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By

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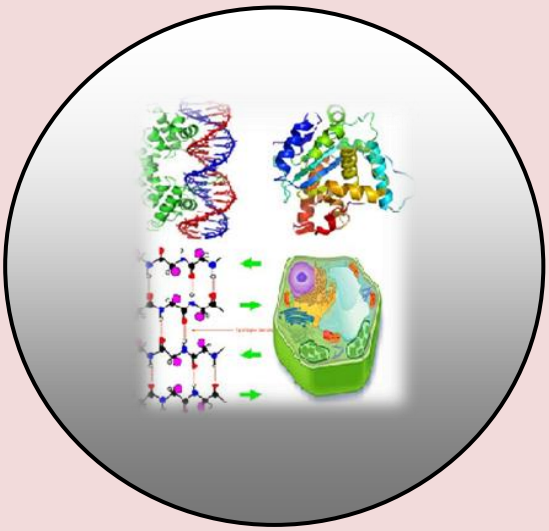

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RESEARCH PAPER

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Study on Water Analysis in Ponds in the Sabang Block Areas (W.B) India

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ABSTRACT

This physic-chemical is changed in fresh water by the variable factors. Plankton develops by the physic-chemical changes in pond water significantly. This change involves the low and high temperature in the water body. Low and high level of pH is changed by the physic-chemical process. Dissolved oxygen decides the fresh water quality in the ponds. Its' maintain the water health. Free carbon dioxide in the pond is changed in the water by every factor. Physic-chemical change the conductivity of water after and before use of bacterial suspension.
Key words: Water analysis, Physic-chemical, Temperature, pH and Fresh water.

INTRODUCTION

Fresh water in the pond in Sabang block area is changeable in every month. This physic-chemical is changed in fresh water by the variable factors. Plankton develops by the physic-chemical changes in pond water significantly. This change involves the low and high temperature in the water body. Low and high level of pH is changed by the physic-chemical process. Dissolved oxygen decides the fresh water quality in the ponds. Its' maintain the water health. Free carbon dioxide in the pond is changed in the water by every factor. Physic-chemical change the conductivity of water after and before use of bacterial suspension. Planktonic density of pond water is variable by the physic-chemical changes. This pH, temperature, free CO_2, conductivity, plankton density is measure by verities methodology. Fish growth and fish quality depends on the before and after use of bacterial suspension, physic-chemical quality and planktonic composition of the ponds. In Sabang block areas there are five ponds like Ghat pond (CP), Dhara pond (EP1), Majari pond (EP2), Nandan pond (EP3) and Masanta pond (EP4). All ponds are filled by the rainy water.

MATERIALS AND METHODS

Water and soil analysis

The water was analyzed for the ambient water temperature, pH, dissolved oxygen, free carbon dioxide and conductivity following the standard method of APHA (1980). The plankton density was measure as directed by Jhingran (1982). The bacterial population was counted by plate count method. The pond bottom soil was analyzed for nitrogen, available phosphorus and available potassium following the standard methods of AOAC (1980).

Analysis of water sample

Temperature (^{O}C)

For determining temperature of surface water, dip the thermometer directly into the water, keep it there for about one minute and note the temperature reading in the thermometer immediately.

Measurement of pH

Procedure:

100 ml of water sample was taken from each pond and transferred into 250 ml beaker for each sample. Then the pH meter was adjusted with reference solutions before emerging glass electrode into the eater sample. Then pH of water sample was recorded.

Dissolved oxygen (ppm)

Procedure

Collect water sample in a 100 ml bottle. Add 1ml each of $MnSO_4$ and K solution through pipettes dipping slowly in the bottom of bottle. Care should be taken to create minimum disturbances to the sample during these exercises. Whitish color of the precipitation indicator poor status of DO while reddish to brown color is represented moderate to high values. Add 1 ml cone. H_2SO_4 and invert the stopper bottle a few times to dissolve the precipitate. Take 50ml of the solution to a 250 ml conical flask and titrate with freshly prepared 0.025 N $Na_2S_2O_3$ till the color of the solution turns fade. Add 0.5 ml of starch indicator to form a blue color and continue the titration carefully. At the end point, the blue color will suddenly change to colorless.

Calculation

Concentration of DO in water sample (ppm) = ml of 0.025 $Na_2S_2O_3$ used × 4

Free Carbon-dioxide (ppm)

Procedure

Take 100 ml of the freshly collected water sample in a white porcelain basin. Add 3 – 4 drops of phenolphthalein indicator into the water. If the sample turns pink, the pH of water is above 8.3 and free CO_2 is not present. If the solution remains colorless after addition of indicator titrate it with N/44 NaOH with gentle stirring with a glass rod till the color turns pink.

