Short Communication

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STUDY OF BIOCHEMICAL OXYGEN DEMAND IN GODAWARI RIVER AT NANDED CITY DUE TO IMPACT OF INDUSTRIAL POLLUTION

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Key words : Godawari river, Industrial effluents, Biochemical oxygen demand, Water pollution.

ABSTRACT

The present investigation was undertaken to study the BOD in Godawari river for a period of two years. Industrial pollution from Maharashtra Industrial Development Corporation (MIDC) units have led to sustantial rise in BOD of the river.

INTRODUCTION

Shivnikar (1998) recorded the BOD values at different station in Godavari river at station A 3.6 to 16 mg/L. at station B 40.4 to 67.0 mg/L and at station C 57 to 69 mg/L. These observation shows that the BOD values from river Godavari were well above permissible level in all seasons.

Reddy *et al.* (1994), recorded the mean BOD values as 4.0 mg/L from river Niva. Joshi *et al.* (1995) in western Ganga river Haridwar BOD was recorded in the range of 0.12 to 3.9 mg/L Kulkarni *et al.* (1995) noted BOD values were found in the range of 2.8 to 5.36 mg/L from Sadatpur reservoir. BOD is an important parameter that indicates the magnitude of water pollution by the oxidisable organic matter and the oxygen used to oxidize inorganic material such as sulphides and ferrous ions (APHA, 1971)

The present investigations was carried out to study BOD of Godavari river during the year 1998-2000, at Nanded (M.S.) because as not much work has been done on BOD of river. For convenience, three sampling stations A, B & C from the river were selected.

High BOD values during summer induce the high growth of bacteria (Pyatkin *et al*. 1980). Low BOD values in winter due to lesser quantity of total solids as well as to the quantitative number of population, (Rice, 1938; Zafar, 1986). The highest BOD values during mansoon was possibly due to high quantity of organic matter and industrial effluents (Rice, 1938).

METHODOLOGY

The samples for the analysis of BOD were collected for 24 months from Feb. 1998 to January 2000. Water analysis was performed following winklers method in NEERI (1986).

The samples were collected on specific dates and at specific time, from Singh (1998), recorded BOD values from Rapti river at Gorakhpur at site at site A 1.9 mg/L at site-B 1.9 to 38.7 mg/L and at site-C 1.9 to 31.5 mg/L. Minimum values during winter

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and maximum values during summer. Meeankshi Deshmukh *et al*. (1998) recorded values from Kham river range from 2.60 to 26.5 mg./L.

RESULTS

The BOD test may be considered as a wet oxidation procedure in which the living organisms serve as the medium for oxidation of organic matter to CO2 and water. A quantitative relationship exists between the amount of oxygen required to convert a definite amount of any given organic compound to CO2 water and ammonia (Sawyer and McCarty, 1978).

In the present investigation the value of BOD were observed maximum during summer. During the year 1998 to 1999 these values at station - A 4.0 to 6.2 mg/L at station B 48.0 to 64.0 mg/L. The values of BOD during summer. At station A, B & C are highest due to industrial effluents drained into Godavari river. The values are given in Table 1.1 & 1.2. The Fig. 1.1. to 1.2.

Table 1. Monthly Mean Values of B.O.D. (mg/L) from Godavari River Water Samples during the year 1998-99

Month	Station-A	Station-B	Station-C
February	5.5	55.0	62.0
March	5.8	57.0	64.0
April	6.0	59.0	65.0
May	6.2	64.0	69.0
June	4.0	59.0	57.0
July	3.6	52.0	55.0
August	4.2	59.0	58.0
September	5.5	60.0	62.0
October	6.0	50.0	52.0
November	5.8	48.0	50.0
December	6.0	49.0	49.0
January	6.2	52.0	50.0

Table 2. Monthly Mean Values of B.O.D. (mg/L) from Godavari River Water Samples during the year 1999-2000.

Month	Station-A	Station-B	Station-C
February	5.7	56	58
March	6.0	58	60
April	6.2	60	62
May	6.4	62	65
June	4.4	61	68
July	3.8	54	57
August	4.6	55	56
September	5.8	62	64
October	5.2	54	56
November	5.0	50	52
December	5.2	51	52
January	5.5	54	55

CONCLUSION

Substanial rise in BOD of the river in attributed to the discharge of effluents from industrial units and a proper effluent treatment is required.

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