

Consumption of Heavy Metal and Minerals by Adult Women through Food in Sewage and Tube -Well Irrigated Area around Ludhiana City (Punjab, India)

B L Kawatra and Poonam Bakhettia

*Department of Food and Nutrition, College of Home Science, Punjab Agricultural University,
Ludhiana 141 001, Punjab, India
E-mail: drcbakhettia@hotmail.com*

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ABSTRACT A dietary survey was carried out during summer and winter seasons on 20-40 years old subjects i.e. 23 and 49 women from sewage and tube well irrigated areas, respectively around Ludhiana city (Punjab, India). Raw food samples from both the areas were analyzed for various minerals. Mineral intake by individual subjects were calculated from the amount of food consumed and mineral contents of foods. The data revealed that intake of lead by women in sewage irrigated area was almost twice the amount compared to women from tube well irrigated area. However, intake of lead was below the maximum tolerable limits, except by women in sewage irrigated area during summer season. Intake of cadmium in both the areas was 2-3 times higher than the prescribed tolerable limits in sewage irrigated area. The intake of nickel was higher by women subjects in sewage irrigated area, however, intake of nickel in both the areas was much below the maximum tolerable limits. Intake of copper was much higher than ICMR's suggested values while that of zinc was comparable to allowances in both areas. Manganese values were significantly higher in women from tube well irrigated area while that of iron was more in women from sewage irrigated area. Mineral intake reflected the mineral content of the foods consumed, because the mineral content of most vegetables was higher in sewage irrigated area except for manganese and zinc. Mineral content of drinking water was not much different.