



SHORT COMMUNICATION

STUDY ON THE ECOLOGY OF A POND AT PERAVURANI, THANJAVUR, TAMIL NADU

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ABSTRACT

The research paper reports the physico-chemical characteristics of Kendikulam pond at Peravurani, Thanjavur district, Tamil Nadu. While studying a number of parameters on physico-chemical properties, plankton analyses were made to check the fitness of water for drinking, irrigation and for fish growth. Observations of this study suggested that the pond was highly eutrophic in nature.

Kendikulam pond is situated near peravurani, 45 km away from Thanjavur. The pond is useful as it supplies water for agricultural lands, horticulture, aquatic farms and drinking water to nearby population. This paper deals with its ecological and physico-chemical parameters, which affect the flora and fauna. It is of immense importance to have a comprehensive knowledge of limnology of a pond so as to manage its water quality for use.

Water samples were collected from the pond for physico-chemical analysis using the standard methods (APHA 1989). The qualitative and quantitative analysis of plankton was done by the methods as described by Jhingaram (1982), Fritsch (1965) and APHA (1989). Water samples were preserved with 10% formaldehyde for plankton analysis and identification was made with Sedgewick Rafter plankton counting cell under microscope by standard reference books (Edmondson 1954).

Various physico-chemical parameters, and flora and fauna of the pond are as follows given in Table 1.

Table 1: Physico-chemical and plankton of the Kendikulam pond.

I. Physico-chemical factors

Temperature	-	18.1°C - 33.5°C
pH	-	7.3-8.1
Hardness, mg/L	-	102-278
BOD, mg/L	-	102.50
COD, mg/L	-	137.50
Chlorides, mg/L	-	102-248
Carbonates, mg/L	-	13.2-32.8
Bicarbonates, mg/L	-	98-235
Phosphates, mg/L	-	1.0-1.50

II. Phyto and zooplankton

Diatoms	Greel Algae	Blue Green Algae	Fungi	Zooplankton
<i>Cyclotella</i>	<i>Ulothrix</i>	<i>Oscillatoria</i>	<i>Loramyces</i> ,	<i>Cyclops</i>
<i>Navicula</i>	<i>Chlorella</i>	<i>Lyngbya</i>	<i>Leptomitius</i>	<i>Paramecium</i>
<i>Fragilaria</i>	<i>Hydrodictyon</i>	<i>Spirogyra</i>		<i>Pleurotrocha</i>
<i>Pinnularia</i>	<i>Pediastrum</i>	<i>Spirulina</i>		<i>Euglena</i>
	<i>Sphaerocystis</i>	<i>Nostoc</i>		<i>Amoeba</i>
	<i>Oocystis</i>	<i>Tetraspora</i>		<i>Daphnia</i>
				<i>Uronema</i>
				<i>Keratella</i>

Kendikulam pond shows a wide range temperature fluctuation from 18.1°C-33.5°C. High temperature is favourable for growth of algal plants. The quality of water has a direct influence on the presence of aquatic life. In the present work, results of different physico-chemical parameters indicates high level of organic matter, chlorides, carbonates, bicarbonates and phosphorus.

Under eutrophic conditions, the macroalgae like filamentous algal forms and blue greens often dominate in waters. Floating algal masses contained the species of *Cladophora* and *Hydrodictyon* etc. In the present study, *Ulothrix* and *Chlorella* are found to be dominating. Hardness of this pond is high due to eutrophication (Rai 1974). Chloride value ranges from 102-148 mg/L. High chloride concentration is also an indicator of large amount of organic matter (Yadav 2002). Munawar (1970) also observed high alkalinity values in eutrophic waters. All these parameters denoted that the water of Kendikulam pond is rich in nutrients, and rich variety of flora and fauna shows that this pond has become eutrophic, which has adversely affected the quality of water for various uses.

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