

## Silis contamination in the flour of Golestan province

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### Abstract

**Background&Objective:** Silis ( $\text{SiO}_2$ ) is an oxide of silicon that its existence in food products is known as a contamination, classified as a human carcinogen. Some suggest it as an etiology of esophageal cancer. Golestan province has a high incidence and prevalence of esophageal cancer and is on the world belt of this disease. This study was designed to determine the concentration of silis in flour produced in Golestan province, north of Iran

**Materials&Methods:** This descriptive study was done in spring 2005. Census method was used to gather flour samples from flour manufactures. Samples were transported to laboratory. Base-melting method in nickel crucible was used in  $550^\circ\text{C}$  and the extract was reduced with acid. The complex was evaluated with spectrophotometer. Data entered into SPSS-12, and the differences between silis concentration in various regions were compared with non-parametric Kruskal Wallis test.

**Results:** Median silis concentration was 0.0030 grams, mean concentration was 0.008760 with 0.004265 standard deviation, minimum was 0.003 and maximum was .018 grams in each 100 grams flour produced in province's factories. Mean silis concentrations were 0.012, 0.01 and 0.003 in Gorgan and the central part of the province, western and eastern part, respectively. The differences were not significant.

**Conclusion:** Although in earlier reports it was shown that silis level in the flour is high, but the findings of this study indicated that the above element is in normal range.

**Key Words:** Silis, wheat flour, Golestan province