Calculation

Concentration of free CO_2 (ppm) = ml of N/44 NaOH required for titration × 10

Conductivity of water (mhos/cm)

Procedure

It is measured with the help of a conductivity meter. The factor used to convert the observed conductance into conductivity is called as the "cell constant". Note the temperature of the sample and find out the factor to convert the values at 25^{0}C. Factors for converting the values of conductivity at 25^{O}C (After Golterman, 1978).

Calculation

Conductivity = Observed conductance × cell constant × temperature factor at 25^{O}C

Plankton density (50 liters water $^{-1}$)

Prior to measurement of plankton density both in CP and experimental ponds (EP1 – EP4), planktons were collected by plankton net from nine different region of a pond by random sampling method (five liter of water from each region). Volume of collected water was passed through the plankton net (50 liters for each pond). Then the collected plankton was measured in terms of plankton volume (cu. ml) per 50 liters of sampling water in a ml graduated test tube. From the collected sample, the most dominated common phytoplanktons and zooplanktons were identified.

Results of Water temperature (^{O}C) (2015-16) season

Water temperature of the ponds was variable in every month. We see the water temperature. The water temperature in the month of July 2015 was in CP pond 30.45^{O}C, EP1 pond 31.02^{O}C, EP2 pond 30.72^{O}C, EP3 pond 28.75^{O}C and EP4 29.01^{O}C. In the month of August the water temperature was in CP pond 28.78^{O}C, EP1 pond 30.29^{O}C, EP2 pond 31.29^{O}C, EP3 pond 29.84^{O}C and EP4 26.39^{O}C. The water temperature in the month of March was in CP pond 23.54^{O}C, EP1 pond 22.97^{O}C, EP2 pond 26.89^{O}C, EP3 pond 26.33^{O}C and EP4 28.89^{O}C. In the month of April the water temperature was in CP pond 29.05^{O}C, EP1 pond 29.16^{O}C, EP2 pond 28.66^{O}C, EP3 pond 26.65^{O}C and EP4 31.74^{O}C.

The water temperature in the month of May 2016 was in CP pond 30.25^{O}C, EP1 pond 32.06^{O}C, EP2 pond 31.85^{O}C, EP3 pond 30.01^{O}C and EP4 31.19^{O}C. In July month the average temperature was 30^{O}C. In August month average temperature was 29^{O}C, the month of September 26^{O}C, month of October 25^{O}C, month of November 21^{O}C, month of December 19^{O}C, month of January 20^{O}C, month of February 23^{O}C, month of March 25^{O}C, month of April 29^{O}C and month of May 31^{O}C. The lowest and highest temperature of this season was in the month of May 31^{O}C and month of December 19^{O}C. In Ghat pond (CP) lowest count of water temperature was 16.21^{O}C in the month of December and highest water temperature was 30.45^{O}C in July month. In Nandan pond (EP3) minimum measure of water temperature was 16.65 ^{O}C January month and maximum water temperature was 30.01^{O}C in May month. In Masanta pond (EP4) lowest amount of water temperature was 18.09^{O}C in the month of January and high count of water temperature was 31.74^{O}C in the month of April.

Table of Water temperature (^{O}C) Season (2015 – 2016).

Months	CP	EP1	EP2	EP3	EP4
July	30.45 ±0.226	31.02±0.469	30.72±0.518	28.75±0.761	29.01±0.470
August	28.78±0.261	30.29±1.394	31.29±0.465	29.84±0.591	26.39±0.992
September	22.64±0.124	25.6±0.384	26.65±1.185	30.83±0.48	25.02±0.941
October	25.14±0.456	25.69±1.156	29.79±1.258	29.32±0.718	25.99±0.472
November	18.05±0.22	18.55±0.177	22.01±0.941	24.42±1.038	19.01±0.942
December	16.21±0.20	17.21±0.449	20.39±1.560	20.42±0.739	18.85±1.53
January	17.83±0.252	22.18±1.063	19.22±0.456	18.65±0.717	18.09±0.422
February	22.64±0.347	24.99±0.952	29.97±1.519	22.53±1.03	23.77±0.752
March	23.54±0.712	22.97±0.845	26.89±1.155	26.33±1.511	28.89±1.591
April	29.05±0.394	29.16±0.844	28.66±0.542	26.65±0.271	31.74±0.664
May	30.25±0.313	32.06±0.314	31.85±0.288	30.01±0.471	31.19±0.523

