ABSTRACT
The present investigation deals with the study of COD Chemical content of Godavari river water due to impact of MIDC effluents. The water is greatly used for domestic agricultural and recreational purposes. The investigations were carried out for the period of two years during Feb.-98 to Jan.-2000. Chemical Oxygen Demand is the oxygen required by the organic substances in water systems to oxidize them by a strong oxidizing agent. It is an index of organic content of water. Chemical oxygen demand test can be used in finding out the toxic conditions and biologically resistant substances.

INTRODUCTION
COD is the oxygen required by the organic substances in water system to oxidize them by a strong oxidizing agent. It is the test used for measurement of pollution strength of industrial and domestic waste. The pollution strength can be ensured in terms of quantity of \( O_2 \) required for the oxidation of organic matter there by producing \( CO_2 \) & \( H_2O \). All the organic compounds with some exception can be oxidized using strong oxidizing agent under acidic conditions. COD has advantage over BOD because COD determination requires about 5 hrs. as compared to BOD which requires 5 days. COD is important in the management and design of treatment plant because of its rapidity in determination COD value can be used in finding out the toxic conditions and presence of biologically resistant substances. It is a poor measure of organic matter as oxygen is also consumed in the oxidation of the inorganic matter.

Oxygen demanding wastes
One of the most important water quality parameter is the amount of dissolved oxygen (DO) present. The value of DO in water is modest, i.e. 8 to 15 mg/L. depending on temperature and salinity. Minimum amounts required for a healthy fish population may be as high as 5-8 mg/L. for active species, such as trout or as low as 3 mg/L. for less desirable species, such as carps.

METHODOLOGY
The samples were collected from three sampling
GODAVARI RIVER WATER POLLUTION DUE TO THE INDUSTRIAL EFFLUENTS FROM

DESHPANDE AND AMBORE

stations A, B & C monthly. On specific date of each and every month at fixed morning time to avoid interference of other factors. Samples were collected in clean polythene bottles by standard methods suggested by APHA (1989). The values of chemical oxygen demand were estimated by dichromate digestion method.

The three sampling stations are, Station - A is situated at water filtration tank "Dankin' before entering Godavari in Nanded city. Station- B is situated near old bridge and Station – C is situated near Wadgaon where M.I.D.C. effluents are drained in River Godavari by nala without any treatment.

RESULTS

In the present investigation values of COD were recorded. The maximum COD values were recorded in summer and lowest during monsoon. The values of COD recorded during the year 1998-1999 at Station-A 2.44 to 130.6 mg/L and at Station-B 48.2 to 235 mg/L and at station C 50.2 to 240 mg/L. During the year 1999-2000 the values of COD recorded are at station A 25.9 to 132.6 mg/L at Station – B 496 to 236 mg/L and at station - C are 518 to 242 mg/L.

The values of COD are given in the Table 1 & 2 and Fig. 1 & 2.

DISCUSSION

During COD determination the organic matter is converted into CO\(_2\) and H\(_2\)O. This test is useful to determine toxic conditions and the presence of biologically resistant substances. In the present investigation the higher levels of COD during summer in the month of May and lower during the monsoon.

It seems that temperature and water table influences COD values. Not only temperature but some of the fatty acids chloride, nitrates and iron are the main interfering radicals which influences the COD values. Similar trends were reported by Kudesia et al. (1986) and Quenerunis (1985).

The COD and BOD values are higher during summer than in monsoon and winter. Similar trend was observed by Kathari et al. (1981). Pule, (2000) recorded the COD values in the range between 60.00mg/L to 148.00mg/L in Isapar Dam. Sharma et al. (2000) recorded the maximum COD values from Yamuna river at Mathura, where the river receives a huge quantity of sewage, animal waste and other substances. Singh et al. (1998) recorded COD values from Rapit river at Gorakhpur ranging from 7.1 to 8.5 mg/L. Deshmukh et al. (1998) recorded methods suggested COD values from Kharm river water ranging from 23 to 40 mg/L.Sultana et al. (1999) recorded COD values from Godavari river water ranging from 22 to 30 mg/L.

The COD values of drinking water should not exceed more than 10 mg/L as per guidelines of World Health Organisation (WHO). The values of COD for drinking water were recorded beyond the permissible level in both the year.

In the present investigation the COD values are higher compared to standard values of WHO & I.C.M.R. which indicates greater pollution of Godavari river water due to M.I.D.C. effluents it rejects the utility of river water for potable use, recreational and history. Therefore if is necessary to discharge the M.I.D.C. effluents after proper treatment by the authorities of industries.

CONCLUSION

It is concluded that the river water shows higher concentration of BOD in Godavari river. In the month of April and May the water from old bridge and Wadgaon, i.e., at Station-B and Station-C were unfit for public supply, drinking bathing, fish culture and irrigation. Therefore, it is necessary to discharge the M.I.D.C. effluents after proper treatment by the authorities of the industries.

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REFERENCES


