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Study on Turbidity of Ambatanda Dam of Kannad District -Aurangabad, Maharashtra

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ABSTRACT

The turbidity of water was measured from the month of June 2010 to May 2011. The study was made for one year duration to know the pollution and turbidity of water loaded in this region. During the course of investigation the dam is heavily infested with the different aquatic weeds like Pistia, Chara, Nitella, Vallisneria, Cyprus, Hydrilla, Wolffia, Lemna, etc. Not only this it is infested with the many algal members like Diatoms, Navicula, Cosmarium, Scenedesmus, Oedogonium, Spirogyra, Occilatoria, Nostoc, Anabeana, Zygnema etc. The people living near the dam washed animals in such water reservoir, due to which the water is polluted and not safe for drinking purpose. Thus the turbidity was measured by the help of Sacchi disk.

Key words: Ambatanda dam, Turbidity, Water Pollution, Sacchi disk.

INTRODUCTION

Water pollution not only affects water quality but also threats human health, economic development and social prosperity [1].Water is a prime need for human survival and industrial development. The assessment of water quality is very important for knowing the suitability for various purposes [2]. Ambatanda is one of the dam in the kannad taluka of Aurangabad district. It is nearly 20 km from the kannad region of Maharashtra state. It is situated near famous temple of kalikamata at kalimath. The dam is located on the river Shivana i.e. in between the Pitalkhora (the place famous for old caves) and Kalimath of kannad. Geographically it is situated 74°-55° and 75°-15° west longitudes and 20°-15° and 20°-30°south latitude. The annual rainfall is near about 550 to 600 mm and the temperature goes high up to 45°c in summer and falls down to 8°c in winter season.

The turbidity of water is due to suspended inorganic and organic substances such as silt, clay, zooplankton, phytoplankton etc. It varies greatly with nature of the basin degree of explosion, nature of inflowing sediments etc. pond water with sand gravel has low turbidity and with clay has high turbidity. The turbidity due to plankton indicates high fertility due to the slit or mud is harmful to fishes and other organisms. The turbidity restricts penetration of sunlight and reduces photosynthetic activity of plants and the productivity depends upon it. The Ambatanda dam is infested with aquatic weeds like *Pistia, Chara, Nitella, Vallisneria, Cyprus, Hydrila, Wolfia, Lemna, etc.It* is also infested with several Algae, and garbage of villages and villagers laid directly into dam.

The study undertake for measurement of turbidity of water in Ambatanda dam month wise from June 2010. The two spot A and B are selected for the course study to measure the turbidity in morning and evening sessions[3-4]. The study of turbidity of this dam is necessary because the water is used for drinking purpose. So due to which the present investigation is undertaken.

MATERIALS AND METHODS

The usual methods have been utilized for the measurement of turbidity. The turbidity is measured by using simple ecological instrument 'sacchi disk'. It is designed by sacchi (1865). Actually it is circular in shape, and has divided into four parts .The two parts were black and two parts were white in colour. The disk has hook in the center from which a rope is arises with the help of sacchi disk the turbidity of water is measured.

RESULT AND DISCUSSION

The measurement undertake of two different spots in the Ambatanda dam. Spot A consist of the turbidity which is recorded at 9.00 hrs to 10.00 hrs in morning and at 13.00 hrs to 14.00 hrs in afternoon session likewise the measurement undertakes in spot B respectively. The measurement recorded in the second Sunday of every month from June 2010 to May 2011. The disk is closely dropped in water and depth at which the disk is disappear is noted then disk is slowly lifted .The depth at which the disc reappears is noted .The average of two readings is the turbidity of water. In this way several measurements are undertaken. The turbidity is measured by using method described by [4-5]. The month wise observation and measurements of turbidity have been listed as in the following table1.

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Table 1. Shows th	ie monui wise	turbianty of	I water m A	Ampatanua	uam at Spot	A and Spot D

Sr. No.	Year	Month	Morning Spot A (Readings	Afternoon Spot A (Readings	Morning Spot B (Readings	Afternoon Spot B (Readings
			in cm.)	in cm.)	in cm.)	in cm.)
1	2010	June	75	79	80	87
2	2010	July	85	95	88	99
3	2010	August	80	90	86	93
4	2010	September	78	84	85	90
5	2010	October	70	80	75	85
6	2010	November	83	88	88	96
7	2010	December	85	92	95	100
8	2011	January	95	100	98	105
9	2011	February	85	95	85	90
10	2011	March	100	106	108	114
11	2011	April	105	112	114	120
12	2011	May	110	115	115	125

The measurements of turbidity of two different spot of Ambatanda dam were investigated and it is noted that generally the turbidity is more in afternoon session of both the A and B spot. The water at spot B exhibited more turbidity than the water at spot A. The turbidity in Ambatanda dam is mainly due to the presence of suspended solid particles as well as the microscopic zooplankton and phytoplankton at both the spots. In both the spot turbidity is more during the summer season and comparatively less in winter and rainy season. The turbidity is found to be more at spot B, because the village drainage ,garbage are directly enters into the dam which contains various types of suspended particles and also due to the less penetration of sunlight. The present results are in the agreement with that of [5-8].

Thus the turbidity of Ambatanda dam is mostly due to the eutrophication. To make this dam in good condition for safe and drinking water. It should be bio-remediated and then utilized.

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