

Preface

In the modern age of science and technology the quality of our environment is deteriorating rapidly. Pollution problems are becoming more and more acute due to rapid, ecologically unplanned industrialization and urbanization. Air, water and soil are the most important components of environment on which human life is dependent and so to maintain the better of these components to a degree that human life is not adversely affected, is our collective responsibility.

A delicate balance exists between man and environment; lately this balance has been seriously disturbed by man's direct as well as indirect activities. Thousands of toxic contaminations of various types viz. inorganic, organic and organo-metallic have found their way to our environment. Many of them are highly toxic at trace level; some have long biological half-lives and consequently will remain toxic for a long time. The extent of this contaminant is so vast that the food we eat, water we drink and air we breathe are suspected to contain a number of toxins. This led to environmental deterioration and constant threat to our natural resources.

Deterioration of environment has been taking place all around us. Pollution of water, air, soil and the food has created a definite public hazard, which usually causes slow development of chronic and non-specific symptoms of toxicity. At times, these exposures may be acute nature as well. Accumulation and bio-magnification of these toxic materials in biosphere pose a serious problem.

India is fast developing country by its economic point of view. The economy of India is based on the agricultural based economies. In this context sugar mills play a vital role to enhance the agricultural based gross domestic product (GDP) of India. In spite of the source of economy, sugar industries are serious issues for environmental pollution due to excess exhaust of the hazardous pollutants.

Balrampur Chini Mill (BCM) Pvt. Ltd. is the major sugar industry of India by its production point of view. It is located in the Balrampur district of Uttar Pradesh (U.P.). During the running season of BCM, a huge load of different kinds of pollutants are discharged through its sugar effluents. These sugar effluents are transferred to the river

Rapti passing through various channels/nullah, which yield the seepage and percolation of hazardous pollutants of effluent and these pollutants ultimately mixed with the groundwater of surrounding areas of this industrial unit. The contaminated groundwater adversely affects to human beings, cattle and vegetations.

The present study deals with Studies on Groundwater Pollution near Industrial Areas and Its Irrigational Impact on Some Pulse Crops. . In Balrampur there are about 72 small and big industries working in defined industrial area. Out of these, Balrampur Chini Mill (BCM) Limited including one sugar mill and distillery is in close vicinity of populated areas of Balrampur. The BCM Ltd. is the largest sugar factory of India by production point of view. The effluent releasing from these industries, after percolating gets mixed with groundwater which is mainly use for potable and irrigational proposes to various to various crops and pulses. The fields are available near the industrial areas which are used for growing pulses. About 90% growing pulses in Industrial areas which are irrigated by the effluent mixed groundwater which affect adversely and are prone to susceptible by various disease. Therefore the present study is to see the groundwater qualities near industrial area and its irrigational impact on pulse crops. The main emphasis is given to the mainly two pulse crops viz. *Cicer arietinum* L. and *Pisum sativum* L.