**Are Fluoridated Waters Dangerous?**

Too Much in the Water Supply Will Result in Mottled Teeth

By H. V. Smith

According to latest reports 3,700,000 people in 45 states of the United States are drinking water which has been fluoridated to reduce tooth decay which is so prevalent among Americans today. In another year the number using fluoridated water will reach 40,000,000 if nothing is done to disrupt present plans.

Most people in Arizona are acquainted with the harmful effects of too much fluorine which causes mottled enamel of children's teeth. More than 40 papers and reports have been published on the subject from the University of Arizona Agricultural Experiment Station.

"Proper" Amount Necessary

At the same time we recognize that if the "proper" amount of fluorine is ingested, there probably will be a reduction in caries rate and that mottled enamel will not result. The question then is, what is the "proper" amount and how can we be sure the proper amount is being received?

In the first place it has been shown that the same degree of mottling does not occur in all parts of the country even though the fluorine content of the water is the same. This suggests that climatic factors may influence the amount of water consumed. This relationship has not been adequately worked out to assure setting a safe concentration in all parts of the country.

In addition to the climatic factor it is thought that there are variations between individuals in their response to fluorine. If such is the case a concentration of fluorine which might benefit one person might be harmful to another. In fact, the proponents of fluoridation claim that at the recommended fluorine concentration for caries control, 10 to 15 percent of the population can be expected to have mildly mottled teeth. It is hardly fair to produce mottled teeth on this small group in order to benefit others.

Muscular activity is responsible, to a certain extent, for the amount of water consumed by an individual. Those who exercise most are quite likely to consume the most water and therefore ingest the most fluorine. There can be little consistency in the amount of water consumed by people of different occupations or avocations.

**Used in Insecticides**

Cryolite and other fluorine-bearing compounds are commonly used as insecticides. Apples and pears may be shipped in interstate commerce if they contain no more than 7.0 p.p.m. of fluorine. If a child should eat an apple containing this amount of fluorine he would consume the same amount as he would take in 4 glasses of water containing 1.0 p.p.m. This amount is additive to that in the water and could cause a serious type of mottled enamel.

Some natural foods, especially those which contain bones, are rich in fluorine. Other foods which are grown on acid soil in the presence of small amounts of fluorine are abnormally high in fluorine and could be a source of fluorine which might mottle children's teeth. This is especially true if they are also drinking water which has been fluoridated.

**Substitute Measure Offered**

Caries reduction of 30 percent or more is claimed from the use of fluoridated water. The proponents of topical application claim the same percentage reduction in caries by applying a 2 percent solution of sodium fluoride to the teeth of children at the ages of 3, 7, 10, and 13 years. This is the method recommended in U.S.D.A. Extension Service Circular 468, July, 1950.

If topical application is used, none of the criticisms aimed at fluoridation of waters will apply and the same benefits will result. Topical application will be the responsibility of the individual.

Protection costs will be greater with topical application and a smaller percentage of the population will be reached unless a systematic approach is made through the schools. This method seems safe and sane and is not associated with the possible dangers of fluoridating public water supplies.

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**Agroonomists Coming**

The 31st annual meeting of the Western Section, American Society of Agronomy will be held at the University of Arizona in Tucson, July 7, 8 and 9. The first two days will be devoted to reports of research work, and the third to a field trip to experimental areas in Tucson, Sacaton and Mesa.