



STUDIES ON MONTHLY VARIATIONS IN D. O, B.O.D. AND C.O.D. PARAMETERS OF BORI RESERVOIR NEAR NALDURG, DIST. OSMANABAD. MAHARASHTRA.

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ABSTRACT

In the present communication the scientific study was conducted to determine the monthly variation in dissolved oxygen, biological oxygen demand and chemical oxygen demand parameters of Bori Reservoir near Naldurg, Dist. Osmanabad. Maharashtra. The work was carried out during the year 2020 (January to December.) The scientific investigation shows that, the minimum D.O. values were recorded in winter and minimum in summer. The Biological oxygen demand and Chemical oxygen demand values were observed more during monsoon than winter and summer.

Keywords – Bori Reservoir near Naldurg -B.O.D.- C.O.D. D.O. – Monthly Variation.

INTRODUCTION:

Today's world facing the problems of water scarcity & water pollution. Water quality of any water body is measured in terms of parameters like Dissolved Oxygen. Biological Oxygen Demand and Chemical Oxygen Demand. D.O. is an important parameter which is an index of water quality resistant substances in water. According to Khube and Durgapal (1993), higher values of C.O.D. indicate higher microbial activities.

MATERIALS AND METHODS:

For the scientific study the three sampling stations were fixed i.e. stations 'A' (centre of tank), station B (Near wall of the tank) stations 'C' (Near tail site). The monthly sample collected from the sampling sites A, B and C for a year. Water samples were collected & brought to the laboratory and analyzed with the help of Winkler's Idomatic method in the laboratory for D.O. and B.O.D. Similarly, C.O.D. was measured by using Dichromate digestion

method. Samples were collected digestion method. Samples were collected in dark bottles, incubated 200 °C for five days.

RESULT AND DISCUSSION:

Samples were collected and brought to the laboratory for analysis and find out the results of D.O. C.O.D. & B.O.D.

DISSOLVED OXYGEN: - In the present investigation on the D.O. values varies from 4.0 to 8.8 mg/lit. The high values were recorded in the winter and lowest value was recorded in summer months. Reading gives in table No. Ist same observations was observed by Hancock (1973), Mishra and Yadav (1978), Adebisi (1981) and Mitra (1982) the result gives in Table No. Ist.

BIOLOGICAL OXYGEN DEMAND :- (B.O.D.) It is an indicator parameter which indicated the presence of biological matter in the water and express degree of contamination.

In the present work the range of B.O.D. was 4.7 to 26.8 mg/lit. the maximum during monsoon and minimum in winter similar observations observed by Singhai et al (1990) and Patki (2002), Jadhav R.R. (2011) the result gives in Table No. IIInd.

CHEMICAL OXYGEN DEMAND (C.O.D.): - The C.O.D. test determines the Oxygen required for chemical oxidation matter with the help of strong chemical oxidation matter with the oxidant. In the present study values varies from 5.3 to 55.6 mg/lit.

The maximum values of C.O.D. were noted in monsoon may be due to inflow of organic dead matter and minimum values are in winter may be due to settlement & dilution effect. Kudesi et al (1986), also observed similar results mean values of C.O.D. shows in table – III.

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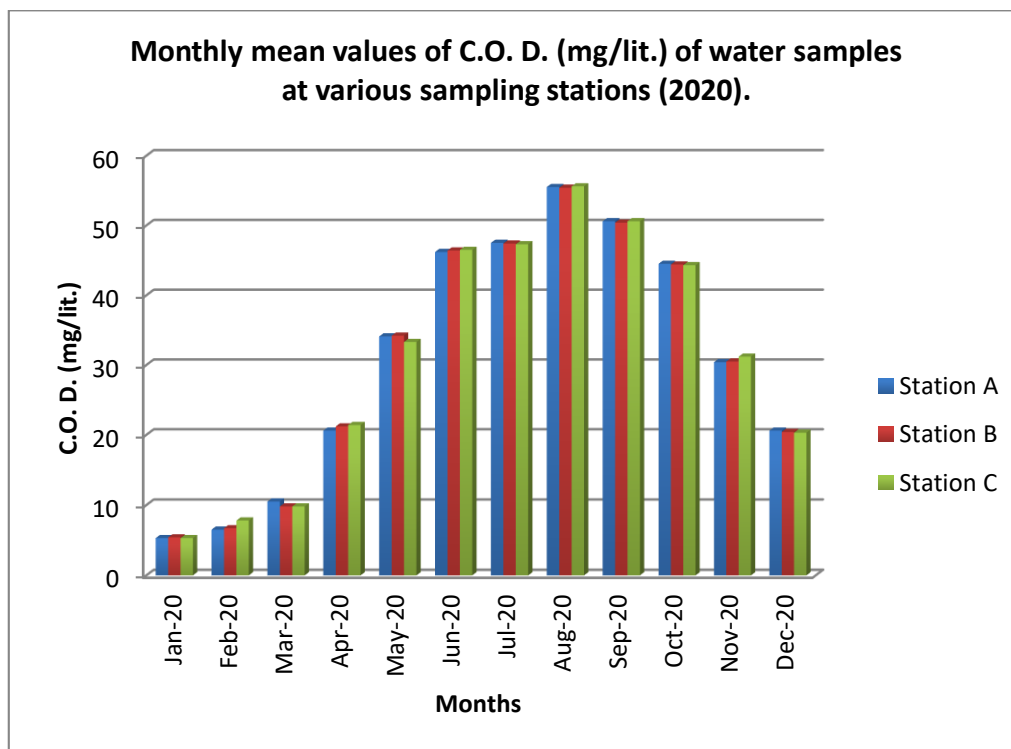