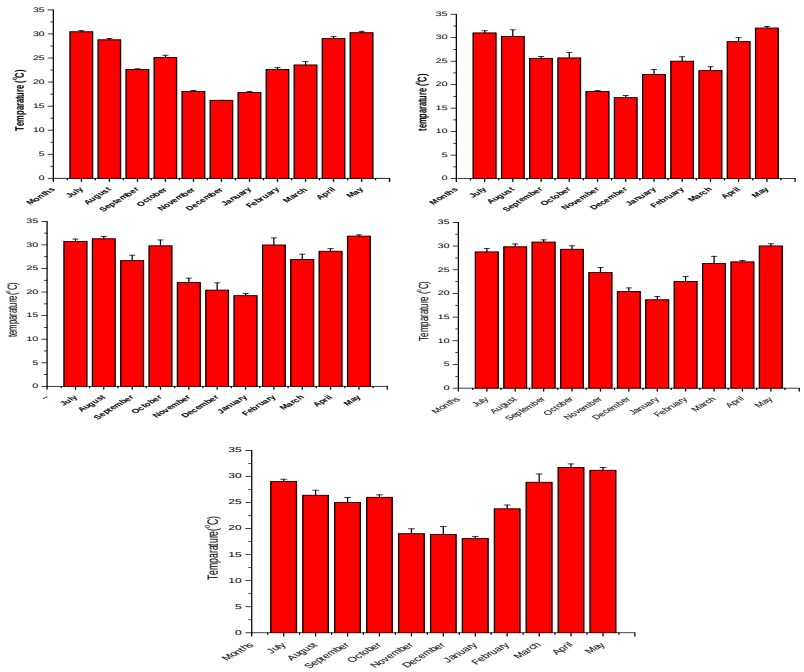

Figure of Water Temperature

Results of pH of water (2015-16) season

The pH of water was variable in every month, every season. This ph depend on every factor and pH maintains the fish quality and fish growth. pH of water detected by the pH meter. pH of ponds water indicates the basic and acidic nature. pH was calculated in five ponds (CP, EP1, EP2, EP3 and EP4).

In the month of July 2015 the pH of water was in CP pond 6.95, EP1 pond 7.09, EP2 pond 7.46, EP3 pond 6.89 and EP4 pond 6.79. The pH of water in the month of August was in CP pond 6.88, EP1 pond 6.69, EP2 pond 7.29, EP3 pond 6.89 and EP4 pond 6.79. In the month of March the pH of water was in CP pond 7.00, EP1 pond 7.29, EP2 pond 7.00, EP3 pond 7.00 and EP4 pond 6.97. The pH of water in the month of April was in CP pond 7.23, EP1 pond 7.35, EP2 pond 7.23, EP3 pond 7.03 and EP4 pond 7.29. The pH of water in the month of May 2016 was in CP pond 7.26, EP1 pond 7.18, EP2 pond 7.29, EP3 pond 7.09 and EP4 pond 7.00. In the month of July, 2015 average pH of water in five ponds is 7.036. In Ghat pond (CP) the minimum pH of water was 6.84 in the month of September and maximum pH of water was 7.26 in the month of December, 2015. In Dhara pond (EP1) the lowest pH of pond water was 6.69 in the month of August and highest ph of water was 7.35 in the month of January. At last Masanta pond (EP4) the lowest pH of water was 6.79 in the month of August and highest pH of water was 7.29 in the month of April.

Table of pH of water Season (2015 – 2016)

Months	CP	EP1	EP2	EP3	EP4
July	6.95±0.026	7.09±0.047	7.46±0.164	6.89±0.046	6.79±0.046
August	6.88±0.002	6.69±0.071	7.29±0.124	6.89±0.046	6.79±0.046
September	6.84±0.064	7.26±0.097	7.09±0.124	6.79±0.046	7.02±0.071
October	6.92±0.023	6.95±0.026	7.29±0.204	7.03±0.071	7.06±0.053
November	7.00±0.045	7.22±0.116	7.03±0.118	6.92±0.072	7.05±0.052
December	7.26±0.118	7.12±0.54	7.22±0.125	7.11±0.046	6.89±0.047
January	6.89±0.045	7.35±0.072	6.79±0.125	6.88±0.027	6.91±0.047
February	6.91±0.035	7.25±0.096	7.48±0.046	6.95±0.054	6.90±0.097
March	7.00±0.052	7.29±0.092	7.00±0.047	7.00±0.046	6.97±0.028
April	7.23±0.117	7.35±0.071	7.23±0.118	7.03±0.028	7.29±0.204
May	7.26±0.117	7.18±0.125	7.29±0.124	7.09±0.162	7.00±0.047

