

ABSTRACT

Cadmium in Manchester Soils: A Potential Health Hazard?

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Cadmium is a harmful element with no proven essential metabolic function. A geochemical survey of Jamaica found abnormally high levels of this element in the soils, with levels up to 900 mg kg⁻¹, exceeding by orders of magnitude values found in the literature for soils in other countries. The highest concentrations were found in the parish of Manchester in southwestern Jamaica.

A survey in which food and yard dust samples were collected was carried out across Manchester to examine any effects cadmium in the soils might have on the residents. Morbidity records were obtained for the entire parish and compared with those for the other parishes in Jamaica.

The morbidity data were supplemented by a survey in which the population living in areas where cadmium concentrations exceeded 113 mgkg⁻¹ and a nearby control area where concentrations were below 4

mgkg⁻¹ were studied to investigate the possible health effects of exposure to abnormally high soil cadmium levels. Food, water and house dust samples from both areas were analysed for the presence of cadmium and a questionnaire survey undertaken to garner information on the health history and status of residents in the areas.

The levels of cadmium in the water was not significant and while elevated levels were found in some foods and house dust, it would appear that the high levels of zinc present and also the cleanliness of the homes lowered the availability of this potentially harmful element.

Both the questionnaire survey and the morbidity records failed to show any obvious impact of the metal on the health of the exposed population.

Keywords: cadmium, health, availability