Methods and Materials

The experiment was conducted under both laboratory and natural conditions. Twelve 18 liters earthen pots labelled with A, B, C, D was used . Each letter represented a fertilizer treatment (3 replicates). A – Mustard Cake (100 gm), B- NPK (1:1:1) (50 gm) , C- NPK (50 gm) + Mustard Cake (100 gm) and D- control (without fertilizer).The tanks were filled to 2/3 with tap water.

Fertilizer Application

Each group of tanks received the following quantities of fertilizer. A.100 gm Mustard Cake, B. 50 gm NPK (1:1:1) , C.25 gm NPK + 100 gm Mustard Cake and D without fertilizer. Before the application of three combination of fertilizers water samples were taken from the tanks for phytoplankton analysis using 250 ml wide mouth plastic containers. All the tanks were allowed to be naturally inoculated for 3 days before applying fertilizers.

Phytoplankton Analysis

Phytoplankton were analysed and enumerated using appropriate tools. Samples were collected for phytoplankton analysis using 250 ml wide mouth plastic bottles and physicochemical parameters measurement at an interval of 3 days except temperature which was measured twice daily (morning and evening). The following physicochemical parameters were

measured : dissolved oxygen, temperature, ph , transparency using the appropriate scientific methods.

The water samples for phytoplankton analysis were collected separately in wide mouth bottles with the help of plankton net of 55 µm mesh size with some amount of pond water and immediately preserved in 4% formalin solution. The identification of phytoplankton were made following standard literatures. Algal count was done using Sedgewick Rafter Plankton counting Cell.

Enumeration and identification of planktons

The concentrated preserved plankton samples were analysed on a Sedgewick Rafter Plankton counting Cell (S R – Cell) under a compound binocular microscope. From each sample 1 ml sub sample was transferred to the cell and all planktonic organisms , 10 randomly selected sqares of the cell enumerated. The plankton abundance in original volume was then computed using the formula by Stirling (1985) :

$$N = \frac{A \times 100 \times C}{V \times F \times L}$$

Where

N = Number of plankton cells or units per litre of original

A= Total No of plankton counted

C= Volume of final concentrate samples in ml

V= Volume of field in cubic mm

F= Number of fields counted

L= Volume of original water in litre