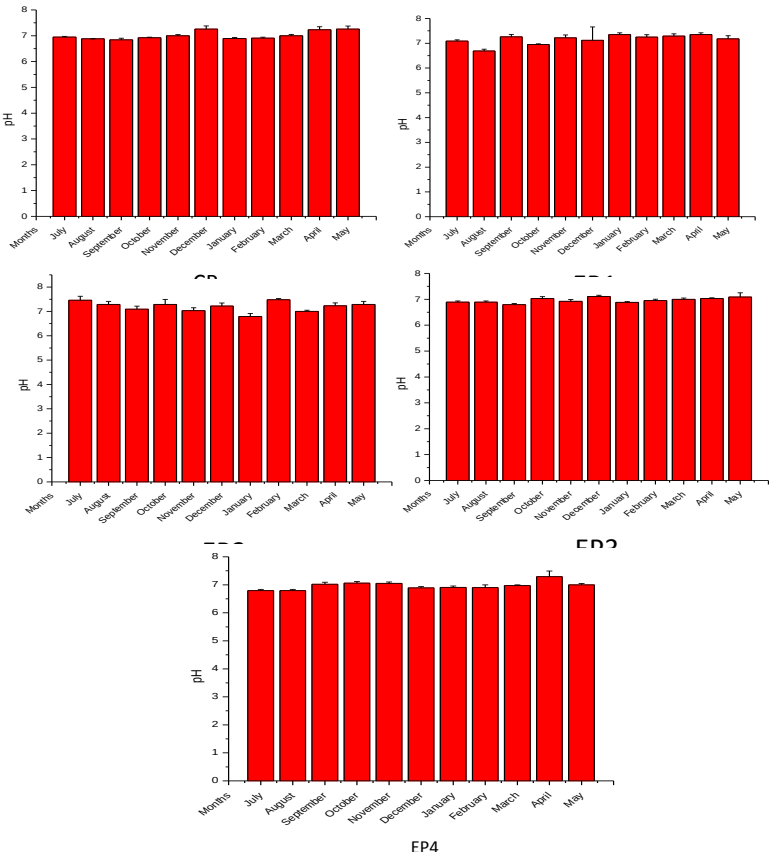

Figure of The pH of water.

Results of Dissolved Oxygen (ppm) (2015-16) season

In the month of July 2015 the dissolved oxygen in water was in CP pond 8.46ppm, EP1 pond 8.49 ppm, EP2 pond 8.39 ppm, EP3 pond 6.26 ppm and EP4 pond 6.29 ppm. The dissolved oxygen in water in the month of August was in CP pond 8.22 ppm, EP1 pond 8.36 ppm, EP2 pond 9.19 ppm, EP3 pond 6.19 ppm and EP4 pond 6.19 ppm. In the month of March the dissolved oxygen in water was in CP pond 9.21 ppm, EP1 pond 10.22 ppm, EP2 pond 10.07 ppm, EP3 pond 10.11 ppm and EP4 pond 10.19 ppm. The dissolved oxygen in water in the month of April was in CP pond 9.21 ppm, EP1 pond 9.12 ppm, EP2 pond 9.26 ppm, EP3 pond 9.19 ppm and EP4 pond 9.29 ppm. In the month of May 2016 the dissolved oxygen in water was in CP pond 8.09 ppm, EP1 pond 8.16 ppm, EP2 pond 8.88 ppm, EP3 pond 9.09 ppm and EP4 pond 9.22 ppm. In Nandan pond (EP3) minimum dissolved oxygen was 6.19 ppm in the month of January and maximum dissolved oxygen was 10.11 ppm in the month of March. In Masanta pond (EP4) lowest dissolved oxygen was 6.19 ppm in the month of August and highest dissolved oxygen was 10.19 ppm in the month of March.

Table of Dissolved Oxygen (ppm) Season (2015 – 2016)

Months	CP	EP1	EP2	EP3	EP4
July	8.16±0.071	8.49±0.234	8.39±0.248	6.26±0.054	6.29±0.094
August	8.22±0.117	8.36±0.097	9.19±0.046	6.19±0.124	6.19±0.046
September	9.11±0.047	9.36±0.152	8.22±0.117	8.12±0.072	8.22±0.071
October	8.20±0.047	9.09±0.047	9.19±0.047	8.29±0.0815	8.26±0.097
November	9.31±0.081	9.16±0.053	9.29±0.081	8.19±0.124	8.29±0.082
December	10.02±0.027	10.22±0.117	9.22±0.118	9.22±0.119	9.11±0.046
January	8.42±0.746	9.16±0.026	7.34±0.061	7.37±0.075	8.19±0.046
February	10.11±0.047	10.06±0.055	9.11±0.0472	8.09±0.047	9.19±0.046
March	9.21±0.047	10.22±0.118	10.07±0.0285	10.11±0.046	10.19±0.0472
April	9.21±0.093	9.12±0.055	9.26±0.097	9.19±0.094	9.29±0.204
May	8.09±0.047	8.16±0.071	8.88±0.335	9.09±0.048	9.22±0.117

