

International Journal of Scientific Research in Science and Technology

Available online at : **www.ijsrst.com** 

Print ISSN: 2395-6011 | Online ISSN: 2395-602X



doi : https://doi.org/10.32628/IJSRST

# Diversity of Phytoplankton and Zooplankton of Nilona Dam Dist. Yavatmal

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ARTICLEINFO	ABSTRACT
Article History:	The present communication deals with the variations of phytoplankton and zooplankton in the Nilona dam of Yavatmal district .The Godhni area
Accepted : 01 Jan 2025 Published : 10 Jan 2025	has selected for the sampling .The samples were collected during the period of one month (July 2024 to August 2024).The samples under study were evaluated to study the diversity of phytoplankton and
<b>Publication Issue :</b> Volume 12, Issue 7 January-February-2025	zooplankton.Phytoplankton diversity was shown in the four groups like Chlorophyceae, Cyanophyceae, Euglenophyceae, Bacillariophyceae .Chlorophyceae were dominant as compare to the other reported groups. Zooplanktons shows the variations in groups Viz.Cladocers, Protozoa,
<b>Page Number :</b> 621-624	Rotifera, Nematoda. The members of Rotifers were dominant over other reported groups. Keywords: Phytoplankton, Zooplankton Nilona dam.

## I. INTRODUCTION

Plankton are the group of free floating microorganism. They move at the mercy of currents of winds as well as water. Phytoplankton are chlorophyll bearing suspended microscopic organism mainly algae. Phytoplankton plays an important role in aquatic ecosystem for development and growth of zooplankton and appeared as a paradox(Hutchinson,1967). Phytoplanktons liberate oxygen during photosynthesis and aid in energy exchange process (Khan 2003)Phytoplankton forms lowest trophic level in the food chain of fresh water ecosystem(Manoj Kumar and Khare,2015). The number and species of phytoplankton determine the water quality. Diversity is the important ecological indicator to assess the quality of water. Several researchers have been worked on this issue(Khanna et al .,2012 Kadam et al.,2014, Budhlani and Musaddiq 2014,Belkhode P.P. and Shrikant Sitre 2016, Rawat and Seema Trivedi, 2018. Imran Mithani and Dahegaonkar NR (2020). The Nilona dam wardha is a major water source for Yavatmal district .Therefore the study undertaken was to analyse the phytoplankton diversity in Nilona Dam .



# **II. MATERIAL AND METHODS**

The investigation were carried out during (July2024 to August 2024).Samples were collected from two sampling station at Godhni and Sawarghdh region that is back water of the dam(Fig.1), at morning between 8.0A.M To 10.0A.M by using plankton net and bottles and collected samples were shifted into the liter plastic bottles. The collected samples were allowed to centrifuge to concentrate and made up to 100ml after removing the surface water in the centrifuge tube. The population of plankton present in the centrifuge tube were transfer to other bottle and preserved in Lugols Iodine solution of further investigation (Sabita Kumara 2018).Take a drop of well mixed water by slightly shaking on clean slide place the cover slip on it under the proper magnification slides were observed and samples were identified by the relevant literature(Adoni,1985and Batish,1992).



Fig-1

#### **III.RESULT AND DISCUSSION**

The sampling sites shows diversity phytoplankton belongs to 20species of 7 genera various groups like Chlorophyceae(10 species of 6genera), Cyanophyceae (05species 2 genera), Euglenophyceae(2 species), Bacillariophyceae (3 species 1genera). *Oedogonium* and *Spirogyra* were dominant among another member of Chlorophyceae. The zooplankton in the area investigated shows 11 species and 7 genera of various groups Cladocers (3 species 2 genera), Protozoa(4species 2genera), Rotifers(6species 3genera), Nematoda(4species 2 genera). Among these Rotifers were dominant over all reported groups. Few genera act as bioindicators of organic pollution. Majority of protozoans were found in the interval of June and July. The number of planktons was more in summer and gradually minimise in rainy season.



Chlorophyceae	
Genera	Species
Ankistrodesmus	Falcatus
Chlorella	Vulgaris
Chlorococcum	Infusionum
Cladospora	Fracta
Cosmarium	Тепие
Hydrodictyon	Reticulatum
Oedogonium	Leave,plagiostomum,
	tapeinosporium,pisanum(Shiv kumar Rai 2012)
Spirogyra	chungkingensis,comdensata,longata,mirabilis
Cyanophyceae	
Anabaena	Fertilissimia
Lyngbya	Magnifica
Nostoc	Sp.
Ocillatoria	Limosa
	Anacystis, botrycoccus chrococcus
	phormidi,rivularia
Euglenophyceace	
	acus,viridis,caudatus,gracilis
Bacillariophyceae	
Navicual	Viridula
Synedra	Ulna
	Diatom sp.amphore.stauronesis,cyclotella

# Recorded Zooplanktons

Cladocera	
Genera	Species
Bosmina	Longirostirs
Daphnia	Carinata
Protozoa	
Arcella	arenaria, conica,dentata,rota
Balantidium	Coli
Rotifera	
Asplanchna	Intermedia
Nematoda	
	Salasi sp.
	Javanica ,hapla,americanus,ascaris
Ostertamia,	
Tylenchus(L.B.Chanu et al 2014)	

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The present communication reveals that the water of Nilona dam was found to be more polluted. During this period not safe for drinking because most of the people in the sawargadh village wash their vehicle and pet animals in back water and most of the industrial pollutants mix in the dam.

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