

## Heavy metal and pesticide contents in soil and plant products from Shahre-Ray agriculture area

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**Background and Aims:** The aim of this study was to assess the levels of selected heavy metals and pesticides in soil and some crop products from an agriculture area of Share-Ray and indicate probable sources and risk of contaminants.

**Methods:** Soil, some Vegetables and crop samples from most important agricultural areas near Share-Ray were collected from January 2011 up to April 2012. Metal contents were detected by Atomic Absorption Spectrophotometer and pesticide residues were analyzed by gas chromatography – mass spectrometry after extraction performed using solid- phase micro extraction technique.

**Results:** Soil characterization investigated by specialized research group in Sanati sheriff University and revealed that the soil was heterogeneous and belonging to different groups. The concentration of Copper, Zinc and Nickel in soil samples do not exceed the limits established by international regulations. The levels of herbicides, insecticides ( Diazinon and Chlroridazon and Fenitrothin) were detected only in 5 samples of soils but the Lead and Cadmium contents were detected in the most of samples higher than maximum levels.

**Conclusions:** The study on vegetable samples showed that the concentration of Pb and Cd and some pesticides were much higher than soil especially in lettuce and cabbage products. Farmers probably use higher amounts of plant protection products or fertilizers than they should, either due to their ignorance, or because they want to increase their production quickly when the prices of their products in markets are high.

**Keywords:** Shahre-Ray; Agriculture area; Heavy metals; Pesticides; Soil