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Impact of pH, Temperture, and Zinc on Lymeae 's Species

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Abstract

Ponds are classified into two forms according to their nature. They are divided into seasonal and perinniel water bodies.They are showed rich fauna of Lymneae species vizLy.lutiola. Ly.auricularia.Ly.accuminata.Katrataland Gangasagar pondwere selected for our study.pH. Temperature of water ,Zinc trace elements showed some relationship with Lymneae species.

Keywords: Atomica,bsorbtion spectrophotometer, Seasonal, Perennial Pond.

Introduction

Lymneae lutiola is not very particular about its habitat.It is often found in temporary water bodies, which dry up in summer and its tides over the unfavorable condition by burying itself in the mud.It is also found in water that has a salinity of 0.3 mg/l. {Subbarao et al.1985). This snail is intermediate host of some parasites of cattle,dog, pig.Lymneae accuminata is a species of fresh water snail aquatic gastropod mollusc is the family of Lymnideae.Guthe et al(1977) found Ly. stagnalis infected with digenetic trematodes were more vulnerable than infected snails to toxicity from Zinc at 24 c and 75ppm.Harshwordhen et al (2007) studied the effect of aquatic snail reproduction by various abiotic factors significantly reduced the reproduction of Lymneae accuminata (M.Coeverdassier et al studied the bioconcentrations and the indivisual effect on life history traits of Ly. Stagnalis and Ly. Palustris exposed to increasing Cd. concentration for 4 weeks in controlled condition.)Fresh water snails were foundin seasonal water bodies were dried in summer season .According to condition of weather waterbodies divided into 2 forms Perennial and Seasonal. Present study based on two types of pond seasonal is Katratal and Perennial pond is Gangasagartal.Both pond shows snail fauna viz Ly. lutiola.Ly accuminata.Ly auricularia.Metals are released from natural sources. The impact of metals viz. Zn.Cu.Pb.Ni. on the environment is an increasing problem worldwide. The impact of metals on aquatic ecosystem is still consideredto be a major threat to organisms health due to their potential bioaccumulation and toxicity to many organisms. Although metals are usually considered as pollutants. It is important to recognize that they are natural substances Zinc. For example is an essential component of at least 150 enzymes. Cu is essential for the normal function of cytochrome oxidase, Iron is part of the hemoglobin in R.B.C.Zinc sensitivity of freshwater snails Ly. lutiola in relation to seasonal variation to temperature (Khangroot,Ray 1985)

Meterials and Methods

Collection of snails:- During a priod extending from September 2000-2001 February , snails were randomly collected from both ponds of Jabalpur area . Katratal were seasonal pond and /Gangasagar pond were perennial in nature. Katratal dried in summer and winter season. Only during rainy season Katratal filled with water while Gangasagar filled with water whole year. The snails were collect in a plastic bags with pond water. Temperature and pH were estimated in field condition during the study.

Identification of snails

The collected snails were washed thoroughly and cleaned from mud debris and citrates . Snails were classified according to shell morphology.Identification of snails done by hand book of fresh water molluskcen key.(Subbarao N.V. 1989). Water parameters viz temperature recorded by water thermometer. pH observed by pH meter in laboratory.Zinc measured by Absorption Spectrophotometer .

Result and Discussion

Lymneaeauricularia showed maximum number at 6.5 pH, temperature was 24 c, and Zinc were observed 11.54 U/L in seasonal pond Katratal,Ly.lutiola showed maximum number in February 2001 at 6.8pH. Were temperature 23rd and Zinc was 14.06 U/L.Lym.accuminata showed

maximum number at 7.1pH. Temperature was 20 c and Zinc was 15.o3 U/L in the month of October2001 in seasonal katratal pond water.

In Gangasagar pond Lymneae auricularia,Ly. lutiola. Ly.accuminata. Showed maximum fauna in September 2001 at 8.3pH,17c temperature,11.96u/l. Zinc.

Conclusion

Below 20'c temperature is suitable for rich fauna of Lymneaeauricularia,Ly. lutiola. Ly.accuminata.in perennial pond water and also showed high pH and low temperature responsible maximum fauna of three species .Zinc ranges from 11 to 15 u/l is suitable for rich species of Lymneae auricularia, Ly. lutiola. Ly.accuminata in perennial and seasonal water body. In seasonal pond water low pH and above 20 c temp is suitable for Lymneae species.

Gangasagar Pond Water Study

snails	month	Number of snails	Tem.	pH	Zinc
Ly.auricularia	Sept.2001	200	17	8.3	11.96U/L
Ly. accuminata	Sept.2001	80	17	8.3	11.96U/L
Ly .lutiola	Sept.2001	120	17	8.3	11.96 U/L

Katratal Pond Water Study

Ly.auricularia	Sept 2001	196	24	6.5	11.54U/L
Ly. accuminata	October 2001	177	20	7.1	15.03U/L
Ly .lutiola	February 2001	96	23	6.8	14.06U/L

References

1. Guthe D.J. et. Zinc stress caused by parasitic infection of snails Hydro biologia 55,225-229.
2. HOPKINS.S.P.1993insitu biological monitoring of pollution in terrestrial and aquatic ecosystem .In hand book of ecotoxicology.vol 1 (p.calow.ed)pp.
3. M. HarshwordhenJigvasu. Dinesh kumarsingh andVinaykumarsingh .Dept. of zoology Gorakhpur University
4. M.Coevrdassier.A.de van f leury in Bulletin of Environmental contamination an (2004)
5. Khangrootand Ray I.T.R.C .Zinc sensitivity of a freshwater snails Lymneaelutiola in relation to seasonal variation to temperature.(Bulletin of environmental concentration and toxicity July 1997, vol. 39,Issue-1,pp 45-49)
6. Subbarao N.V.(1989) Hand book of fresh water molluscs of India. Zoological Survey OfIndia.Calcutta.