

C.P.-67 : EVALUATION OF POLLUTION STRESS ON RIVER WAINGANGA, (DIST-BHANDARA) WITH SPECIAL EMPHASIS ON PHYSICO-CHEMICAL PARAMETERS CO₂ AND pH.

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ABSTRACT

The domestic wastes that are released in the river and certain religious activities that are performed on the bank of rivers have resulted in the deterioration of the water quality these days. Every river faces a serious threat not only to its own health but also to the community dependent on this water source.

Pauni which is small town in Bhandara district is blessed with river Wainganga. The river water caters the need of the residents of Pauni. The total population of Pauni is around 25000. The river water is highly polluted by the effect of human activities only. In the present investigation an attempt has been made to assess the extent of pollution and its impact on potable water quality on the basis of two parameters pH and Carbon dioxide in river water.

The data collected weekly over a period of two years from different sampling stations along the stretch of river in vicinity of Pauni town showed the seasonal variations of pH and carbon dioxide. The pH showed general variations from upstream to down stream. Carbon dioxide was found to be maximum in summer reaching up to 22.91 ± 0.66 mg/l but was noted to be reduced to a minimum of 03.75 ± 0.62 mg/l during rainy season in the year 1999-2000. During the year 2000-2001 it ranged from 4.36 ± 1.05 mg/l to 21.10 ± 0.81 mg/l.

During the study period river maintained well alkaline nature of water. At down stream station, during winter pH was found to be more (8.32). The higher pH is probably due to increased carbonate and bicarbonate salts, which in turn are due to increased load of pollutants and decomposition of organic matter. It was concluded that the high level of carbondioxide in water did not reduce the pH of water since alkaline salts maintain the pH.

INTRODUCTION

The growing load of environmental pollution has resulted in to an increase in the degree of civilization damage. There is a worldwide concern about the pollution of water due to human activity. Nature is a great cleansing agent but as far as its capacity to assimilate the pollutants is concerned, river water has limitations. River water is considered to be relatively pollutant-free as compared to stagnant water bodies because flowing water permits dispersion of pollutants over a large area diluting them to a great extent.

Water is regarded as polluted when it is changed in its quality or compositions, directly or indirectly as a result of human activities, so that it becomes less suitable for drinking as well as for domestic and other purposes. Pollution of river water results largely from the disposal of domestic and religious wastes.

The Wainganga river water quality is undergoing

degradation due to unhygienic human activities carried out along the river in Pauni town. As a consequence of rapidly expanding domestic wastes and excessive population growth Wainganga river is being increasingly polluted. A work plan has been conceived for the present investigation to study the water quality of Wainganga river.

Previous records show that the stretch of river in vicinity of Pauni town was relatively pollution free. Thereafter increased population, discharge of wastes in water, use of water for agricultural practices and indiscriminate use of water by washermen went on expanding rapidly. The pollutants mainly include pesticides, detergents, temple wastes, domestic wastes etc. The massive influx of these pollutants in the river have altered water chemistry degrading potability of water. This has resulted in destruction of the biodiversity and lentic ecosystem as well.

Perusal of literature pertaining to pollution studies of river in Pauni indicates that such studies have not been