

**Determination Of Lead, Cadmium And Cobalt In Nigeen Lake Kashmir**

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**ABSTRACT:** The Dal Lake is famous throughout the World for its beauty and unique physiochemical characters. But due to increase in population Dal Lake directly as well as indirectly has been influenced. The present study was undertaken to study the concentration of some metals in the Lake. The mean value of Lead observed was 0.087mg/l, Where as cadmium was 0.053 mg/l, and cobalt was 0.194 mg/l. Due to various anthropogenic activities and increase in pollution the water of the Lake has deteriorated. Hence the current work has been undertaken to investigate the presence of metals in the lake.

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**Key words:** Dal lake, water, Lead, cadmium, cobalt.

**Introduction**

The valley of Kashmir is a land of Lakes, rivers, flowers and fast running streams. The important ones being the Wular Lake, the enchanting Dal Lake, The Manasbal lake, The Anchar lake, The Nigeen lake, The Jhelum river, Snow fed streams like the Sind stream, The Lidder, The Erin and The Madumati.

The Dal Lake is famous throughout the World for its beauty. The quality of lake water has altered by human activity, geological nature of the catchments area and yearly rate of the rainfall. Khan & Zutshi reported primary productivity and trophic status of Naran bagh Lake and Limnological studies on Dal Lake from Kashmir on Indian side. Leghari *et al.*, reported Limnological studies of Tatta Pani Hot springs and River Punch at Tatta village District Punch, Azad Kashmir. However, the reports on the

Limnological studies of lakes in Jammu & Kashmir are not available. The present work examines the water quality, of the Dal Lake Kashmir.

The present work examines the water quality, of the Dal Lake Kashmir. The metal ions, Pb, Cd, and Co were determined with Varian Spectra AA-20 atomic absorption spectrometer with standard burner head and air acetylene flame. The analysis was carried out in triplicate with integration time and Mg were determined after appropriate dilution. Sample (250ml) containing nitric acid(1 ml) was heated gently at 90-95°C and was concentrated to about 15-20 ml. The solution was then transferred to volumetric flask and final volume was adjusted to 25 ml. The solution was analyzed by air acetylene flame Atomic absorption spectrometer.

**Table 1.** The concentrations of major metal contents were found higher in autumn might possibly be due to less dilution in the season

| Particulars               | Result Mean  |
|---------------------------|--------------|
| Lead                      | 0.087mg/l,   |
| Cadmium                   | 0.053 mg/l,  |
| Cobalt                    | 0.194 mg/l   |
| Temperature of air (oC)   | 25           |
| Temperature of water (oC) | 19.33        |
| Colour                    | Bluish green |

The results of physicochemical analysis of the parameters was calculated. The pH of the Lake varied from 6.5 to 7.1. The significant changes were not observed in the measurements of pH, electrical conductivity, orthophosphate, acid Hydrolysable phosphate, nitrite, nitrate and organic nitrogen. The dissolved oxygen (DO) measurements for the lake,

obtained during the monitoring period, indicated a variation range of 3.66-5.12 mg/L. The increasing trend of DO concentration during winter is due to decrease in water temperature. The chloride concentration of the lake water indicated the variation of 43mg/L to 85mg/L. The concentrations of major metal contents were found higher in autumn might

possibly be due to less dilution in this season (Table 1). The minor metal contents showed seasonal variation without any specific pattern may be because of anthropogenic factors .

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