**EFFECT OF WATER POLLUTION ON THE FISH *LABEO ROHITA* (ROHU) OF RIVER GODAVARI, AT NATHSAGAR DAM (PAITHAN), NEAR AURANGABAD**

## PROJECT SUMMARY

Heavy metal contamination in the aquatic environment is a potential treat for aquatic organisms, when exposed to significant amounts of metals as consequences of industrial, agricultural and anthropological activities. Heavy metals at high concentrations can cause harmful effects on metabolic, physiological and biochemical systems of fishes and it causes long-term eco-toxicological effects. Chromium is also a compound of biological interest, probably having a role in glucose and lipid metabolism as an essential nutrient. Chromium compounds have been found to be mutagenic and carcinogenic. Among the heavy metal, chromium is an important pollutant from industrial effluents and causes deleterious effects on non-target aquatic organism resulting imbalance of an ecosystem. It is also listed among 25 hazardous substances that pose threat to human health. Nickel is ubiquitous traces metal and occurs in soil, water, air and in the biosphere. It is emitted into the environment from both natural and man-made sources. Once released to the environment, nickel readily forms complexes with many ligands, making it more mobile than most heavy metals. The industrial wastes generally contains high quantities of dissolved and suspended solids, organic and inorganic chemicals, high BOD and COD, oils and grease, besides toxic metals which cause deleterious effects on the freshwater fish when discharged into water bodies. The bioaccumulation of heavy metals in living organisms and biomagnifications describes the processes and pathways of pollutants from one trophic level to another. Various species of fish are mostly used as bio-indicators of heavy metals contamination. The acidic conditions of aquatic environment might cause free divalent ions of many heavy metals to be absorbed by fish gills. The concentrations of heavy metals in organs of fish show that the aquatic environment is polluted. Heavy metal concentrations in the aquatic organism depict the past as well as the current pollution load in the environment in which the organism lives.

In the current investigation of freshwater fingerlings *Labeo rohita* was used, because it is one of the most common Indian carp and withstands a wide range of experimental conditions. It occurs in the principal rivers of India and is a moderately fast growing freshwater major carp. In addition, it is of great commercial importance and renowned for its taste.

The studies reveal that the water of Godavari River carries different heavy metals as well as alkalinity and hardness is extra. But, still it is below the permissible level as a drinking water. The alkalinity and water hardness is mainly due to the domestic sewage, use of fertilizers and industrial effluents. Similarly, the amount of heavy metals observed in the water is due to use of heavy chemical fertilizers, industries dumping their effluents directly in the river and domestic sewage.

There is need to make people awareness of water pollution and its effects on man and aquatic organisms. The industries situated on the banks of Godavari River, should be regularly checked and dumping of their industrial effluents should be pre treated before liberating out of the industrial area.

Godavari River is the main river in Western Maharashtra, which gives water to large number of people for irrigation, drinking and domestic use. There are large numbers of aquatic animals, like fishes, which are used as food throughout the state. The life of these fishes can be saved by people awareness and responsibility.

In view of the importance of fish to diet of man, it is necessary that biological monitoring of water and fish meant for consumption should be done regularly to ensure continuous safety of the seafood. Safe disposal of domestic sewage and industrial effluents should be practiced and where possible, recycled to avoid these metals and other contaminants from going into the environment. Laws enacted to protect our environment should be enforced. The activities at the upper-course of the Godavari River should be kept under strict surveillance as they are capable of increasing the heavy metals discharge into the rivers, especially as population is bound to increase. The values reported in this study can serve as baseline data to monitor future anthropogenic activities along the coast, now that a Liquefied Natural Gas Terminal and oil refineries are to be located in the area. The study showed a need for continuous pollution assessment study of aquatic organisms in Godavari River.