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Determination of Heavy Metal Levels in One Portion of Some Fruits and Vegetables by ICP-MS Method

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Aims: This study was carried out to determine the heavy metal levels in one portion of some fruits and vegatables thats old in different local markets of Istanbul and to examine the effects of the results on human health.

Materials and Methods: This study was conducted in March 2017. Apple as fruit; carrot, potato and spinach as vegetables are selected. Samples were taken from the local markets in Kartal, Maltepe and Sarıyer districts. The analysis of the samples was carried out by Agilent 7700 ICP-MS instrument in Central Laboratoryof Yıldız Technical University. The calculations have been done on the net amount, which obtained by removal of the calculated waste amount of the analyzed nutritions from the gross one gram of portions.

Results:

Fruits&Vegs. HeavyMetals	**Carrot**	**Potato**	**Spinach**	**Apple**
Arsenic (µg)	< 0,057	< 0,051	1,5	<0,068
Cadmium (µg)	4,3	5	10,9	4,8
Lead (µg)	33,6	29,7	53,5	40
Mercury (µg)	<0,025	<0,023	<0,038	0,031

As seen in table above, arsenic content in the spinach was found to be highest as well as cadmium and lead contents. Arsenic, lead and mercury contents found to be the lowest in potato per portion.

Conclusion: According to Turkish Food Codexand JECFA(Joint Expert Committee for Food Additives) limits, cadmium and mercury are below the limits and lead datas are above the limits. There is no limit for arsenic. To make assessments on human health, there is a need for more studies in this area.

Biography:

Fatma Esra Gunes has graduated from Hacettepe University, Nutrition and Dietetics Department in 1991, got her master degree from Department of Public Health, Faculty of Medicine, Selcuk University in 1994, her master thesis was “Determination of vitamin C levels in the blood and urine of young people who are smoker and nonsmoker” and got her PhD from Department of Food Hygene and Technology, Veterinary Faculty, Selcuk University in 2007, her doctorate thesis was “The use of malt extract in production of yogurt and cheese”.

Interested in nutrition ecology, public health and epidemiology, nutritional epidemiology, food technology, clinical nutrition and nutritional medicine. Works since the December of 2008 at the Department of Nutrition and Dietetics of Health Sciences Faculty of the Marmara University, and is Associate Professor and the head of the department since 2016.