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# Growth response of a local strain of *Oscillatoria* with varying phosphate concentration

**Shikha Choudhury[a]* & Madhu[b]**

[a]Dept. of Botany, S.N.S.R.K.S. College, Saharsa, BNMU, Madhepura, Bihar, India

[b]Res. Scholar, Dept. of Botany, S.N.S.R.K.S. College, Saharsa, BNMU, Madhepura, Bihar, India

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**Abstract :** N:P ratio plays vital role in determining the phytoplankton growth in any water body. Cyanobacteria can store large amounts of P intracellular which allows their persistence even in P limited conditions. The role of phosphorous on the growth of a local strain of Oscillatoria was evaluated. It was observed that the maximum growth is supported by 6.5 mg/l $KH_2Po_4$.

**Keywords : Groth response, *Oscillatoria,* phosphate concentration**

## INTRODUCTION

Many earlier workers have studied the role of Phosphorus in regulating the growth of bloom forming cyanobacteria (Sivonen, 1900; Thakur; 1996; Kumar et al., 2000). Phosphorus is an important nutrient required for growth and development of cyanobacteria. Cyanobacteria has the unique ability to store phosphorus within the cell and thus making them capable of cell division when phosphorus become limiting.

Much information is available regarding the role of phosphorus in bloom formation and species diversity (Kumar et al., 2000; Thakur, 1996). N:P ratio plays vital role in determining the phytoplankton growth in any water body. There exists wide difference in the optimum N:P ratio between species ranging from 7 to 8. Such variation suggest that at a given N:P supply ratio the growth rate of one species might by limited by N while that of another species might be limited by P. It is a known fact that cyanobacterial growth and P uptake kinetics favors their proliferation in P rich waters. Cyanobacteria can store large amounts of P intracellular which allows their persistence even in P limited conditions.

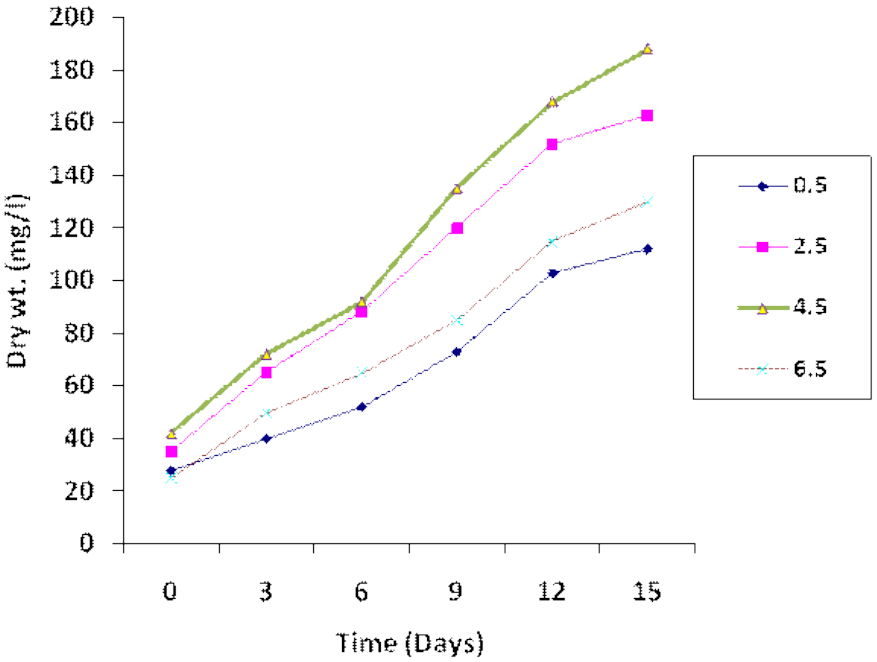
*Corresponding author :
Phone : 09472492042
E-mail : shikhachoudhury27@gmail.com

## MATERIAL & METHODS

A local strain of *Oscillatoria* collected from Nawhatta was culture in BG-11 medium. The culture was washed thoroughly with chlorine water and repeatedly culture in BG-11 medium containing the anti biotic Ampicillin to make axenic culture. The axanic culture was inoculated in same media with different Phosphate concentrations. 5 concentrations of $KH_2Po_4$ were prepared (0.5mg/l, 2.5mg/l, 4.5mg/l and 6.5mg/l) and added in BG-11 medium. The axenic culture was inoculated in each concentration of Phosphate and incubated at $34^0$ C in 2000 lux light intensity. Growth response was measured by tacking dry weight of alga. Growth was measured on 3rd day, 6th day, 9th day, 12th day and 15th day.

## RESULTS & DISCUTIONS

Maximum growth of *Oscillatoria* was seen in the medium supplemented with 4.5 mg/l phosphate followed by 6.5 mg/l. Minimum growth was reported at 0.5 mg/l of phosphate.




**Growth response of Oscillatoria in varying concentration of phosphate ($KH_2PO_4$)**

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