



DIVERSITY OF MACROPHYTES IN SOME LENTIC WATERBODIES OF GONDIA, DISTT. GONDIA.

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ABSTRACT:

In a natural ecosystem macrophytes have been used to remove both toxic and non-toxic elements in the sediments and water. The present study was carried out to study the diversity of aquatic communities with reference to macrophytes of Chirebandi pond (C.P.), Devtaki pond(D.P.) and Railway station pond(R.P.) during the period from June 2005 to May 2007. These ponds are one of the large sources of flora and fauna including molluscans and other animals, which are very much economically important. During the present study total 24 species belonging to four groups such as free floating, submerged, marginal and emergent macrophytes from the littoral and sublittoral zones of three ponds.

Key words: - Diversity, Macrophytes, Fresh water bodies.

INTRODUCTION:

Aquatic macrophytes are the visible forms of aquatic vegetation which serves as a good source of food to mankind and animals that is a best result for aquatic wild life conservation practices. The trophic nature is mainly influenced by the variety of communities and indicator species occurring at the source. Moreover, metabolic activities of macrophytic communities accelerate the metabolic and the physico-chemical conditions of aquatic ecosystem.

The macrophytes stimulate the growth of phytoplankton and help in the recycling of organic matter. The macrophytes also provide suitable breeding and sheltering place for macroinvertebrates and fishes. (Meshram, 2003).

Macrophytes in fresh water play major ecological role and help in regulation and stabilization of trophic state and mineral cycling in an aquatic ecosystem. They serve as the bioindicators for the possible degree of damage in aquatic

ecosystem. A sufficient literature has been generated on macrophytes of various water bodies, Ghavzan et al.,(2006), Kumar and Pandit(2005) and Devi(2007). The present investigations was undertaken to study the diversity of Macrophytes from three water bodies namely Chirebandi pond(C.P.), Devtaki pond(D.P) and Railway station pond(R.P.).

MATERIAL & METHODS

Macrophytes were collected at monthly intervals during the period of investigation from shallow littoral zone by hand picking method. Specimens were washed thoroughly with water, excess water soaked with filter paper, Specimens were kept in polythene bags and brought to the laboratory in ice box and identified up to species with the help of standard literature from Edmondson, (1959); APHA, (1975); Pennack, (1978); Tonapi, (1980); Fasset, (2000).

RESULT AND DISCUSSION

The study of macrophytic diversity of three lakes presented in table 1. In the present study, 24 species from four groups were recorded from the three ponds during 2005-2007.

Free floating species were abundant in Devtaki pond and Railway Station pond than Chirebandi pond. Submerged and Emergent species were dominant in Chirebandi pond as compared to Devtaki pond and Railway Station pond. Marginal species showed their dominance in Devtaki pond and Railway Station pond but less in Chirebandi pond.

In the present study, among the free floating weeds, *Eichhornia crassipes*, *Pistia* spp., *Lemna* minor were recorded from Devtaki pond and but dense in Railway Station pond are considered as pollution tolerant species. *Azolla* spp. was recorded only from Chirebandi pond and considered as pollution free species, Narayana and Somashekhar (2002).

Among the submerged weeds, *Vallisneria* spp., *Ceratophyllum* spp. *Najas* minor, *Hydrilla* spp., *Utricularia* spp., *Chara vulgaris* were recorded from Chirebandi pond and not in Devtaki pond and Railway Station pond. *Vallisneria* spp. And *Ceratophyllum* spp., *Chara vulgaris* are the species that preferably grow at unpolluted pond. Among the marginal weeds, *Cyperus* spp., *Marsilea quadrifolia*, *Marsilea minuta*, *Typha* spp. and *Ipomoea aquatica* in Devtaki and Railway station pond. However, Chirebandi pond showed more dominance of *Jussiaea* spp., *Ludwigia* spp. And *Lythrum* spp. while very scarce distribution of *Typha* and *Ipomoea aquatica*. The emergent weeds like *Nymphoides* spp., *Nelumbo* spp., and *Nymphaea* spp. were recorded only from Chirebandi pond.

