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Fluoride content in infusions of black tea produced in different regions of Sri Lanka

Tea plants accumulate fluoride. Here, tea consumption significantly contributes to the dietary intake of fluoride. Accumulation of fluoride in the pliant depends on the fluoride levels in soil and ground water. Therefore, tea produced in different regions of Sri Lanka may provide different amounts of dietary fluoride. Previous studies on fluoride content of Sri Lanka tea had not adequately studied this aspect.

In the present study tea samples were collected from fifty estates in different tea growing regions of Sri Lanka. Tea infusions were prepared by adding 125 ML of boiling deionised water to 1.25 g tea and allowing to stand for five minutes.

Following fluoride concentrations were observed in the liquors; Nuwara Eliya – 1.87 mg L^{-1}, Udapussellewa – 2.40 mg L^{-1}, Dimbulla – 1.62 mg L^{-1} , Bogo Vally and Maskeliya – 1.35 mg L^{-1}, Uva – 2.57 mg L^{-1} , Kandy and Matale – 2.38 mg L^{-1}, Ratnapura and Balangoda – 1.52 mg L^{-1}, Galle and Matara – 1.60 mg L^{-1}. Significantly higher fluoride concentrations were found in tea produced in Udapussellewa, Uva, Kandy and Matale regions when compared with tea produced in other regions of Sri Lanka.

Results obtained show that Sri Lanka tea provides 1.37 – 2.05 mg fluoride per day assuming that the daily consumption is 4 – 6 cups. This amounts to 38 – 57% of recommended daily allowance. Therefore, drinking normal amounts of Sri Lankan tea provide significant amounts of fluoride, which is important in teeth and bone mineralisation. However, consumption of normal amounts of Sri Lankan tea alone will not provide excessive fluoride, which could lead to fluorosis.