

# ACCUMULATION OF CD, CU AND PB IN THE ZOOPLANKTON OF COASTAL WATERS NEAR LATTAKIA CITY, SYRIA

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This study reports on the accumulation of some heavy metals (Cd, Cu and Pb) in some zooplanktonic groups from the Syrian coastal waters near to Lattakia city (Eastern Mediterranean), during the period August 1991 - September 1992.

Copper, cadmium and lead were determined in the coastal waters and some zooplanktonic groups in Lattakia region of the Syrian coast. The study was carried out from February 1991 to October 1992. Seawater and zooplanktonic samples were collected from three stations, along the coast, having different characteristics being directly influenced by riverine, urban and industrial discharges. Station 1 (reference station) is located in front of the Marine Research Institute far from the various sources of pollution in Lattakia city; station 2 is in the entrance of Lattakia harbour, and station 3 at 0,5 mile, approximately, from the Al-Kabir Al-Shimali river estuary. All isolated zooplanktonic groups had been analyzed for these metals, using a digestion method with suprapur nitric acid and employing a Perkin Elmer 2380 Atomic Absorption flame Spectrophotometer.

The heavy metal concentrations in coastal waters ranged between 0.5 to 5.7, 0.09 to 0.8, 0.4 to 2.9 and 0.4 to 0.9 ug/l for Cu, Cd, Pb and Zn respectively. The study shows variations in the concentrations of these metals depending on the different characteristics of each station.

The metal levels in copepods (most abundant zooplanktonic group) were between 5.0 to 103.0 and 0.0 to 217.0 ug/g dry weight for Cu and Pb respectively. The concentration of Cd in copepods ranged between 0.0 and 4.7 ug/g dry weight in 90% of samples, with the rest 10% showing higher values (see table).

The analysis of other zooplanktonic groups : herbivores (pteropods and larva of crustaceans) and carnivores (chaetognaths and isopods) show, relatively, lower values for the same metals, and hence are of lesser significance.

| Date       | Station 1 |    |     | Station 2 |    |    | Station 3 |     |     |
|------------|-----------|----|-----|-----------|----|----|-----------|-----|-----|
|            | Cd        | Cu | Pb  | Cd        | Cu | Pb | Cd        | Cu  | Pb  |
| 26.08.1991 | ND        | 16 | 8   | ND        | 30 | 19 | ND        | ND  | 124 |
| 16.10.1991 | ND        | 5  | ND  | ND        | 4  | ND | ND        | 12  | 6   |
| 30.04.1992 | ND        | 40 | ND  | ND        | ND | ND | ND        | 19  | ND  |
| 26.05.1992 | NM        | NM | NM  | ND        | 8  | 54 | ND        | 103 | 103 |
| 04.07.1992 | 51        | 5  | 102 | 5         | 6  | 47 | 2         | 27  | 14  |
| 05.08.1992 | 91        | 45 | ND  | 3         | 24 | 28 | ND        | 85  | ND  |
| 10.09.1992 | ND        | 95 | 57  | ND        | 39 | 63 | ND        | 64  | 217 |

ND: Not Detected

NM: Not Measured

Table 1: Cd, Cu and Pb concentrations of copepod samples (ug/g dry weight) collected from Syrian coastal waters near Lattakia city.

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