



## Improvement of water quality of Adalatganj Area, Patna by Vermifiltration

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**Abstract :** Water is one of the precious natural resources present on the earth and it is vital for the survival of living being. The present study mainly focus on the groundwater quality. Removal of various metals is one of the important and widely investigated area of research. In our present study, a survey was carried out in the study area, Adalatganj, Patna regarding the quality of water used. The efficiency of earthworm *Eisenia fetida* in bio-remediation of iron contaminated water has been investigated. The groundwater samples of Adalatganj were tested and analysis of Fe concentration in Atomic Absorption Spectrophotometer showed that there was significant decrease in the concentration of iron when treated in both the conventional method (without worms) and through vermifed

with earthworms *Eisenia fetida* as compared to the concentration of Fe in raw groundwater sample of Adalatganj in which the concentration of Fe was high. The test for bioaccumulation showed that the tissues of worms accumulated iron in higher concentration. The result indicated that the earthworms can accumulate Fe in their body tissues and bioremediate iron contaminated water.

**Keywords:** Iron, Bioremediation, Earthworms, *Eisenia fetida*.

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### Introduction :

Water is one of the earth's most important resources and its quality is totally dependent on geological environment, recovery, utilization as per need and human activities like domestic, industrial or commercial, mining operations, agricultural etc. In short freshwater is directly linked with human welfare as it is vital concern for human kind. But today most of the surface and subsurface water bodies are unfortunately under the environment stress. There is a high risk of contamination of water by percolation, surface runoff. Human health is threatened by most of the agricultural development activities (Phadatare and Gawande, 2016).