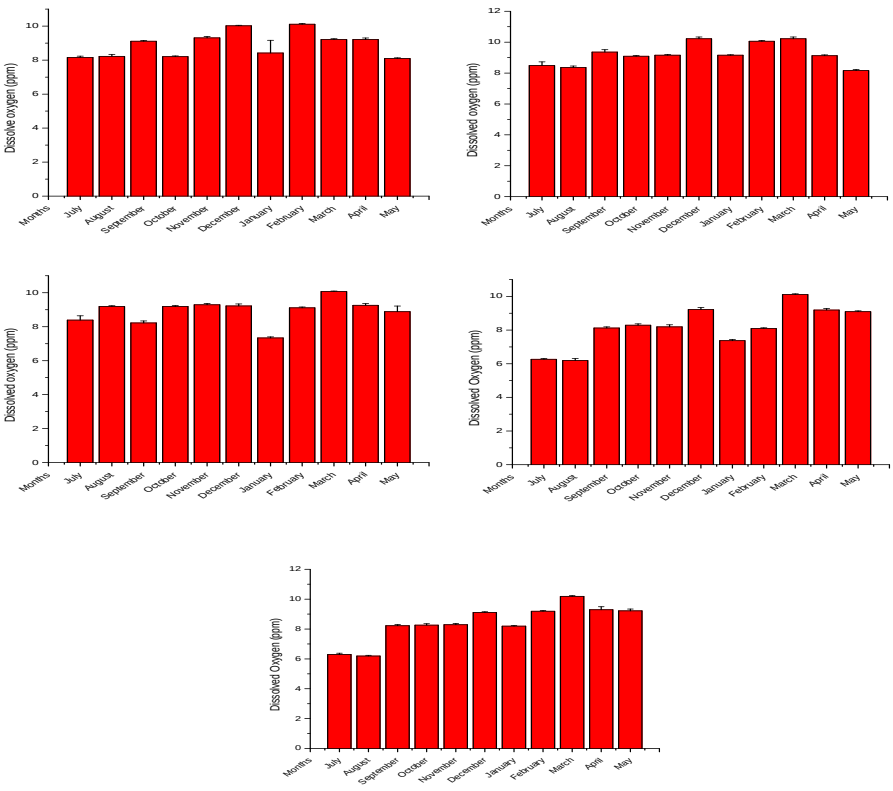

Figure of Dissolved Oxygen

Results of Free Carbon dioxide (ppm) (2015-16) season

In the month of July 2015 the free CO_2 in water was in CP pond 5.93 ppm, EP1 pond 6.17 ppm, EP2 pond 6.06 ppm, EP3 pond 5.28 ppm and EP4 pond 6.19 ppm. The free CO_2 in water in the month of August was in CP pond 6.79 ppm, EP1 pond 6.55 ppm, EP2 pond 6.79 ppm, EP3 pond 6.29 ppm and EP4 pond 6.36 ppm. The free CO_2 in water in the month of April was in CP pond 7.22 ppm, EP1 pond 6.22 ppm, EP2 pond 7.22 ppm, EP3 pond 6.96 ppm and EP4 pond 7.12 ppm. In the month of May 2016 the free CO_2 in water was in CP pond 5.29 ppm, EP1 pond 4.72 ppm, EP2 pond 6.06 ppm, EP3 pond 5.53 ppm and EP4 pond 5.84 ppm. In Sabang block area the average free carbon dioxioed was 5.926 ppm in the month of July, 2015. In the month of August the average free carbon dioxyed was 5.556 ppm. The average free carbon dioxied was 5.66 ppm in the month of September. In the month of October the average free CO_2 was 5.816 ppm. The average free CO_2 in the month of November was 4.794 ppm. In the month of December, 2015 the average free CO_2 was 5.894 ppm. The average free CO_2 was 5.884 in the month of January, 2016. In the month of February, 2016 the average free CO_2 was 5.628 ppm. In March month the average free CO_2 was 6.042 ppm. In Masanta pond (EP4) high number of free CO_2 in water was 7.12 ppm in the month of April, 2016 and lowest number of free CO_2 was 5.29 ppm in the month of January and February. The highest average free CO_2 in five ponds was present in the month of April, 2016 and lowest average free CO_2 was present in the month of November.

Table of Free Carbon dioxide (ppm) Season (2015 – 2016)

Months	CP	EP1	EP2	EP3	EP4
July	5.93±0.15	6.17±0.024	6.06±0.02	5.28±0.144	6.19±0.048
August	6.79±0.099	6.55±0.072	6.79±0.261	6.29±0.048	6.36±0.072
September	5.89±0.094	5.89±0.374	5.14±0.022	5.12±0.037	6.26±0.097
October	5.96±0.09	5.58±0.20	6.13±0.024	6.09±0.048	5.32±0.197
November	4.52±0.17	4.56±0.18	4.28±0.097	5.09±0.48	5.52±0.177
December	6.29±0.093	5.58±0.266	6.08±0.428	5.33±0.084	6.19±0.047
January	6.26±0.097	6.04±0.022	6.04±0.074	5.79±0.047	5.29±0.082
February	5.22±0.117	6.19±0.124	5.18±0.0273	6.26±0.097	5.29±0.125
March	5.42±0.137	5.22±0.117	6.89±0.310	6.32±0.151	6.36±0.107
April	7.22±0.118	6.22±0.107	7.22±0.117	6.96±0.447	7.12±0.0272
May	5.29±0.082	4.72±0.32	6.06±0.02	5.53±0.272	5.84±0.117

