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COCCOIDS OF WASTE WATER IN BEED CITY

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ABSTRACT In Chroccaceae family variation among the members is so great. Cells mostly spherical ,ellipsoidal ,cylindrical, seldom, spindle shaped ,unicellular or forming colonies. Komarek and Anagnostidis (1986, 1998) have made good efforts to segregate coccoid members of Cyanoprokaryotes (Chroococcales) on the basis of their morphological features .To study the Chroococcales in waste water in Beed city. Some Coccoid members are recorded in four sites such as municipal waste water, beverages industry, waste water, Dairy waste water and Cement industry waste water during the period of June 2016 to May 2018. Coccoides were represented by the genus *Microcystis, Chroococcus, Gloeothace, Aphanocapsa, Aphanothece ,Synechoccus, Rhabdoderma and Merismopedia.* A total 23 algal species were recorded belongs to 8 genera.

KEYWORDS : Biodiversity, Cyanoprokaryote and Coccoid.

Algae are valuable indicators of ecosystem because they respond quickly both in species composition and densities to a wide range of water conditions due to change in chemistry . Palmer (1959) studied algae in water pollution and made composite rating of algae tolerating organic pollution. Algae are the most important autotrophic element of fresh as well as waste water ecosystem. The present study deals with biodiversity of coccoid members of algae of cyanobacteria was carried out in four sites of beed city. Extensive review of literature reveals that except few reports on distribution of fresh water Chrococcaceae (Desikachary T.V. 1959, Ashtekar P.V.& Kamat N.D 1980 , Vaidya B.S. and Thaker J.U 1989, Mahajan S.R.and Nandan S.N. 2004, Chaudhari A.M.,S.N. Nandan And S.R.Mahajan 2009,Nandan S .N and Pathan A.A. 2009 Patil Sandhya S. 2009, Talekar S.M. and Jadhav M.2013 ,Sunita V.Jawale and Milind J.Jadhav 2017) rare attention has paid towords coccoid members of cyanobacteria on polluted water hence to decides work on study of coccoid members of waste warer in Beed city.

MATERIALS AND METHODS

In Beed city many industries like Refinery, Oil, Cold drink, Cement, Bakery, Dairy are present. In such industries 4 sites like municipal waste water, beverages industry, waste water, Dairy waste water and Cement industry waste water were selected for the study of coccoid members. Algal samples were collected at monthly intervals from selected sites during June 2016 to May 2018. Acid washed collection bottles were used for the collection of algal samples , collected samples were preserved in 4% formalin. The taxonomic description and identification of algal taxa was performed by referring to the standard literature on algae Desikacharya 1959 and relevant research papers.

RESULT AND DISCUSSION

In present investigation 23 species of Coccoid recorded belongs to 8 genera like *Microcystis-3, Chroococcus-6, Gloeothece-1, Aphanocapsa-6,Aphanothece-2, Synechococcus-1, Rhabdoderma-1 and Merismopedia-3.* Out of 8 genera *Chroococcus and Ahanocapsa* are dominant as compared to other genera in four sites. Maximum Coccoids found in Muncipal waste water followed by Dairy waste water, beverages industry waste water and cement industry waste water. In Municipal waste water *Croococcus, Aphanocapsa ,Microcystis* and *Merismopedia* are dominant as compared to other coccoid. In coldrink industry waste water *Croococcus* and *Microcystis* are dominant as compared to other species Similar kind of observation were made by Nandan S.N., Pathan A.A. and Pathan S.S.(2009) study of certain coccoid members of Cyanophyceae of Malangaon Dam of Dhule District. In beverages industry waste water *Aphanocapsa, Croococcus , Aphanothece* are dominant as compared to *Gloeothece ,Synecoccus ,Rhabdoderma* and *Merismopedia.* In Cement industry waste water *Crococcus* and *Aphanocapa* are dominant as compared to *Aphanothece ,Rhabdoderma* and *Merismopedia*. Similar kind of observation were made by earlier worker Vaidya B.S. and Thaker J.U (1989) described 50 coccoid forms of Cyanophyta recorded for the first time from Surat district of Gujarat, Mahajan S.R.& Nandan S.N. (2004) Blue green algae of Hartala lake of Jalgaon , Maharashtra . Chaudhari A.M.,S.N. Nandan And S.R.Mahajan (2009) Biodiversity of chroococcales in soils of north Maharashtra region.