Figure No. 1: Monthly mean values of D.O. (mg/lit.) of water samples at various sampling stations (2020).

Sr. No.	Months	Station A	Station B	Station C
1	Jan - 20	8.7	8.6	8.5
2	Feb - 20	7.7	7.8	7.6
3	Mar - 20	6.1	6.2	6.2
4	Apr - 20	4.1	4.0	4.0
5	May - 20	4.1	4.2	4.1
6	June - 20	4.6	4.5	4.5
7	July - 20	5.3	5.2	5.1
8	Aug - 20	5.6	5.3	5.4
9	Sept - 20	6.1	6.1	6.0
10	Oct - 20	7.2	7.3	7.2
11	Nov - 20	8.6	8.5	8.4
12	Dec - 20	8.8	8.7	8.6

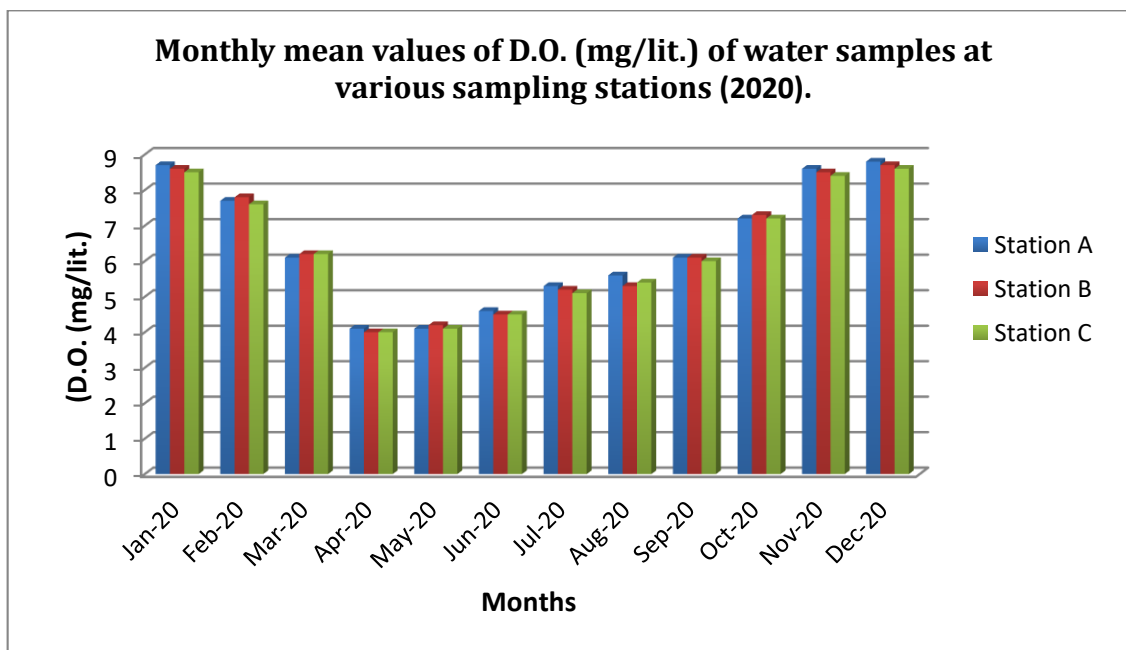


Table No. II: Monthly mean values of B.O. D. (mg/lit.) of water samples at various sampling stations (2020).

