

Fluorides in some ground water samples of Sailu Tehsil

D.U. THOMBAL, R.U. AMBHURE and S.R.MIRGANE*

P.G.Department of Chemistry, Jalna Education Society's, R.G.Bagdia Arts,
S.B.Lakhotia Commerce and R.Bezonji Science College, Jalna - 431 203 (India)

(Received: April 11, 2008; Accepted: May 25, 2008)

ABSTRACT

Determination of fluoride concentration of thirty ground water samples from different sites in Sailu tehsil of Parbhani district was carried out using ion selective electrode. The outcome of the results were discussed in the light of pollution status of the study area.

key words: Fluoride ion concentration, ground water samples Sailu Tehsil.

Sailu is considered to be the oldest and religious city in Parbhani district of Marathwada region in Maharashtra, Sailu city is situated near Dudhana river. A famous Temple of "Keshavraj Babasaheb Maharaj" is situated in middle of Sailu city. Who was Guru of Shirdi Sai Baba.

The residents of Sailu tehsil usually use water from bore-well for drinking and domestic purposes. There is a huge variation in the concentration of different species due to factors like depth, different land, under groundwater conditions, rain conditions etc. The present work attempts to evaluate the quality of groundwater in Sailu Tehsil of Parbhani district for potability.

In the Present study thirty groundwater (borewell) samples were collected from different sites of Sailu tehsil in brown glass bottles with necessary precautions and preserved as per the recommended procedures¹.

All the Chemicals used were of AR grade, Glass ware used were of 'A' grade. Double distilled water was used through out the work to prepare standard solution².

Fluoride Concentration in aqueous samples were determined with fluoride-Ion Electrode (IRON) and ORION 407 A Ion meter.

Table1 :Fluoride concentration in ground water samples

Sample	Fluoride (F)
1.	0.13
2.	0.18
3.	0.20
4.	0.35
5.	0.31
6.	0.29
7.	0.18
8.	0.21
9.	0.31
10.	0.12
11.	0.17
12.	0.26
13.	0.36
14.	0.13
15.	0.14
16.	0.16
17.	0.15
18.	0.17
19.	0.38
20.	0.11
21.	0.16
22.	0.36
23.	0.17
24.	0.11
25.	0.12
26.	0.37
27.	0.11
28.	0.31
29.	0.21
30.	0.14

25 ml of Aliquot was taken in polythene beaker and 25 ml of (TISAB-III) Total Ionic Strength Adjuster Buffer, ORION Application Solution was added. Ion meter was standardised against solution of known fluoride concentration in the standard sample and read directly on the meter scale. The scale was calibrated in ppm of fluoride concentration in water.

Fluoride has little significance in industrial waters, but in amount of 1 to 1.5 ppm it is an effective preventive of dental caries. Above this amount, fluoride may cause dental fluorosis and skeletal fluorosis. Such water should be defluoridated to reduce the fluoride concentration to the acceptable levels.

In the present work fluoride concentration varied from 0.11 to 0.38 ppm. The values obtained are well below permissible limit, 1 ppm, prescribed by ICMR³.

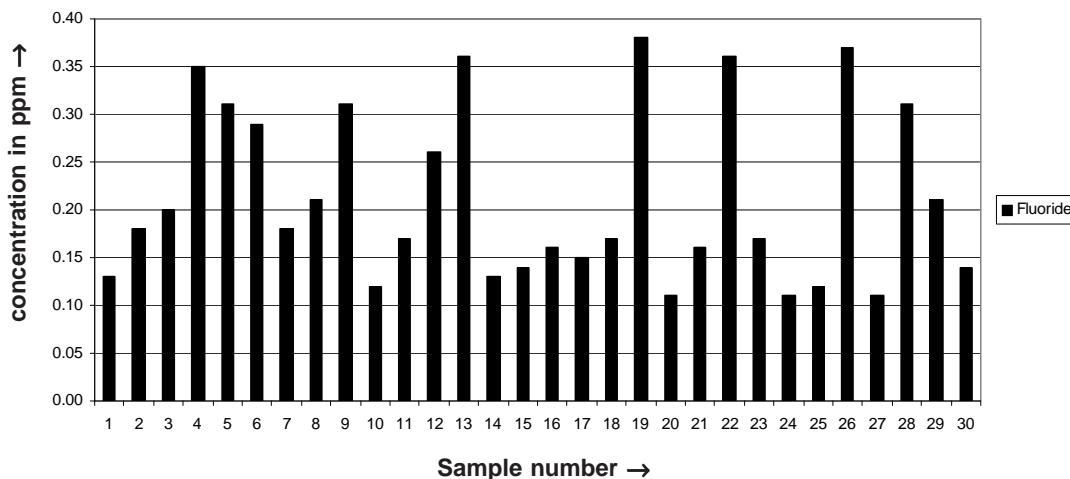


Fig. 1: Variations in fluoride in groundwater in Sailu tehsil

ACKNOWLEDGEMENTS

We are thankful to principal Dr.R.S.Agrawal, Dr.S.M.Deshpande Head of

department, Jalna Education Society, R.G.Bagedia Arts, S.B. Lakhota Commerce and R.Bezonji Science, College, Jalna for providing necessary facilities and help for the present work.

REFERENCES

- American Society for Testing materials, Annual Book of ASTM, Standard, Part-23, ASTM - Philadelphia (1972).
- Text Book of Quantitative Inorganic Analysis 2nd edn, A.I.Vogel, 191, Longman and Green Co, London (1985).
- ICMR Manual of Standards of Quality for Drinking Water supplies, spl, Rep S.No.44, ICMR, New Delhi India (1975)