**RESEARCH ARTICLE**

# Physico-chemical characteristics of Jurala reservoir

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**ABSTRACT**

G The present investigation attempts to the study the physico- chemical properties of Jurala reservoir, dist. Mahaboobnagar Telangana. It is medium size reservoir across the river krishna for fisheries and agriculture. The physico-chemical parameters like temperature, PH and dissolved oxygen have been studied. The seasonal variations in the above environmental parameters were followed for a period of one year from September b2014 to September 2015.

**Key words:** Physico- chemical conditions, seasonal variations, reservoir.

## INTRODUCTION

The water quality of the reservoir arise from time o time and place to place due to interaction of local factors. Several works carried out studies on fresh water bodies. Sreenivas (1963,1964), Data Munshi (1975), Ganapati and Pathak (1978), Khan and Zutshi (1979; 1980), Cynthia (1980), Kodarkar *et al*. (1992), Sunitha Rao and Rama Sarma (1991,1992), Sudha(1999), Shailaja (2003), Johnson *et al*., (2004),

## MATERIALS AND METHODS

Water samples were collected from three sampling stations, A, B and, C the sampling of the reservoir water is carried out every month in the morning between 07.00 a.m. to 11.00 a.m. from sampling stations. Water temperature was recorded with the help of centigrade thermometer in C, while PH of water sample was recorded with the help of pH pen meter (Hanna).DO (Dissolved oxygen) were recorded by a battery operated digital portable water analysis kit (EI).

## RESULTS AND DICUSSION

Temperature fluctuates both daily and seasonally and is responsible for heating and cooling of reservoir water. The measurement of water temperature is very important for calculating the solubility of oxygen

and carbon-dioxide. The range of water temperature was between 27 to 38c at station A and 28 to 39c at station B and 28.6 to 39c at station C in the month of May in 2014 while in the month of Dec2015 the range of water temperature at the station a was between 20.2 to 23c and 21.3 to 24c at station B and 20.5 to 23c at station C. The seasonal temperature variations are represented in table No.1. There is also a negative relationship between diurnal temperature variations and dissolved oxygen as shown by Verma (1967) and Misra et al. ( 1976).

PH is a measure of hydrogen ion concentration in water and indicates how much water is acidic or basic. The range of PH of majority of lakes and reservoirs in between 6 to 9. More (1950), Ganapati (1960), Singh (1965), Verma (1967, 1969). Vyas (1968) and Wetze (1972) have observed the value of PH ranged from 8.0 to 9.0 in Indian water PH was also reported to play in important role in formation of algal bloom (anderson1961;king 1972). Decreasing volume of water due to evaporation Were accompanied by progressive changes in PH (Adoni 1975).

The density of phytoplankton (Bohra, 1977; Sharma 1980) Jeurala Reservoir being an impoundment its PH range complies with the above statement. during one year of study at station 'A' its maximum of PH 9.0 in august similarly at sampling station 'B' the maximum values of 8.8 were recorded in April while minimum

**Table 1. Monthly variations of water temperature (c).**

| **Month 2000** | **Station** | | |
|---|---|---|---|
| | A | B | C |
| January | 17 | 18 | 16 |
| February | 30 | 32 | 32 |
| March | 28 | 28 | 27 |
| April | 35 | 34 | 34 |
| May | 34 | 39 | 39 |
| June | 23 | 24 | 24 |
| July | 24 | 23 | 23 |
| August | 21 | 21 | 22 |
| September | 20 | 21 | 20 |
| October | 22 | 23 | 21 |
| November | 20 | 20 | 21 |
| December | 23 | 24 | 23 |

**Table2. Monthly variation of PH.**

| **Month 2000** | **Station** | | |
|---|---|---|---|
| | A | B | C |
| January | 8.2 | 8.1 | 8.0 |
| February | 8.3 | 8.4 | 8.2 |
| March | 8.2 | 8.6 | 8.1 |
| April | 8.4 | 8.8 | 8.2 |
| May | 9.0 | 8.7 | 8.9 |
| June | 8.3 | 8.4 | 8.2 |
| July | 8.2 | 8.6 | 8.4 |
| August | 7.9 | 7.8 | 7.1 |
| September | 8.2 | 8.3 | 8.3 |
| October | 8.7 | 8.6 | 8.4 |
| November | 8.9 | 8.4 | 8.2 |
| December | 8.5 | 8.6 | 8.2 |

**Table3. Monthly variations of dissolved oxygen (do) mg/ml.**

| Month 2000 | Station | | |
|---|---|---|---|
| | A | B | C |
| January | 11.2 | 12.3 | 13.2 |
| February | 12.4 | 13.4 | 14.3 |
| March | 9.3 | 10.2 | 11.2 |
| April | 8.5 | 9.2 | 9.5 |
| May | 7.0 | 7.2 | 7.4 |
| June | 9.2 | 9.3 | 9.9 |
| July | 9.5 | 9.8 | 11.2 |
| August | 9.7 | 10.2 | 10.4 |
| September | 10.8 | 11.5 | 13.8 |
| October | 12.2 | 12.8 | 13.4 |
| November | 11.5 | 13.7 | 14.5 |
| December | 12.5 | 13.7 | 14.8 |

value 7.8 in august similarly at station 'c' maximum values 8.9 in may and minimum 7.1 in august. The seasonal pH variations are represented in table.2.

Dissolved oxygen is one of the most important factors in any aquatic ecosystem. The DO levels in natural water depends on the physical, chemical and biological activities in thre water body. The main source of DO are from the atmosphere and the photosynthetic process of the aquatic green plants which produces a district rise in the amount of oxygen .the important of dissolved oxygen in aquatic ecosystem in bringing out various biochemical changes and its effect on metabolic activities of organism was discussed by many ecologist Roy (1955) Laxminarayanan (1965). David and Roy (1966), Pahwa and Mehrotra(1966),Saxena et.al. (1966), Mishra and Yadav (1978), have discussed seasonal average and fluctuations in dissolved oxygen. Our results shows maximum values of Dissolved oxygen in the month of February (winter) and minimum during the May (summer) of three sampling station A, B, and C. relationship with the temperature such a relationship has also been recorded by Sreenivasan (1972), Olsen and Sommerfed (1977) and many others. These observations supported the established reverse impact of high temperature and solubility of gases in water. The seasonal dissolved oxygen variations are represented in table3.

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