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Growth Behaviour Of Some Blue Green Algae In Different Culture Media

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Abstract:- Growth Behaviour of five local strain of blue green algae was tested. Growth was tested in BG-11 medium, chu-10 medium, ASN-III medium, ASP-2 medium, Allen Arnon medium and Gorham's medium. Growth were observed on 8th day, 12th day, 16th day, 20th day and 24th day. It was observed that *Anabaena circinalis*, *A.bornatiana*, *A.macrospora* showed maximum growth in chu-10 medium where as *Nostoc commun* and *Nostoc linckia* showed maximum growth in BG-11 medium.

Keywords:- Blue-green algae, BG-11 medium, chu-10 medium, ASN-III medium, ASP-2 medium, Allen Arnon medium and Gorham's medium.

Introduction:- Cyanobacteria known as blue-green algae (BGA) are diverse group of prokaryotes carry out oxygenic photosynthesis and are amongst the most successful and oldest life forms present on the planet. These are a group of gram negative photosynthetic bacteria that have colonized earth surface. BGA possess a great deal of morphological and metabolic diversity and can be used in economic development and environment management like waste water treatment, land reclamation, production of fine chemicals, atmospheric fixation of nitrogen, production of methane fuel, conversion of solar energy, food, feed etc. It also helpful for water storage and movement. Now BGA have been used for weight loss and as a nutritional supplement. It has also been used for boosting the immune system and for controlling cholesterol levels.

Methodology:-

Five local strains of Blue-green algae were collected which are *Anabaena circinalis*, *A.bornatiana*, *A.macrospora*, *Nostoc commun* and *Nostoc linckia*. Unialgal culture were prepared than Axenic culture were prepared *e*. Each strain was inoculated in 500ml. Erlenmeyer flask containing different media. After 5 days 1 ml inoculum was taken from each flask and transferred in ASN-III medium, ASP-2 medium, Allen Arnon medium and Gorham's medium. Growth were observed on 8th day, 12th day, 16th day, 20th day and 24th day. In each experiment light intensity was adjusted to 1000 lux and temperature 28^oC.

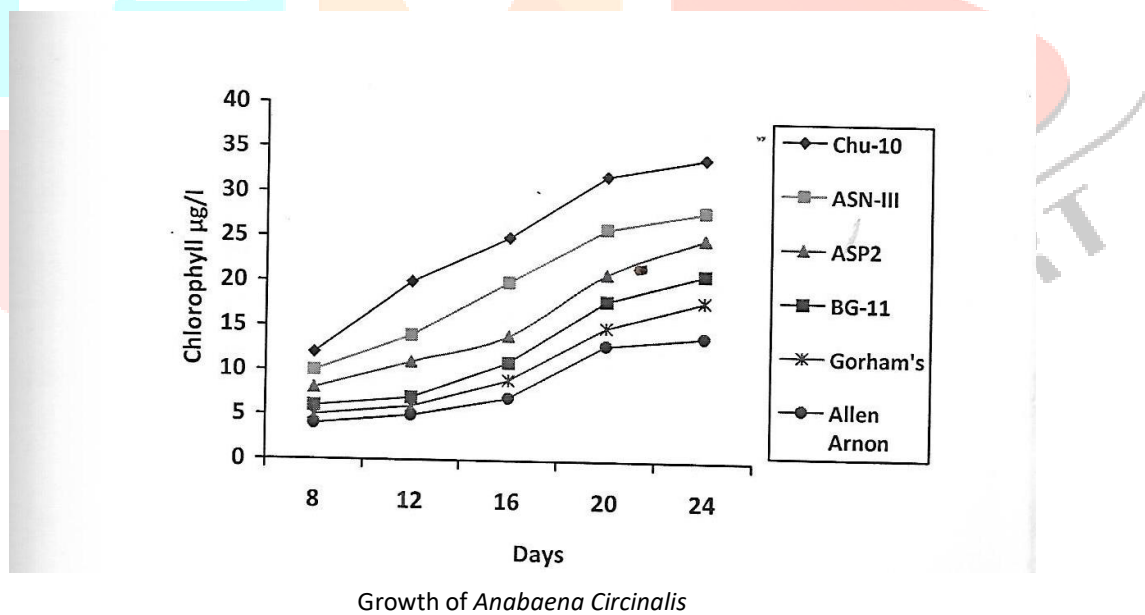
Growth was observed by determining chlorophyll content. The chl α concentration was used as an estimate of culture growth. 1 ml from each culture flask was removed and placed in centrifuge tubes. Tubes were then centrifuged for one minute. The supernatant was decanted and discarded. 3 ml of 100% methanol was then added to each sample and the sample was vortexed. Samples were then placed in the dark for 15 minutes. Samples were finally centrifuged for 1 minute. The supernatant was then monitored for chl α using a spectrophotometer at 665nm. The chl α content of the combined extracts was determined from the optical density of the solution at 665 nm using the formula: $\mu\text{g chl } \alpha / \text{ml} = 13.43(A_{665})$

