

COMPARISON OF FLUORIDE EXTRACTION FROM SIMPLE AND FLAVORED GREEN TEA LEAVES INTO BREWED TEA

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SUMMARY: With greater awareness of the beneficial medicinal effects of the compounds in green tea, especially polyphenols, its consumption is increasing. Increased consumption has also followed the introduction of flavored green tea with the addition of various substances to remove the bitter taste that green tea may have. In addition, along with the increased consumption, there has been an increase in the daily fluoride intake and the risk of fluorosis, including arthritis. The purpose of this study was to determine the effect of different additives on the rate of fluoride release from green tea leaves into tea liquor. The concentrations of fluoride, nitrate, sulfate, and chloride concentration were measured in 15 different types of flavored green tea (Refah-Lahijan). The tea was brewed according to the manufacturer's directions. The fluoride concentration was measured with the ion chromatography method. The results analyzed with the Statistical Package for the Social Sciences (SPSS), version 16.0. The results showed that the minimum and maximum concentrations of fluoride in the green tea infusions were 0.162 mg/L (cinnamon green tea) and 3.29 mg/L (peach green bag tea) respectively. The mean concentration of fluoride in the green tea leaves was 52 mg/kg and approximately 89% of the fluoride was released from the green tea leaves into the infusions after brewing. The fluoride concentrations varied significantly in the examined green teas ($p < 0.05$). Furthermore, statistical analysis showed that the additive compounds had no effect on the fluoride release into the infusions ($p < 0.05$).

Key words: Flavored green tea; Fluoride; Green tea; Tea infusion,

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