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## STUDIES ON PHYSICO-CHEMICAL ASPECTS OF YELDARI RESERVOIR IN PARBHANI DISTRICT (MAHARASHTRA) INDIA



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### ❖ ABSTRACT:

*Present paper deals with the study of Physico-chemical parameters of Yeldari reservoir in Parbhani district of Maharashtra. Monthly variations in 10 physico and chemical parameters such as atmospheric temperature, water temperature, pH, dissolved oxygen, dissolve carbon dioxide, total alkalinity, total hardness, chlorides, total solids and total dissolved solids were investigated for a period of one year (June 2010 to May 2011). All parameters were within permissible limits. This represents that the reservoir is non-polluted and can be used for agriculture, fish culture and domestic use.*

*Keywords: Physico-chemical, Yeldari reservoir.*

### ❖ INTRODUCTION:

Physico chemical parameter of an aquatic ecosystem play an important role in productivity process and it turns the growth of the fish under culture. Good water quality provides better growth and survival rates to cultivable organisms. The water quality management in fish farming is based on three components comprising the analysis of various water parameters. The knowledge of the favorable ranges of these parameters, the chemical treatment and mechanical control techniques involved to bring the parameters under desirable limit. Various kinds of environmental change are stressful and lower the resistance of the all cultivable fishes to infect and other disease has become better understood in recent years.

Parbhani District is located at 19.27N and 76.78 E. It has an average elevation of 407 Meters (1335 feet). Parbhani covers 6250 sq. kms of land mass and is located at an average height of 357 meter above sea level. It lies between 18.45 and 20.10 North latitude and 76.13 and 77.39 East latitude. Parbhani district is divided into three sub basins Godavari, Godavari - Purna and Penganga. Present study aims at investigating the Physico-chemical parameters in Yeldari reservoir of Parbhani district of Maharashtra. Yeldari reservoir is an earth fill reservoir constructed in 1968 on Purna River near Yeldari. Taluka Jintur District Parbhani in the state of Maharashtra. Jintur is located at 19 ° 37'N 76° 42'E / 19.62° N 76.7° E. It has an average elevation of 455 meter (1492feet).

### ❖ MATERIALS AND METHODS:

Water samples were collected monthly from Yeldari reservoir of Parbhani District in between 7 to 10 am for physico-chemical analysis.

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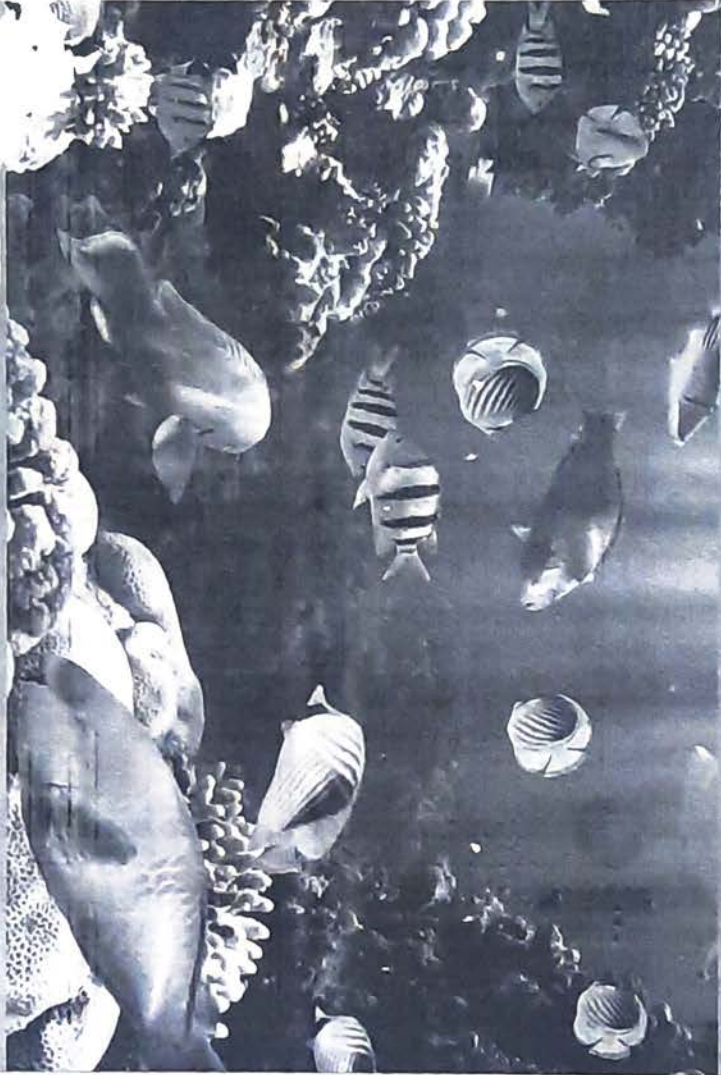


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## CHAPTER SIX

# Protozoan parasites in fishes

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### Introduction

Most of the commonly encountered fish parasites are protozoan. Protozoans are simple single celled, eukaryotic organism of the kingdom Protista. It includes members of the phyla Ciliophora (Ciliate), Sarcomastigophora, (Flagellates), Microsporea and Apicomplexa with regards to fish parasites. Many of which are freely in the aquatic environment. There are more than 65,000 described species of protozoa and around 10,000 parasitic species (5600 Myxosporidians and allies, 2500 ciliates, 1800 flagellates). More than 2400 parasitize fishes (Lucky and Ernest, 1994).

The single cell protozoan organisms composed of a plasma membrane or pellicle, cytoplasm, one to several nuclei; many have specialized structures that aid in locomotion, food capture, attachment or protection. In protozoan the functions of ingestion, digestion, gas exchange, and osmotic regulation are performed by various organelles of the cell instead of by separate organs composed of many tissues as occurs in multi-cellular animals. Protozoa usually range in size 10 to 100  $\mu$  which is why a microscope is required to see them.

According to Klinger and Francis-Floyd protozoa are a vast assemblage of eukaryotic organisms and that most of the commonly encountered fish parasites are protozoa, which with practice, are the easiest to identify and easiest to control. In general protozoa are one of the major sectors of fish parasites that have been long neglected because of its inherent difficulty in studying compared to other larger parasites. Among protozoa, ecto and endo parasitic protozoa occupy a very important sector as one of the hazardous threats to fish health. These parasites attack the fish, causing massive destruction of skin and gill epithelium. Even moderate infection of these organisms on small fish may prove a fatal disease, since the infection may cause the fish to stop feeding.

Most of the commonly encountered fish parasites are protozoans. Protozoans are single-celled organism, many of which are free- living in the aquatic environment. Typically, no intermediate host is required for the parasite to reproduce and life cycle is direct. They can reproduce asexually and their numbers increase very fast.

Consequently, they can build up to very high numbers when fish are crowded causing weight loss, debilitation and mortality. The majority of the fish parasites, typically, protozoan are present in large numbers either on the surface of the fish within the gills or both. When