AJES
ASIAN JOURNAL OF ENVIRONMENTAL SCIENCE ■ VOLUME 7 | ISSUE 2 | DECEMBER, 2012 | 135-140

RESEARCH ARTICLE

Assesment of ground water pollution using peizometer techniques in Coimbatore district of Tamil Nadu, India

■ T. SHERENE

Article Chronicle :
Received **:**
10.04.2012;
Revised **:**
12.08.2012;
Accepted **:**
12.09.2012

SUMMARY : In order to monitor the ground water quality, peizometer (ground water monitoring wells), studies were conducted at different places of the study area, each representing the heavy metal hot spots. The results inferred that the toxic concentrations of Pb and Ni were seen in water samples collected from rhizosphere zone and ground water of Ukkadam, Ganapathy, Pilamedu, Kurichi and Nanjundapuram villages of Coimbatore district. Keeping the rhizosphere zone devoid of toxic Pb and Ni metals, is essential to take up cropping activities thereby avoiding bio magnification. The toxic concentration of Pb and Ni in rhizoshphere zone (0.5 m) and ground water (2.0 m) and in between these two depths (1.0 m) were studied in this experiment. The place Ukkadam in Coimbatore district stands first in Pb pollution because of continuous sewage irrigation practices to agricultural fields followed in those areas. Hence, food crop cultivation in those areas may lead to adverse effects on animals and human beings. Similarly, the place, Ganapathy in Coimbatore district occupies first in Ni pollution. Hence, it may cause ill effects to food chain. The continuous letting of untreated effluents of electroplating industries may be the root cause for Ni pollution in Ganapathy. The lead content ranged from 1.81 to 11.81 ppm and Ni content ranged from 3.95 to 17.85 ppm in ground water of study area. The severe ground water pollution was noticed for Pb at Ukkadam village and for Ni at Ganapathy village of Coimbatore district. Hence, the soil and ground water of those places may not be much useful for agricultural practices as well as human consumption; unless the routine practices of sewage irrigation and letting of untreated effluents on the land may be stopped.

HOW TO CITE THIS ARTICLE : Sherene, T. (2012). Assesment of ground water pollution using peizometer techniques in Coimbatore district of Tamil Nadu, India. *Asian J. Environ. Sci.,* **7** (2): 135-140.

Key Words :
Peizometer, Ground water pollution, Rhizosphere zone

Author for correspondence :
T. SHERENE
Cotton Research Station, T.N.A.U. Veppanthattai, PERAMBALUR (T.N.) INDIA
Email: shereneraj@yahoo.com

Environmental pollution is a by-product of development and in fact a price for progress. The history of pollution faithfully reflects the progress of technology and mankind's failure to design social and political institution, which is capable of properly assessing and controlling technological innovation. Now, modern civilization is completely depending on a large range of metals for all aspects of daily life. The increasing world population and the increasing annual metal usage per capita leads inevitably to ecological problems because of wide dispersal of potentially toxic metals into the natural environment. The water-soluble Pb levels measured are far in excess of the 50 mg L^{-1} drinking water standard (USEPA, 1976). Pande and Sharma (1999) reported that Pb could enter in river water through lead joints of C.I. pipes and lead pipes used for connecting, plumbing fixtures (wash-basins, kitchen sinks etc.).

International standards for drinking water (mg L^{-1})		
Element	Maximum permissible USEPA standards	WHO standards
Pb	0.05	0.1
Ni	0.01	0.01

(De, 2000)

The Pb and Ni levels in water (mg L^{-1}) of lakes in urban Coimbatore were given by Mohanraj *et al*. (2000). They stated that the Pb and Ni content of water of few lakes exceeded the prescribed WHO limit for drinking water.

The Pb listed as a regulated hazardous air pollutant under the U.S. clean Air Act, and is one of the most common heavy metals found in the