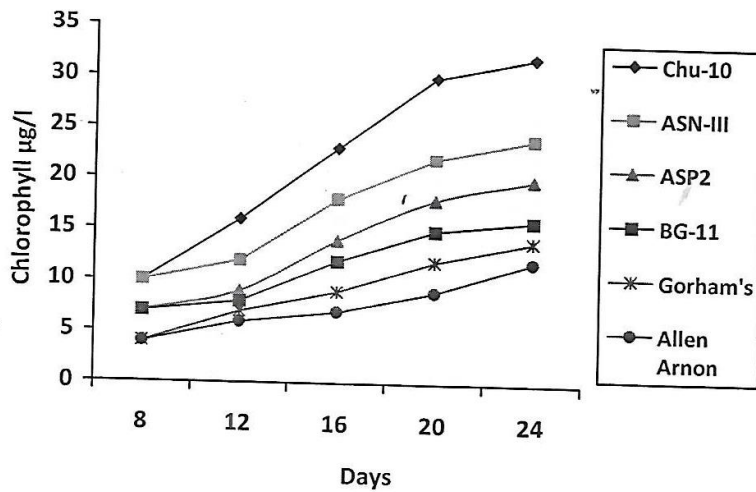
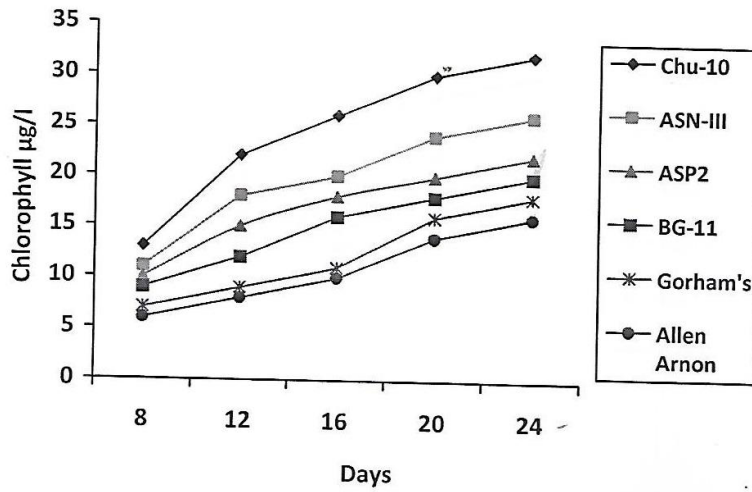
chl α /ml=13.43(A₆₆₅)

Result:-

Growth of selected strains of Blue-green algae grown in different media was measured. Chlorophyll content of each strain from each medium was determined on 8th day, 12th day, 16th day, 20th day and 24th day. It was observed that *Anabaena circinalis*, *Anabaena bornetiana* and *Anabaena macrospora* showed maximum growth in Chu-10 medium followed by ASN-III, ASP-2 medium, BG-11 medium, Gorham's medium and Allen Arnon medium.

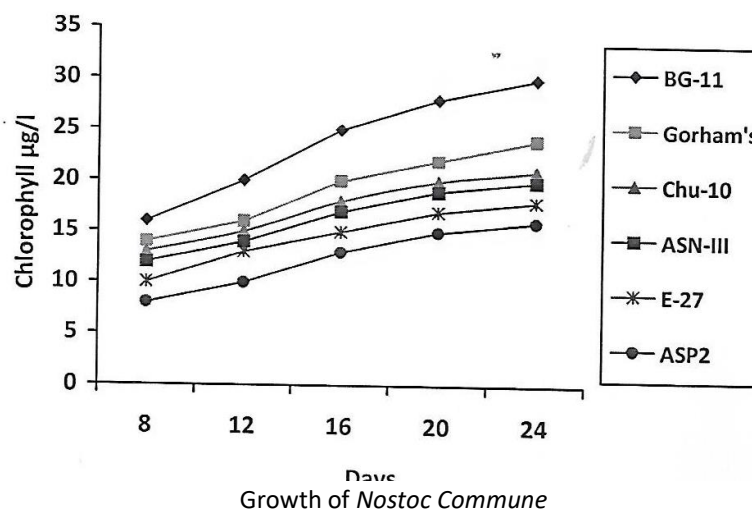
Nostoc commune showed maximum growth in BG-11 medium followed by Gorham's medium, Chu-10 medium, ASN-III medium, E-27 medium and ASP-2 medium, while *Nostoc linckia* showed maximum growth in Gorham's medium followed by Chu-10 medium, BG-11 medium, ASN-III medium, E-27 medium and ASP-2 medium.





Growth of *Anabaena Bortetiana*

Conclusion:-



Growth of *Nostoc Commune*

Different medium used for culture, enhance the growth of selected blue-green algae in which *Anabaena circinalis*, *Anabaena bornetiana* and *Anabaena macrospora* showed maximum growth in Chu-10 medium where as *Nostoc commun* and *Nostoc linckia* showed maximum growth in BG-11 medium.

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