Talekar S.M. & Jadhav M.(2013) Chrococcales of Belgaon reservoir of Ashti Taluka in Beed District of Maharashtra**.** And Nandan S .N & Pathan A.A. (2009) Patil Sandhya S. (2009),,Sunita V.Jawale and Milind J.Jadhav (2017) .

Table.1: Coccoid recorded in waste water of Beed city

Sr.No.	Nameof algal taxa	M.W.	B.I.W.	C.I.W.	D.I.W.
1)	*Microcystis aeruginosa* Kutezing	+	-	-	+
2)	*Microcstis proctocystis* Crag.	+	-	-	+
3)	*Microcystis robusta*	+	-	-	+
4)	*Croococcus minor* Kutezing	+	-	+	+
5)	*Croococcus macrociccus* Kutz. Rabenh.	+	+	-	+
6)	*Croococcus minutes* Kutezing.	+	-	+	-
7)	*Chroococcus montanu* Hansgirg	-	-	-	+
8)	*Chroococcus varius* A.br	+	-	+	+
9)	*Chroococcus pallidus* Nag	-	+	+	+
10)	*Gloeothece rupestris* (Lyngb)	+	+	-	+
11)	*Aphanocapsa biformis* A.br.	-	+	+	-
12)	*Aphanocapsabanaresensis*Bhar adwaj	+	-	-	-
13)	*Aphanocapsa elachistaw.*et.G.s West v.*conferta*	+	-	-	+
14)	*Aphanocapsa koordersi* Storm	+	+	-	-
15)	*Aphanocapsa pallid* (Kutz.) Rabenh	-	+	+	-
16)	*Aphanocapsa virescens* (Has)	+	+	-	-
17)	*Aphanothece microscopica* Naegeli	+	+	-	-
18)	*Aphanothece saxicola* Nageli	-	+	+	-
19)	*Synechococcus major* Schroler	+	+	-	+
20)	*Rhabdoderma irregularelineare* Schmidle and Lauterborn	+	+	+	-
21)	*Merismopedia glauca* Ehr.	+	-	-	+
22)	*Merismopedia punctata*	+	+	-	-
23)	*Merismopedia tenussima* Lemn.	+	-	+	+

REFERANCES:

1. Asstekar P.V.(1980).Studies on fresh water algae of Aurangabad district. Ph.D. Thesis, Marathwada University, Aurangabad.
2. Chaudhari A.M.,S.N. Nandan And S.R.Mahajan (2009). Biodiversity of chroococcales in soils of north Maharashtra region. Biodiversity , Sustainable , Development and Welfare.PP 354-365.
3. Desikacharya T.V.(1959) : Cyanophyata ICAR, New Delhi.
4. Mahajan S.R. and Nandan S.N.(2004): Blue green algae of Hartala lake of Jalgaon , Maharashtra. J.Aqua . Biol. 19(1): 11-12
5. Nandan S.N., Pathan A. and Pathan S.S.(2009). Study of certain coccoid members of Cyanophyceae of Malangaon Dam of Dhule District. Biodiversity , Sustainable ,

Development and Welfare.PP 112-11.
6. Patil Sandhya S. (2009). Biodiversity study of algal flora of Cyanophyceae from river Tapti in Dhule District ., Biodiversity sustainable development And human welfare .2009 (60-63). S.N.Nandan ,Y.S. More And U.G. Gavit (2009):Biodiversity study of Cyanophyceae from river of Navapur Taluka (Maharashtra). Biodiversity ,Sustainable development and Human welfare pp.196-216.
7. Sunita V.Jawale and Milind J.Jadhav (2017):Diversity of cyanobacteria over water reservoir. National conference on Advances in life science and human welfare pp 128-129.
8. Talekar S.M. and Jadhav (2014): Chrococcales of Belgaon reservoir of Ashti Taluka in Beed District of Maharashtra. Biosci .Disc., 5(1):97-98.
9. Vaidya B.S. and Thaker J.U.(1989): Taxanomic account of coccoid Cyanophyta of Surat district of Gujarat , Indian bot. Reptr. 8 (20) :97-106