

## **Fluoride and Fluorosis - South eastern part of Anantapur District, A.P**

- Fluorosis is an endemic disease prevalent in 17 states in India
- 70 - 100% districts are affected in Andhra Pradesh, Gujarat and Rajasthan
- 40 - 70% districts are affected in Bihar, National Capital Territory of Delhi Haryana, Jharkhand, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Tamil Nadu and Uttar Pradesh
- 10 - 40% districts are affected in Assam, Jammu & Kashmir, Kerala, Chattisgarh and West Bengal. While the endemicity for the rest of the states is not known.
- The Anantapur district of Andhra Pradesh State, India, is a typical region showing endemic fluorosis caused by drinking water.
- Groundwater (well, hand pump and tube well) is the main source of drinking water for village residents.
- Geological formation is found to be a basic cause for the higher concentration of fluoride in most of the sampling points.
- The present study concludes that alkaline environment is the dominant controlling factor for leaching of fluoride from the source material in the groundwater.
- Several reports on dental and skeletal manifestations of fluorosis are also reported in the study area.
- The worst fluoride affected villages in Anantapur district are  
Ralla Anantapuram, Gunjepalli, Muktapuram, Nallamada, Toletivaripalli, Yerravankapalli, Kothapalli, Pathabathalapalli, Yerikireddipalli, Alampur, Malakavemula.
- Observations in the Study Area
- Dental fluorosis – 0.8-3.5 mg/l of fluoride
- Incidence of physical disability – 5.0 mg/l and above

- Impact of Fluoride on Human Health

- **Dental Fluorosis**

- Fluoride content in water between 1.5 and 2.0 mg/l may lead to dental mottling, which is characterized initially by opaque white patches on the teeth and in advanced stages leads to dental fluorosis.



- **Skeletal Fluorosis**

- Fluoride concentrations in drinking water exceed 4-8 mg/l. The symptoms include mild rheumatic/arthritis pain in joints and muscles to severe pain in the cervical spine region along with stiffness and rigidity of the joints.



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