Sr. No.	Months	Station A	Station B	Station C
1	Jan - 20	10.7	10.5	10.5
2	Feb - 20	11.0	11.2	11.4
3	Mar - 20	11.6	11.6	11.8
4	Apr - 20	12.6	12.5	12.4
5	May - 20	15.2	15.3	15.5
6	June - 20	18.1	18.3	18.5
7	July - 20	26.8	26.7	26.7
8	Aug - 20	25.5	25.5	24.8
9	Sept - 20	25.6	24.8	24.8
10	Oct - 20	11.5	12.5	12.6
11	Nov - 20	8.1	8.2	8.2
12	Dec - 20	4.8	4.8	4.7

Figure No. 2.

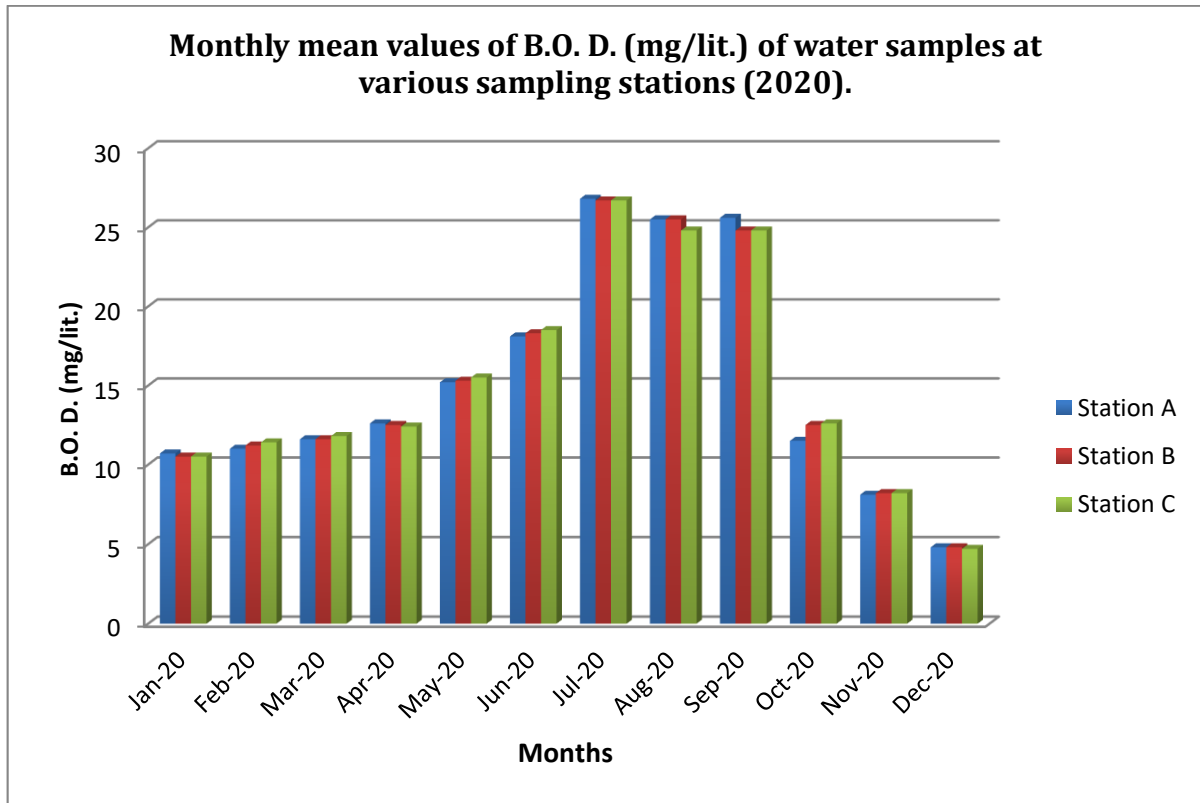


Table No. III: Monthly mean values of C.O. D. (mg/lit.) of water samples at various sampling stations (2020).

Sr. No.	Months	Station A	Station B	Station C
1	Jan - 20	5.3	5.4	5.3
2	Feb - 20	6.5	6.7	7.8
3	Mar - 20	10.5	9.8	9.8
4	Apr - 20	20.6	21.2	21.4
5	May - 20	34.1	34.2	33.3
6	June - 20	46.2	46.4	46.5
7	July - 20	47.5	47.4	47.3
8	Aug - 20	55.5	55.4	55.6
9	Sept - 20	50.6	50.4	50.6
10	Oct - 20	44.5	44.4	44.3
11	Nov - 20	30.4	30.5	31.2
12	Dec - 20	20.6	20.4	20.3