"THE HYDROBIOLOGICAL STUDY OF FRESH WATER ALGAE".

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ABSTRACT

Mahammdpur is one of the village located in Babhulgaon taluka in Yavatmal district of Maharashtra. The physicochemical and environmental factors are important relative to the determination of algal flora. The present work has been carried out to study the effect of the physico chemical and environmental factor and occurrence of Cyanophycean algal forms from this region. The assessment between physico-chemical parameter, environmental factors and qualitative aquatic algal flora has been evaluated. The 15 algal forms have been observed during the present study. The physicochemical and environmental factors are found to be effective on the algal forms.

Keyword : - *Physicochemical factors, Cyanophyceaen form, Hydrobiological Study*.

1. INTRODUCTION

Babhulgaon is one of the taluka place in Yavatmal district of Maharashtra state with maximum temperature around 41.50 C and minimum temperature around 160 C. The few papers are available with respect to hydrobiological study about this region and the adjacent area. The present study has been done to assess the relative effect of environmental factors on the cyanophycean algal flora in one of the water streams just around 12 km away from the Babhulgaon near the village Mahmadpur. The water stream flows through the agricultural area. The both sides of the stream are lined with agricultural field.

2. MATERIAL AND METHOD

The monthly algal collections were brought to the laboratory throughout the present study from 3-4 selected spot and preserved in the 4% formalin in the bottle for further microscopic study. The material was used for temporary slide preparation mounted with glycerine. The temporary slide were observed under microscope for identification purpose. The monthly water samples were collected from the site in separate bottle for the physicochemical parameters. The physicochemical parameters were analysed following the standard method (APHA,1971; Kodarkar,1992) and depicted in the table 1.

2.1 Systematic Enumeration of Algal Forms

Division- Cyanophyta
Class-Cyanophyceace

Order- Chroococcales
Family- Chroocacaceae

Genus –*Chroococcus* Nag.

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1) *Chroococcus*. *tenax* (Kirchn) Nag

Genus-*Merismopedia* Meyen.

1) *Merismopedia minima* Beck
2) *Merismopedia punctata* Meyen
3) *Merismopedia glauca* (Ehrenb) Nag

Order- Nostocales
Family-Oscillatoriaceae

Genus- *Oscillatoria* Vaucher

1) *Oscillatoria limosa* Ag. Ek. Gomont
2) *Oscillatoria curvicep* Ag. ek. Gomont
3) *Oscillatoria princeps* Vaucher ek. Gomont

Genus-*Phormidium* Kutz

1) *Phormidium fragile* Meneghini Gomont
2) *Phormidium laminosum* Gomont
3) *Phormidium mucosum* Gardner
4) *Phormidium retzi* (Ag.) Gomont

Genus- *Lyngbya* Ag.

1) *Lyngbya perelegans* Lemm.
2) *Lyngbya amplivaginata* Van Goor

Family- Nostocaceae
Genus-*Anabaena* Bory

1) *Anabaena vaginicola* Fritsch et.Rich
2) *Anabaena circinalis* Rebenhorst ex Born. Flah.

Table -1: Physicochemical and environmental factors

Sr. No	Month	pH	Nitrate in ppm	Total hardness in ppm	Chloride in ppm	Turbidity in ppm	Rainfall	Temperature	
								Maximum	Minimum
1	July	7.5	0.38	221	29	1.1	458	41.5	22.5
2	August	7.8	0.44	219	28	1.1	392	37.5	21.2
3	September	7.8	0.44	201	22	1.7	361	36.4	20.2
4	October	8.1	0.42	197	20	1.4	182	35.2	20.2
5	November	8.2	0.39	178	18	1.9	103	30.3	19.7
6	December	8.1	0.37	158	19	1.9	15	30.1	15.2

3. RESULT AND DISCUSSION

The environmental factor are important for the determination of population of algal forms in water body (Ganpati, 1960).The abundance in chlorophycean flora has been reported in summer season (Whiteford and Schumcher, 1963). The temperature has important impact on algal growth (Nazneen,1980). The high nutrient in aquatic habitat has also favourable effect relative to the present of phytoplanktons (Fergusan and Harper,1982). The 15 Cyanophycean algal forms were observed in the present study.

The more chloride content is also favourable factor to more growth of algal forms(Verma and Shukla, 1979,Kamble,2015).The present investigation represented that the moderate range, high chloride content, and high pH and alkalinity collectively favoured the luxuriant growth of algal flora and phytoplankton.(Kamble2015).The high temperature favoured the more desmid population(Venkteshwarlu, 1983). The turbidity has considerable effect on algal growth (Barhate and Kamble 2007).The present study revealed the agreement with previous study. The pH ranged between 5-8.5 has been reported as favourable for plankton growth (Umavathi et al.,2007)).. The important source of nitrate in water body may be attributed to the agricultural use of fertilizers in adjacent agricultural land. .It has been reported that there is correlation between physicochemical parameters and phytoplankton density (Elayaraj and Selvaraju,2014). In the present study, eutrophication causing dense growth of Cyanophycean algal flora and algal bloom was observed during study. The present observation shows the agreement with previous study.

Fig -1: Sample collection spot

4. CONCLUSION

The various physicochemical and environmental factors such as high pH, nitrate, chloride, turbidity, hardness are found to be favourable condition to the growth of cyanophycean algal form. The more nutrient concentration in aquatic habitat favoured luxuriant growth of algal flora in present study. The genus Oscillatoria, Phormidium and Merismopedia were abundance in population.

5. REFERENCES

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