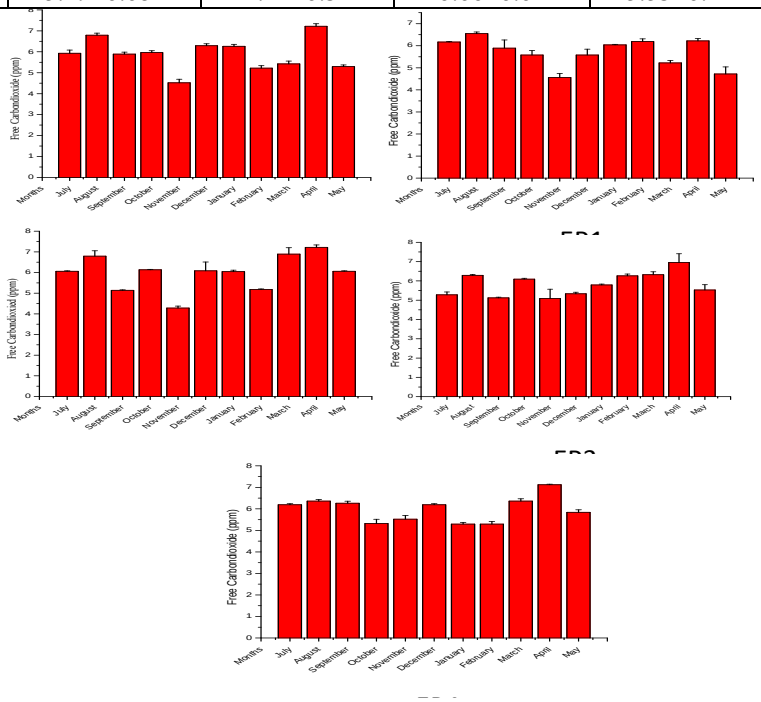

Figure of Free Carbon dioxide

Result of Conductivity (m hos/ cm) (2015-16) season

In the month of July 2015 the conductivity was in CP pond 236.33, EP1 pond 252.65, EP2 pond 262.32, EP3 pond 228.66 and EP4 pond 230.32. The conductivity in the month of August was in CP pond 248.32, EP1 pond 257.65, EP2 pond 272.00, EP3 pond 276.65 and EP4 pond 245.00. In the month of September the conductivity was in CP pond 281.32, EP1 pond 276.32, EP2 pond 289.32, EP3 pond 278.00 and EP4 pond 270.32. The conductivity in the month of February was in CP pond 227.32, EP1 pond 282.32, EP2 pond 283.32, EP3 pond 280.65 and EP4 pond 265.32. In the month of March the conductivity was in CP pond 278.82, EP1 pond 293.65, EP2 pond 284.65, EP3 pond 281.65 and EP4 pond 288.00. The conductivity in the month of April was in CP pond 268.67, EP1 pond 268.66, EP2 pond 265.00, EP3 pond 282.00 and EP4 pond 254.00. In the month of May 2016 the conductivity was in CP pond 260.32, EP1 pond 265.65, EP2 pond 259.00, EP3 pond 251.00 & EP4 pond 241.66. The average conductivity was 242.056 m hos/ cm in the month of July, 2015. In the month of August the average conductivity was 259.924 m hos/ cm. The average conductivity was 279.056 m hos/ cm in the month of September. In the month of October the average conductivity was 261.256 m hos/ cm. The average conductivity was 198.062 m hos/ cm in the month of November. In the month of December the conductivity was 195.594 m hos/ cm. The average conductivity was 258.858 m hos/ cm in the month of January, 2016. In the month of February the average conductivity was 276.786 m hos/ cm. The average conductivity was 285.354 m hos/ cm in the month of March. In the month of April the average conductivity was 267.732 m hos/ cm. The average conductivity was 255.526 m hos/ cm in the month of May, 2016.

Table of Conductivity (m hos/ cm) Season (2015 – 2016)

Months	CP	EP1	EP2	EP3	EP4
July	236.33±2.418	252.65±0.97	262.32±1.185	228.66±0.71	230.32±1.654
August	248.32±6.004	257.65±3.02	272.00±1.247	276.65±4.905	245.00±2.897
September	281.32±1.184	276.32±1.903	289.32±1.43	278.00±1.246	270.32±2.124
October	262.32±1.185	268.00±1.246	268.65±1.654	255.66±1.904	251.65±0.982
November	196.00±1.698	197.66±1.184	201.65±1.43	196.00±1.699	199.00±0.472
December	195.32±2.176	193.00±1.699	200.00±2.356	192.65±0.982	197.00±0.942
January	272.32±2.842	286.65±1.185	287.00±2.856	221.32±1.514	227.00±2.054
February	272.32±0.0316	282.32±1.513	283.32±3.138	280.65±1.44	265.32±1.655
March	278.82±3.934	293.65±1.903	284.65±1.43	281.65±0.981	288.00±1.246
April	268.67±0.718	268.66±1.514	265.00±2.356	282.00±0.941	254.33±6.434
May	260.32±2.371	265.65±1.903	259.00±3.092	251.00±0.471	241.66±3.067

