

STUDIES ON PLANKTON OF ANNRAJ DAM OF DISTRICT GARHWA , JHARKHAND

1;-Dr. Dibya Prakash Panday

Head of department(Zoology), S.S.J.S.N.P.G College Garhwa,Jharkhand,
(822114).INDIA. Mob;-9431526661, email;-dpswetabh3@gmail.com

2;-Pratibha Kumari

Department of Zoology Nilamber Pitamber University ,Medininagar Palamau
-822101 (Jharkhand) India .

Mob ; 6204165245,

email;- pk6090051@ g mail.com

ABSTRACT :-The paper of qualitative as well as quantitative study of micro and macro plankton organisms of Annraj dam of the district Garhwa,12 species of phytoplankton and nine species of zooplankton were recorded .Number of phytoplankton increases in the month of January and decreases in month of march ,while a number of zooplankton increases in the summer season and decreases in winter season . Plankton are indicator of the productivity of the water bodies,eutrophication,pollution and other qualities of water bodies / resource.This study provide information about diverse utilization of water bodies/resources.

INTRODUCTION :- Annraj dam is situated about 12 Km south from Garhwa town on NH -343 Garhwa Ambikapur road at Bhadua.longitude 83.81 and latitude 24.06.this reservoir/dam constructed by PHED department Government of Jharkhand in 1984 for the purpose if irrigation . It is lentic water body can be used for culture of fishes ,drinking water supply for locality and it can be developed as tourist place like Nainital lake of Uttarakhand.

The level of water increases in July and august decreases in May and June.The water level is 10'-12'depth in rainy season and 5'-6'depth in summer season.

The phytoplankton population in any aquatic system is biological wealth of water for fishes and constitute a vital link in the food chain,whereas the zooplankton is an important source of food for fishes in the water body. The knowledge of plankton composition abundance and distribution helps to evaluate their significance as fish food ,for proper growth and maintenance of a water body,phytoplankton and zooplankton have their definite roles.

METHOD &OBSERVATION:-

Zooplankton were sample with mushroom shaped scooping bottom sampler which collected a sample of about 10cm x 10cm.

Phytoplankton collected by hauling 2-3 liters of water through the plankton net (Bolting silk no-25, mesh size 0.3 - 0.4mm).

The entire collected sample were brought to the laboratory for further investigation as per the method Singh S.N.

A sample of 250 was taken out and passed through guarded sieven and wash thoroughly with water.The organism collected in seiven were transferred to a bottle filled with water,the zooplankton were first observed in living and then preserved in 5% formaldehyde solution (formalin).

**TABLE - I, Zooplankton group of Annraj Dam
 (During study period January 2020 -December -2020)**

Sl .no.	1	2	3	4	5	6	7	8	9
Name of Zoo plankton	Daphnia Crustacea	Maggot (larva)	Branchipus Hemiptera	Psychoda spp.	Wriggler (larva)	Cicada	Tendepes	Ranatra	Laccotrephes griseus (diptera)
Jan	△	△	△	△	-	△	△	△	△ △
Feb	△	△ △	△	△	△ △	--	△	--	△
Mar	△ △	△ △ △	△	△	△ △ △	△	△	△	△ △ △
Apr	△ △	△ △	△ △	△ △	△ △	△ △	△ △	△ △	△ △
May	△ △ △	△ △	△ △	△ △	△ △	△ △	△	△	△ △
Jun	△ △ △	△ △	△ △	△ △ △	△ △	△ △	△ △	△ △	△ △ △
July	△ △ △	△ △	△ △	△ △	△ △	△ △	△ △	△	△ △ △ △
Aug	△ △	---	△	△	--	---	---	△ △	△ △ △
Sep	△ △ △	△	△ △	△ △	△	△	△	△ △	△ △ △
Oct	△ △	△ △	△	△	△ △	△	△ △	△ △	△ △ △
Nov	△ △	△	△	△	△	△ △	△	△ △	△ △
Dec	△ △	△	△	△	--	△	---	△	△ △
Frequen cy class	B	A	A	A	A	A	A	A	B

Note;- - = Nil/Absent

△ = Rare (0 --10 %)

△ △ = Frequent (11 --25%)

△ △ △ = Common (26 -- 50%)

△ △ △ △ = Abundant (51--100 %)

**TABLE -2, Phytoplankton group of Annraj Dam
 (During study period January 2020 --December 2020)**

Sl. no .	Name of phytoplanktons	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Frequency class
1	Chlorella spp.	△	---	△	---	---	----	△ △	----	△	△	△ △	△	A
2	Oedogonium spp.	△ △	△	△	△	△	△	△	----	△	△ △	△	△	A
3	Spirogyra spp	△ △	△	----	△	△	△	△	---	△	△	△	△	A
4	Ulothrix spp.	△ △	△ △	---	△ △	---	---	--	△ △	△	△ △	△	△	A
5	Volvax spp.	△	△	---	△	△	△	△	△	△ △	△ △	---	---	A
6	Chara vulgaris	△ △	△	△ △	△ △	△	△	△ △	△ △ △	△ △	△ △	△	△	A
7	Hydrodictyon spp.	△	△	△	---	△	△	----	△	----		△	---	A
8	Horimidium spp.	△ △	△ △	---	△ △	△	△ △	△ △ △	△ △ △	△ △ △ △	△ △ △	△	△	B
9	Pandorina morum	---	△ △	△ △	△ △	△	△	△ △	△ △ △	△ △ △	△ △	△	△	B
10	Chetophora spp.	△	△	△ △	△ △	△	△	△ △	△ △	△ △ △	△ △	△ △	△	A
11	Scendesmus spp.	△	△	△	△	△	----	△	△	△ △	△	△	△	A

12	Zygnema spp.	△	△	△ △	△	---	△	△ △	---	△	△ △	△	△	A
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Key word:- Zooplankton, Phytoplankton, limnology, biotic&abiotic factors, eutrophication etc.

RESULT /CONCLUSION & DISCUSSION'

Samples of water body for investigation of zooplankton were collected in the year 2020 (January --December) and their % were calculated in the table I, nine spp. of zooplankton were collected during different months of the year , highest value was recorded in the month of Feb-March, their increasing trend was found to be from Feb-May again in September.

The decreasing trend was recorded from October to Feb and from may to September.

Some larvae absent in deep zones and irregular in shallow zone. The abundance of various zooplankton were not equal in shallow and deep zones. Some investigators correlate bottom community of water body with the fish productivity.

Devey and Eggletons finding is the number of zooplankton is maximum in the month of April and minimum in September in an American lake.

Bose, Lakara and Moitra found maximum peak in summer month.

During the investigation the presence of zooplankton were maximum in the summer season and minimum in spring months. This finding varies from place to place due to difference in nature of water bodies, composition of abiotic factors of water and soil and variation in the productivity of the water bodies.

Phytoplankton are photosynthetic/Autotroph produce oxygen which assists overall water system functioning and provide cover and food to fishes.

Green algae were found throughout the year of investigation but in lesser number. The maximum (51 -85%) in January and minimum (11 -25%) in the march ,(table-2)

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