locations in Nizamabad mandal, Nizamabad district was carried out from August 2012 to July 2013. 457 samples from bore wells/hand pumps, which serve as drinking water sources in the locations of these studies, were sampled. The present investigation was undertaken to assess the magnitude of pollution by monitoring key water quality parameters like pH, turbidity, alkalinity, total hardness, and various ions such as Ca, Cl, F, Mg NO₃⁻ and SO₄²⁻ by following the standard methods of APHA (American Public Health Association, 1998).

The results showed that fluoride ions and Total Dissolved Solids (TDS) are above the permissible limits for drinking purpose. The pollution with respect to F⁻ is mainly attributed to the extensive use of fertilizers and large scale discharge of municipal wastes into the open drainage system of the area.

Keywords: Ground water, Nizamabad District, Ca, Cl, F, Mg NO₃, SO₄, TDS.