The Railway Station pond showed the thick mat of *Eichhorniacrassipes*, *Pistia* spp., and *Lemna* minor while scarce in Devtaki pond during winter and summer season which is the result of high nutrient load in the ponds. The

growth and frequency of distribution of different aquatic macrophytes was correlated with an increase in phosphate and nitrogen content of water bodies by Kiran et. al. (2006). It is probably that these nutrients stimulate the rapid organic production by aquatic macrophytes. (Sarkar et.al. 2002).

In the present study, Chirebandi pond showed the maximum diversity in macrophytes while Devtaki and Railway Station pond harbor rich pollution indicator species along with higher density of phytoplankton. This was also observed by Narayana and Somashekhar (2002), Devi et.al.(2007)

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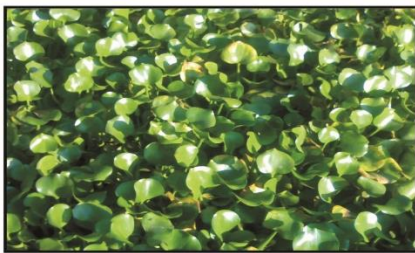
Table no. 1 :Macrophytes Diversity in Lentic ecosystem during 2005-2007.

S.N.	Macrophytes	Family	C.P	D.P.	R.P
A	Free Floating				
1	Eichhornia Spp.		-	+	+
2	Pistia Spp.	Araceae	-	+	+
3	Lemna minor	Lemnaceae	-	+	+
4	Wolffia Spp.	Lemnaceae	-	+	+
5	Salvinia Spp.	Salviniaceae	-	+	+
6	Azolla Spp.	Salviniaceae	+	-	-
B	Submerged				
7	Hydrilla Spp.	Hydrocharitaceae	+	-	-
8	Ceratophyllum Spp.	Hydrocharitaceae	+	-	-
9	Vallisneria Spp.	Hydrocharitaceae	+	-	-
10	Potamogeton Spp.	Najadaceae	+	+	+
11	Najas minor	Najadaceae	+	-	-
12	Chara vulgaris		+	-	-
C	Marginal				
13	Marsileaquadrifolia	Marsileaceae	-	+	+
14	Marsileaminuta	Marsileaceae	-	+	+
15	Ipomoea aquatica	Convolvulaceae	+	+	+
16	Typha Spp.	Typhaceae	+	+	+
17	Cyperus Spp.	Cyperaceae	-	+	+
20	Jussiaea Spp.	Onagraceae	+	-	-
21	Ludwigia Spp.	Onagraceae	+	-	-

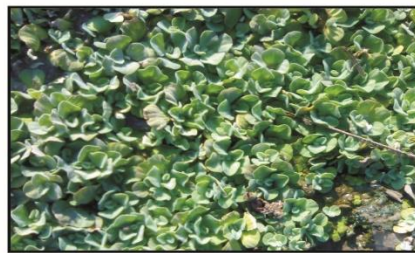
22	Lathrum Spp.	Lythraceae	+	-	-
D	Emergent				
23	Nymphoides Spp.	Nymphaeaceae	+	-	-
24	Nelumbo Spp.	Nymphaeaceae	+	-	-
25	Nymphaeastellata	Nymphaeaceae	+	-	-
26	Nymphaeanauchali	Nymphaeaceae	+	-	-

(C.P.-Chirebandi Pond, D.P.- Devtaki Pond, R.P.- Railway Station Pond)

Macrophytes of Lentic Ecosystems Under Study



Eichhornia Spp.



Pistia Spp.



Lemna minor



Nelumbo Spp.



Marselia Spp.



Cyperus Spp.



Vallisneria Spp.



Ipomoea aquatica