



Evaluation of heavy metals content in the canned/packed fruit juices from local and imported origin in Lahore, Pakistan

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ABSTRACT

This study was conducted to determine the mean concentration of heavy metals such as lead (Pb), copper (Cu), zinc (Zn), chromium (Cr), manganese (Mn), nickel (Ni), selenium (Se), magnesium (Mg), and iron (Fe) in canned/packed fruits juices, collected from various stores in Lahore in a period of three months. These juices were categorized into four groups; local packed and canned and also imported packed and canned products. Every group consisted of ten samples. By using the di-acid digestion method, the collected samples were digested and analyzed under Atomic Absorption Spectrophotometer (AAS). The results indicated that the mean values of 7 out of 9 tested heavy metals including Pb, Mg, Ni, Fe, Cr, Se and Mn were above permissible limits (set by WHO) in all four understudy groups. Therefore, it was concluded that commercially available fruit juices are not all safe according to their heavy metals content for the human consumption despite their nutritive values.

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1. Introduction

The heavy metals such as chromium, lead, nickel, zinc, copper, arsenic, cobalt, manganese, cadmium and mercury in food are important contaminants, because all of them are toxic at a certain level. Exposure of heavy metals to humans is mainly by diet, therefore dietary intakes should be monitored to quantify them.

Recently, consumption of fruit juices has increased by considering them as an essential part of healthy diet as they contain many nutrients like minerals, trace elements, vitamins, and photochemical antioxidants (1,2). They contribute significantly to the good health of people irrespective of their ages (3). Fruit juices work

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