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Study on aquatic weeds in lotic (R.Subernarekha) and lentic (Dimna lake) habitat in Jamshedpur

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Abstract : The present study elucidate the status of aquatic weeds in the R.Subernarekha (lotic) and Dimna lake (lentic habitat). The waterbody of Jamshedpur , an industrial Steel City , has been left unchecked sas a result of this unwanted and undesirable vegetation known as "aquatic weeds " develop.
Beside, regular problems created by aquatic weeds like chocking the waterbodies, foul odour, making water unfit for drinking ,it causes to be habitat for certain protozoan diseases and bacterial diseases as well as for mosquitoes ,flies and their larvae.

Keywords: Aquatic weeds ,lotic , lentic ,Jamshedpur, Industrial Steel City.

INTRODUCTION

"Aquatic weeds" are defined as those unwanted and undesirable vegetation which reproduce and grow where they are not wanted. Excessive growth of aquatic weeds inhibit the free movement of fish and other aquatic animals. They cause foul odour and choke the whole waterbody and makes the water unfit for the drinking purposes .Aquatic weeds covers the whole surface of water and prevents sun rays to penetrate deeper inside the bottom of the water. Dead and decomposed aquatic weeds decay on bottom of the water .This takes place generation after generation . If they are left unchecked , they may choke the waterbodies posing a serious menance to various aquatic activities such as pisciculture , navigation ,water supply conduct, besides becoming hazardous to swimming , rowing and water sports.

Certain weeds release into the soil inhibitors or poisonous substances which are harmful to plants, human beings and live stocks. They increase the expenditure on labour and equipment render harvesting difficult and reduce the quality and market ability of agriculture produce .They block the drainage and impede the flow of water in channels and their growth in the rivers renders navigators very difficult . The dense growth of the weeds in water pollutes the water because they deoxidized the water and kill the fish.

Infact ,they are the sources of many diseases as we can say this by the research which have been carried out in R.Subernarekha that this year , a large mound of *eicchornia crasspes* have grown in this river as this weeds deoxidized the river which promote habitat for mosquitoes and their larvae . This year the mosquitoes called *aedes ellipticus* occurs in large amount for this it cause diseases named "chikunguniya" . This disastrous disease mainly affect the whole adjoining areas of the river. This research has been carried out R.Subernarekha (lotic) and Dimna lake (lentic); Jamshedpur to investigate about the aquatic weeds in the above said habitat . This research has been carried out during March 2011 to Feb 2012 for 12 months.

MATERIALAND METHODS

The above study has carried out in 2 aquatic habitats :
R.Subernarekha (lotic) and Dimna lake (lentic).

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Samples were collected from selected site on R.Subernarekha from Jaiprakash Setu , Mango, Jamshedpur and from Dimna lake, Jamshedpur. Sample collection was carried out along the river length at along the river length at assigned site . The collection in Dimna was carried out randomly with the help of plankton nets and metallic bars .During collection, help from local fisherman were also soughted out.

The collected sample were then sorted out and preserved for further study. Preservation of the samples were done in 5% Formalin and kept in clean containers. The aquatic weeds were then identified using standard literature.

RESULT AND DISCUSSION

During the study, a total of 17 species of aquatic weeds belonging to 13 families are recorded from the R..Subernarekha (lotic) and Dimna lake was recorded .Biswas and Calder have recorded 230 species of common (freshwater) aquatic weeds belonging to 60 family from different freshwater habitats of India and Burma .

The aquatic weeds from an integral part of the producer group of the aquatic food system. The aquatic weeds form a shelter place for fishes and various aquatic insects and their larvaes. However, their excessive growth causes various problems like chocking of the water, damage to fish culture, adding foul odour to the water making it unfit for drinking purposes. Excessive growth of aquatic weeds covers the whole surface of water and prevents sun rays to penetrates deeper inside the bottom of the water. Dead and decompose on the bottom of the water. This takes place generation after generation and if left unchecked the bottom sediments increased as a result of which water level of waterbody decreases leading to shallowing of the waterbody.

During the research period, it was found that they are also the source of many diseases especially the mosquitoes borne diseases. A large number of incidents of diseases named “chikunguniya” was seen in the adjoining areas of the river. The main cause of this disease was found due to growth of mosquitoes *aedes elliptus* which carried and spreaded the disease. The mosquitoes developed in huge amount in the unwanted aquatic weeds that have grown and left unchecked in the lentic and lotic habitats.

Fam., Genera & species	Type of aquatic weeds	Lentic water bodies	lotic bodies
I Family : Nymphaceacae			
1. *Nymphaea lotus* Linn.	E	+	-
2. *N. Stella wild*	E	+	-
3.*Nelumbo nucifera* Gaerten	E	+	-
II Family : Convolvulaceae			
4. *Ipomea aquatic* fors.k.	M	+	-
III Family : Lentibulariaceae			
5. *Utricularia stellaris* Linn.	S	+	-
IV Family : Hydrchlritaceae			
6. *Hydrilla verticilliata* casp	S	+	+
7. *Vallisneria spirellis* linn.	S	+	+
V Family : Pontederiaceae			
8. *Eichhornia specosa* kunth	F	+	+
VI Family : Typhaceae			
9. *Typha elephantia* Roxb.	M	+	-
VII Family : Araceae			
10. *Pistia stratiotes* Linn.	F	+	-
VIII Family : Lemnaceae			
11. *Lemna spp.*	F	+	+

IX	**Family : Chorococeaceae**			
	12. *Microcystis spp.*	F	+	-
X	**Family : Nostoceae**			
	13. *Anabaena spp.*	F	+	+
	14. *Nostoc spp.*	F	+	+
XI	**Family : Volvocaceae**			
	15. *Volvox aurena* Ehrenberg	F	+	+
XII	**Family : Zygnemaceae**			
	16. *Spirogyra spp*	F	+	+
XIII	**Family : Characeae**			
	17. *Chara spp*	S	+	-

+ = Present , - = Absent , E = Emergent, M = Marginal, S = Sub-marginal, F = Floating.

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