ABSTRACT

The observation of weather during the study revealed that summer period (March to June) was found to be bright and sunny. The winter, summer, monsoon in the study period came across the mean pH 7.88, 7.48 and 7.03 respectively. The mean of pH value of 2014 was 7.35 and its value was 7.5 in 2015. The higher value of DO were noticed as 6.6 to 8.2 mg l-1(winter) in contrast to the values in monsoon (5.2 to 7.0 mg l^{-1}) and summer (4.7 to 6.2 mg l^{-1}). It was above the serious limit (3.0 mg l^{-1}). Dominance of bicarbonate alkalinity exhibited with the range from 32.0 (rain) to 119.0 mg l^{-1} (early summer) as phenolphthalein alkalinity was not met in the period of observation. The total hardness fluctuated between 68.8 and 118.4 mg l^{-1} with the peak value in May (118.4 mg l^{-1}) and lowest value in September (68.8 mg l^{-1}). The lower and higher readings of calcium of the pond were found 3.3 to 5.6 (winter) and 6.5 to 9.5 mg l^{-1} (rain) respectively.

In both the year population of phytoplankton, especially Chlorophyceae and Bacillariophyceae hit the highest point in winter season, but peak value in Myxophyceae was noticed during summer. It was noticed that the quantity of zooplanktons was generally higher in wintry weather and in sometimes is higher in summer. The value was minimum in rainy season. In zooplanktons, the diversity (Hs), Species equitability (j) and the Species richness (d) indices fluctuated from 0.63 to 2.30, from 0.95 to 1.02 and from 1.11 to 2.77 respectively with their maximum during winter and minimum during rainy season. The NPP value ranged from 0.028±0.003gC m^3h^{-1} to 0.832±0.083gC m^3h^{-1}. During February (winter) the maximum mean reading of NPP was observed where as lowest value was recorded during August (rain). The ratio of NPP and CR was maximum (7.09) in winter and minimum in monsoon. However, the CR percentage of GPP was observed to be highest (0.52) in the period of rains and lowest in winter.

For the present inquiry a sum of 540 freshly caught Indian major carps were collected and they were classified into three age groups i.e. 180 young (A1) with weight ranging from 150g to 350g (90 male and 90 female), 180 matured (A2) with weight ranging from 350g to 550g (90 male and 90 female) and 180 matured but adults (A3) with weight ranging from 550g to 750g (90 male and 90 female). After morphometric measurements (weight=200-750g, total length=31-42 cm, standard length=23.5-32 g) dissection was performed.

Biochemical study revealed moisture content in muscle of *L.rohita, C.mrigala* and *C.catla* were recorded with maximum values 81.04±0.72, 80.00±0.37 and79.58±0.87 percent one by one in female fishes in rainy season. Corresponding minimum values were recorded 75.02±0.85, 75.40±0.45 and 74.86±0.68 respectively in males in summer and winter. Moisture quantity of liver in *L.rohita, C.mrigala* and *C.catla* were recorded 73.93±0.24, 73.67±0.81 and 73.70±1.02 percent as maximum in females in rainy season, whereas minimum values were recorded 70.03±0.44, 68.54±0.18, 68.67±0.74 percent respectively in males in winter. During the study of ash amount in muscle, the maximal values were recorded 1.40±0.20 and 1.56±0.02 percent in female fish of *L.rohita and C.mrigala* respectively in winter season, but corresponding value of *C.catla* was 1.39±0.07 percent in males in summer. The minimum values of ash amount were 0.82±0.03, 0.90±0.03 and 0.95±0.02 percent in females of *L.rohita, C.mrigala* and *C.catla* respectively in rainy season. The highest and lowest level of protein amounts in muscle of *L.rohita, C.mrigala* and *C.catla* were 18.31±0.21, 16.04±0.85; 17.47±0.01, 15.25±0.67; 17.75±0.43, 15.11±0.43 respectively.