

THE GEOCHEMISTRY OF IODINE IN WATER FROM A HIGH
ENDEMIC GOITRE AREA IN SRI LANKA

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The link between iodine and endemic goitre is one of the best recognised geochemical associations between a trace element and human health. Endemic goitre is a health problem of national importance in Sri Lanka and certain districts, particularly in the wet zone, have high incidence of endemic goitre. The chemical quality of groundwater in the area of around Angunawela in the Kandy District, which has a 38-40% (Dr K B Herath - Director, Nuclear Medicine Unit, University of Peradeniya - Personal Communication, 1987) of endemic goitre was investigated. A total of 60 drinking water wells were sampled. It was revealed that 90% of the water wells had less than 100 ppb of iodine. The total alkalinity, chlorides, pH, nitrate, total hardness fluoride and Fe and Mn levels were also measured and chemical contour maps of the area prepared. It was observed that the groundwater was slightly on the alkaline side and the average nitrate level was 8.5 ppm. The chloride levels ranged between 20 to 100 ppm while the total Fe content had a range of 520-2430 ppb. A cluster analysis and classification of the groundwater in the area studied showed that the high goitre region coincided with very low values for iodine and other chemical parameters, as compared to the non-goitre regions.