Drinking Water Analysis of Buldana District, Maharashtra

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ABSTRACT

A symmetric survey was carried out to evaluate the total hardness, iron, chlorides, nitrate and fluoride content in drinking water sources of some villages in Buldana district, Maharashtra. The drinking water samples were collected from the village drinking water sources of fifteen villages. Standard methods were used for the analysis of water samples.

Key words: Water analysis, Buldana district, Maharashtra.

INTRODUCTION

Water, the most abundant and natural commodity. But today it has become precious and scare. This is mainly due to the increase in human population and fast development. The inadequate and irregular supply of water through piped water system has forced the population to use whatever quality of water available in the nearby water sources. This leads to water borne diseases and other health hazards. It is therefore essential to monitor the water supply and quality of water, specially the total hardness, iron, chloride, nitrate and fluoride content in the drinking water samples were analyzed. The total hardness, iron, chlorides, nitrate and fluoride content in drinking causes serious health disorders. Therefore, in the present study attempts were made to evaluate the above parameters in the drinking water samples of various villages of Buldana district of Maharashtra.

MATERIALS AND METHODS

Drinking water samples were collected from the drinking water sources from fifteen villages located in Buldana district of Maharashtra. The samples were collected from the month of January to June and were analyzed for total hardness, iron, chloride, nitrate and fluoride content.

Analysis of water samples was done as per standard procedure[1,2,3,4].

RESULTS AND DISCUSSION

The results of analysis for total hardness iron, chloride, nitrate and fluoride content in drinking water samples of fifteen villages of Buldana district are summarized in Table-1. The analysis report revealed that, the total hardness, iron, chlorides, nitrate and fluoride content in drinking water samples are well within permissible limit as per WHO standards[5,6].

Table 1: Water analysis of fifteen villages of Buldana district.

S. No.	Name of Villages	Water Sources	January					February					March					April					May					June				
			TH	Fe	Cl	N	F	TH	Fe	Cl	N	F	TH	Fe	Cl	N	F	TH	Fe	Cl	N	F	TH	Fe	Cl	N	F	TH	Fe	Cl	N	F
1	Undri	Common Well	440	0.3	250	45	0.2	450	0.2	250	46	0.2	460	0.2	320	44	0.2	462	0.2	230	44	0.2	435	0.3	237	43	0.2	420	0.3	230	42	0.2
2	Vairagarh	Common Well	550	0.2	230	40	0.2	560	0.3	233	42	0.2	562	0.2	310	46	0.2	572	0.2	297	45	0.2	565	0.3	297	48	0.2	570	0.3	290	48	0.2
3	Dongargaon	Water Supply Tank	330	0.3	240	40	0.2	340	0.3	230	40	0.2	360	0.2	242	43	0.1	350	0.2	243	44	0.1	355	0.2	248	44	0.1	320	0.2	238	43	0.1
4	Naigaon	Hand Pump	600	0.3	240	50	0.2	576	0.3	245	52	0.2	597	0.3	248	50	0.2	586	0.3	240	53	0.2	612	0.3	240	48	0.2	595	0.2	230	53	0.1
5	Yenkhed	Hand Pump	620	0.2	240	60	0.2	617	0.2	241	60	0.2	619	0.2	238	58	0.2	615	0.3	245	52	0.1	614	0.2	245	49	0.2	617	0.2	241	59	0.2
6	Hatni	Hand Pump	630	0.2	230	61	0.1	620	0.2	231	61	0.1	610	0.2	227	58	0.2	620	0.	230	57	0.2	625	0.2	233	58	0.2	617	0.2	248	57	0.2
7	Sawargaon Dukare	Common Well	330	0.2	240	46	0.1	334	0.2	241	47	0.1	239	0.2	231	46	0.1	321	0.2	243	45	0.1	319	0.2	244	45	0.1	314	0.2	241	47	0.1
8	Malgani	Common Well	620	0.2	250	47	0.2	630	0.2	256	48	0.2	620	0.2	249	46	0.2	631	0.2	239	45	0.2	632	0.2	256	47	0.2	630	0.2	251	43	0.2
9	Sawana	Common Well	621	0.2	251	48	0.2	622	0.2	554	47	0.2	619	0.2	520	45	0.1	620	0.2	239	47	0.2	618	0.2	251	46	0.2	625	0.2	251	43	0.2
10	Walti	Hand Pump	630	0.3	2.5	49	0.2	631	0.3	250	47	0.2	640	0.3	252	48	0.1	639	0.3	250	46	0.2	629	0.3	253	45	0.2	630	0.3	251	45	0.2
11	Waghapur	Hand Pump	621	0.2	251	48	0.2	622	0.2	554	47	0.1	640	0.3	249	46	0.1	420	0.3	259	48	0.2	632	0.3	54	47	0.2	640	0.3	251	247	0.2
12	Antri Koli	Common Well	600	0.3	240	50	0.2	586	0.3	551	47	0.2	620	0.3	247	47	0.2	620	0.3	259	48	0.2	612	0.3	258	48	0.2	615	0.3	253	46	0.2
13	Wadi Bramhapuri	Hand Pump	630	0.2	252	49	0.2	632	0.2	231	47	0.2	620	0.2	240	46	0.2	630	0.2	252	45	0.2	622	0.2	252	46	0.2	632	0.2	254	46	0.2
14	Wadi Bramhapuri	Common Well	630	0.2	250	48	0.2	640	0.2	251	47	0.2	620	0.2	252	45	0.2	634	0.2	248	46	0.2	620	0.2	249	47	0.2	631	0.2	250	74	0.2
15	Dhodap	Common Well	629	0.3	240	48	0.2	630	0.2	241	46	0.2	620	0.3	240	48	0.2	630	0.3	245	47	0.2	615	0.3	247	49	0.2	618	0.3	248	49	0.2

REFERENCES

1. Jackson R., A Laboratory Manual for Water and Spent Water Chemistry,Van Nostradn Reinhold(1993).
2. APHA, Standard methods for Examination of Water and Waste Water, APHA, AWWA, WPCF, Washington DC 2005, USA, 16th Edn. (1985).
3. Manivasakan N., Physico-Chemical Examination of Water, Sewage and Industrial Effluents, 3rd Edn. (1996).
4. Drioli E., Liganda F. and Criscuoli A., Desalination, Integratted Membrane Operations in Desalination Process, 122-145 (1999).
5. Kothari B., Kumar Swamy N., Environmental Engineering Laboratory Manual, 1st Edn.(1994).
6. Dara S.S., Experiments and Calculations in Engineering Chemistry,3rd Edn.(1991).