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**ZOOPLANKTON BIODIVERSITY AND ITS IMPORTANCE FOR FISH PRODUCTION IN VISHNUPURI DAM, Nanded Dist. Nanded. (M.S.)****M. S. Pentewar****Gramin (ACS) Mahavidyalaya Vasantnagar Tq. Mukhed Dist. Nanded  
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**ABSTRACT :**

*Vishnupuri Dam was constructed on the River Godavari, in Nanded District (M.S.) in 1988. This is one of the largest lift irrigation projects in Asia. The back water covers 40 k.m. length of the Godavari. Culturable command area of project is 23222 hector and irrigable command area 19514 hector, live storage of project is 80.79 million cubic meters out of which 43.95 storage is reserved for drinking purpose and 10.26 million cubic meters for industrial purpose. The Godavari river has been under constant threat of pollution by sewage and industrial wastes, disposal of dead bodies, deforestation, excessive use of fertilizers and pesticides, bathing and water development programmes. It is of great importance for the region because its water is used for human and cattle consumption, power generation, fish production and irrigation. A total of 25 species of zooplanktons and 10 species of fishes were identified.*

*Zooplankton have a direct bearing in the fish industry. The zooplankton peak was found during summer followed by winter and rainy season. Zooplankton was observed about four groups as Rotifera observed about ten species, Copepoda observed about seven species, Cladocera observed six species and Ostracoda observed about two species.*

*The fish fauna were observed at the Vishnupuri dam. There are culture of fish with quick growing varieties of fishes including Indian Major Carps, exotic species have been popular in recent time. There is abundance of the species such as Catla, Labeo rohita, Cirrhinamrigal, , Cyprinus carpio, Silver carp, Barbus, Mystus, Wallago, Mystus, Channa, etc. Fish is economically a very important group of animals which is used as food. Fish liver is an important source of oil containing Vitamins A and D, several minerals and protein.*

**Keyword:** Vishnupuri Dam, Zooplankton, Pollution, Fish production.

**INTRODUCTION**

India has a large network of river, canals, lakes and ponds, which contribute more than 30% of the total fish production. Fish form one of the most important group of animals for man. Majority of our people suffer from hunger and malnutrition. Fish is an excellent food for man and provides protein, fat and vitamin A and D, which are essential for the health of man. Fish is also provide source of vitamin B, it food rich in protein is specially preferred for containing essentially amino acid such as Lysine and methionine abundantly required for formation of phospholipids in gray matter of the brain unsaturated fat in fish also reduce the risk of formation of high blood cholesterol. Phosphorus and several minerals are also present in it. They have good taste and easily digestible. Besides being a rich source of food, fishery provides job opportunities also.

The studies of fish diversity from different fresh water bodies of India have been carried out during the last few decades Hamilton Buchanan (1822), Day (1878), Mishra (1962), Jayaram (1981) Thomas et.al. (1989), Talwar & Jhingra (1991), Menon (1992), Rao et.al (1999). Sarkar and Banerjee (2000), Mishra et.al.(2003). There are over 19000 reservoirs in India. Covering 3, 15,366 ha. And many more are under

construction. Suguman(2000) Reservoir Fishery in India is also important from social economic point of view as it has the potential of providing employment to about 2 million people (Khan Et.al.1999). According to Shrinivasan (1993) the Maharashtra is endowed with an area of 1,79,430 hector. Under reservoir and the state produces 516 tons of fish of these area the state fisheries corporation was operating in 6,272 hector. Of reservoir and marketing the catches.

The present investigation was under taken to study the aquatic vertebrate animals with reference to fishes from Vishnupuri dam water. It is irrigation project of Maharashtra state. It is situated in the latitude  $19^{\circ}06'43''$  N and longitude  $77^{\circ}17'20''$  E. It is multipurpose type like irrigation and power production and also fishing purposes.

#### MATERIAL AND METHOD:

Sample collected and preserved in 4 % solution of formalin. The quantitative and qualitative analysis was carried out by taking 20 ml of concentrate obtained by siphoning the supernatant liquid. The genera of Zooplankton were identified and quantitative determination was carried out referring Needhan and work of Edmondson. Zooplankton were counted by drop count method and the results were converted to organisms per ml of water. The counting was done following the work of Edmondson (1965), APHA, AWWA and WPCF (1985), Trivedy and Goel (1984), Tonapi (1980), Standard key & other literature were used for identification of different species and the identified species were expressed in no. per liter.

