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SHORT COMMUNICATION

EVALUATION OF FLUORIDE CONTENT IN DRINKING WATER SAMPLES AND REMOVAL BY MEMBRANE SEPARATION TECHNIQUE

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ABSTRACT

A survey was carried out to evaluate the fluoride content in drinking water sources of villages of Buldana district, Maharashtra. The drinking water samples were collected from the main sources of water supply of twenty villages of the Buldana district. The results revealed that fluoride content of all the samples was well within the permissible limit. The reverse osmosis technique is used to study the defluoridation of water samples.

Water is most abundant and natural commodity, but today it has become precious and scarce. 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 waterborne diseases and other health hazards.

In the present study attempt has been made to evaluate the fluoride content in drinking water samples from villages of Buldana district. The fluoride above permissible limit causes dental fluorosis, skeletal fluorosis, bone disorder and other serious health disorders. Therefore, it is essential to monitor the fluoride content and its effect on human health.

Table 1: The fluoride content in drinking water samples of villages of Buldana district, Maharashtra.

Sr. No.	Name of the Village	Source	Fluoride Content (mg/L)
1	Tandulwadi	Common Well	0.2
2	Kolwad	Nal Yojana	0.6
3	Sagwan	Hand Pump	0.3
4	Jambharun	Hand Pump	0.4
5	Padali	Bore-Well	0.3
6	Dajod Bk	Nal Yojana	0.6
7	Madh	Well	0.4
8	Masrul	Well	0.2
9	Tarakhed	Well	0.5
10	Gummi	Well	0.4
11	Ambhoda	Nal Yojana	0.5
12	Zari	Nal Yojana	0.5
13	Chikhala	Well	0.02
14	Awalkhed	Public Well	0.4
15	Mondhala	Well	0.3
16	Borkhed	Well	0.2
17	Karadi	Tap Water	0.4
18	Bodegaon	Nal Yojana	0.4
19	Deulghat	Nal Yojana	0.7
20	Dudha	Public Well	0.6

Drinking water samples were collected from main sources of water supply from thirty villages located in Buldana district of Maharashtra. The samples were collected in summer season and were analysed for fluoride content. Analysis of water samples was done as per standard procedure (APHA 1985).

The results of analysis of fluoride content in drinking water samples are summarized in Table 1. The analysis revealed that the fluoride in drinking water samples ranges from 0.02mg/L to 0.70 mg/L and all water samples are within the permissible limit of 10mg/L as per WHO standards.

The defluoridation of water samples was carried out by using thin film composite polyamide-reverse osmosis unit. The over all water quality obtained after passing through reverse osmosis unit falls within the permissible limit. Therefore, this technique can be employed for obtaining required quality of water for drinking purposes.

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