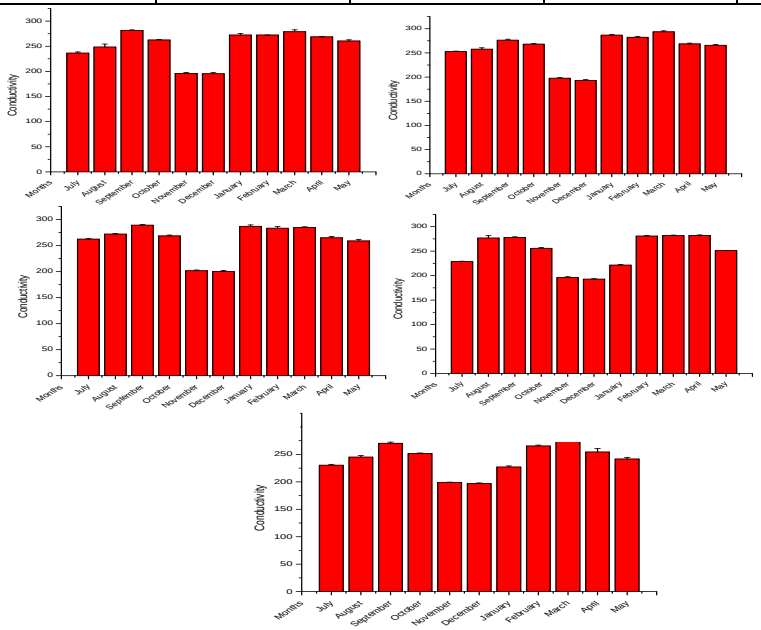

Figure of Conductivity

Results of Plankton density (ml 50 lit^{-1} water) (2015-16) season

In the month of July 2015 the plankton density was in CP pond 0.35, EP1 pond 0.47, EP2 pond 0.46, EP3 pond 0.38 and EP4 pond 0.38. The plankton density in the month of August was in CP pond 0.35, EP1 pond 0.44, EP2 pond 0.46, EP3 pond 0.37 and EP4 pond 0.38. In the month of March the plankton density was in CP pond 0.40, EP1 pond 0.54, EP2 pond 0.53, EP3 pond 0.47 and EP4 pond 0.46. The plankton density in the month of April was in CP pond 0.40, EP1 pond 0.53, EP2 pond 0.56, EP3 pond 0.47 and EP4 pond 0.46. In the month of May 2016 the plankton density was in CP pond 0.36, EP1 pond 0.45, EP2 pond 0.47, EP3 pond 0.42 and EP4 pond 0.42. The average plankton density in five ponds was 0.408 ml 50lit^{-1} water in the month of July, 2015. The highest average plankton density was 0.51 ml 50lit^{-1} water in the month of January, 2016 and lowest plankton density was 0.40 ml 50lit^{-1} water in the month of August, 2015. In this year (2015-16) Ghat pond (CP) maximum number of plankton density was 0.42 ml 50lit^{-1} water in the month of January, February, 2016 and minimum number of plankton density was 0.35 in the month of July, August and November 2015. In Masanta pond (EP4) the highest number of plankton density was 0.51 ml 50lit^{-1} water in the month of February and lowest number of plankton density was 0.38 ml 50lit^{-1} water in the month of July, August and November, 2015.

Table of Plankton density (ml 50 lit^{-1} water) Season (2015 – 2016)

Months	CP	EP1	EP2	EP3	EP4
July	0.35±0.007	0.47±0.007	0.46±0.008	0.38±0.006	0.38±0.004
August	0.35±0.004	0.44±0.002	0.46±0.007	0.37±0.0078	0.38±0.004
September	0.38±0.005	0.48±0.002	0.49±0.004	0.39±0.007	0.40±0.004
October	0.39±0.004	0.55±0.007	0.55±0.009	0.44±0.007	0.42±0.006
November	0.35±0.004	0.48±0.007	0.50±0.007	0.37±0.005	0.38±0.006
December	0.40±0.002	0.53±0.007	0.54±0.007	0.48±0.004	0.47±0.009
January	0.42±0.002	0.58±0.002	0.58±0.005	0.50±0.002	0.47±0.005
February	0.42±0.007	0.60±0.002	0.59±0.014	0.42±0.006	0.51±0.004
March	0.40±0.004	0.54±0.009	0.53±0.008	0.47±0.006	0.46±0.005
April	0.40±0.007	0.53±0.009	0.56±0.007	0.47±0.002	0.46±0.011
May	0.36±0.006	0.45±0.011	0.47±0.007	0.42±0.002	0.42±0.006