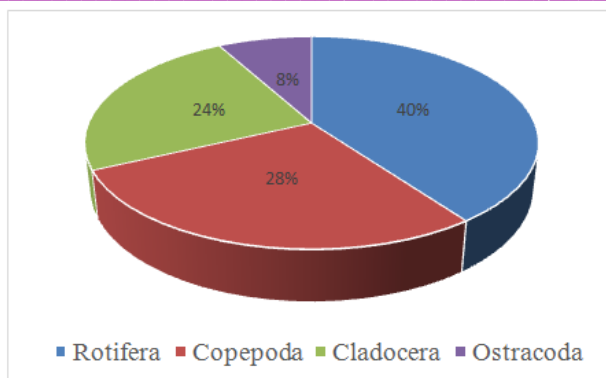
The fishes were collected from the Vishnupuri dam with the help of fisherman during the year June 2017 – May 2018. The specimen were preserved in 10% formalin and subsequently identified following work of Lagler (1956) Menon and Talwar (1972), Day (1878), DattaMunshi&Srivastav (1968), Jayram (1981) and Talwar & Jhingran (1991).

#### RESULT AND DISCUSSION:

The importance of zooplankton has been clearly demonstrated that the zooplankton constitute the only food for the fish fry and the adult fish not only eat them, but also select them as a delectable item. Thus zooplankton have a direct bearing in the fish industry. In India, several studies were conducted in reservoirs elucidating the characteristics of zooplankton. The zooplankton peak was found during summer followed by winter and rainy season. Zooplankton was observed about four groups as Rotifera observed about ten species, Copepoda observed about seven species, Cladocera observed six species and Ostracoda observed about two species.

**Table 01 :List of Zooplankton and their percentage during the year 2017-18**

<b>Rotifera</b>	<i>Asplanchna intermedia</i> , <i>Brachionus durgae</i> , <i>B. forficula</i> , <i>B. pallas</i> , <i>B. angularis</i> , <i>B. calyciflorus</i> , <i>B. rubens</i> , <i>Filinabornya</i> , <i>F. terminalis</i> , <i>Philodena sp</i>
<b>Copepoda</b>	<i>Agrulus foliaceus</i> , <i>Cyclops strennus</i> , <i>Mesocyclops</i> , <i>Microcyclops</i> , <i>Diaptomus</i> , <i>Phyllodiaptomus</i> , <i>Sinodiaptomus</i> .
<b>Cladocera</b>	<i>Alona rectangularis</i> , <i>Chydorus siccatus</i> , <i>C. cornuta</i> , <i>Monia dubia</i> , <i>M. brachiate</i> , <i>Daphnia similis</i> .
<b>Ostracoda</b>	<i>Cypris</i> , <i>Strendesia</i> .



Fish as constitute economically a very important group of animals. A large number of dams and reservoir has been constructing during the recent year to provide water for irrigation and power production. These bodies of water offer immense scope for fish culture for successful fish farming in dam and reservoir.

The Ten species of the fish fauna in this study belonging to four order and six families are given in the table among them order Cypriniformes was dominant with eight species to be followed by the Mastalimbeliformes and Osteoglossiformes each with one species. Sakhare (2001) recorded 23 fish species belonging to 7 orders in Jawalgaon reservoir in Solapur district. Pawar and Madlapure (2002) recorded 11 fish species belonging to 5 order in sirurdam. Ingole (2005) recorded 11 fish species occurrence in the Majalgaon dam reservoir.

**Table 02 :Fish diversity from Vishnupuri Dam**

Class	Sub-class	Order	Family	Speices
Pisces	Teleostomi	Cypriniformes	Cyprinidae	<i>CatlaCatla</i>
				<i>Labeorohita</i>
				<i>Cirrhinamrigal</i>
				<i>Cyprinuscarpio</i>
				<i>Silver carp</i>
				<i>Barbusticto</i>
			Siluridae	<i>Mystusseenghala</i>
				<i>Wallagoattu</i>
		Mastaembeliformes	Mastamecembelidae	<i>M. armatus</i>
		Ophiocephaliformes	Channidae	<i>Channastaitus</i>

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