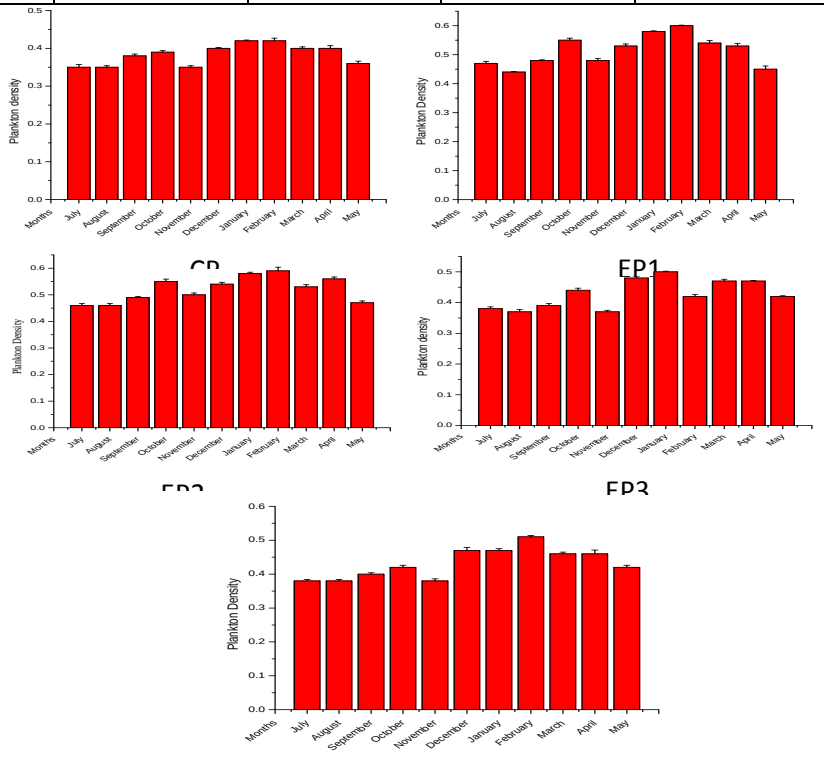

Figure of Plankton density

Overall discussion on physico-chemical quality as well as planktonic composition of water in ponds

It is known that in chemical characteristics of water greatly affect the pond productivity. The nature soil reflects the nature of water (Dutta and Kar, 1947). The characteristics of soil have been already dealt. The chemical characteristics which are involved in point productivity as well as fish production is reflecting in the discussion below.

Indian major carps thrive well in water within the range 21^{O}C – 30^{O}C. In this work temp varied between 16.22^{O}C to 30^{O}C throughout the experimental period in the first year. So, water temperature in most of the time of the experimental period was favorable for the growth of the carp selected for experiment. The pH level has influencing effect on the fertility of pond water. Swingly (1974), Depassel (1956), considered 6.5-9.0 as satisfactory range of fish cultivation. The range between (6.5-7.0) is recommended by Banejee (1967) as the best for fish culture. So, pH in the year of experiments was in no way unfavorable for the growth of the carps, selected for experiments.

Dissolved energy is one of the most important limiting factors for fish producing and surviving. Carps need 6.7 mg lit^{-1} strength of dissolved oxygen at about 20^{O}C for healthy growth of fish the dissolved oxygen of pond should not fall below 3 ppm Saha (1978), Ghosh (1978) repeated that 5 ppm of dissolved oxygen is required to maintain at favorable conditioned of a pond in fish farm. Jun et al; (2000) reported that bacterial suspension in fish culture pond water has correlation with dissolved oxygen content. In this experiment dissolved oxygen varied from 6.20-10.50 ppm during first and second year trial. Free carbon dioxide present in water as free CO_2, half pond HCO_3, it is maintain the Ph. Free CO_2 in water has been investigated and found in the range between 4.20 – 7.40 ppm in this year without adversely affecting the fish growth and production, indication a favorable range of carp culture. In this year conductivity was recorded highest in FPI 293.66(m hos /cm) and then 287.00 in EP2 and in this year highest in EPI in March 287.33 (mhos/cm) and then EP2 So, periphyton bacteria influence more than the denitrifying bacteria for the conductivity of water in the present study.

CONCLUSION

Study on water analysis in ponds in the Sabang block areas (W.B) India is scanty. But it has to be tremendous economic significance and relevance aquaculture practice which is likely to open new vistas pertaining to the sustainable development.

So the objective of the study was too evaluated of the routine use of a commercially and naturally improvement of water quality of ponds. So, temperature, pH, free CO_2, dissolved oxygen, conductivity in the year of experiments was in no way unfavorable for the growth of the carps.

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