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EFFECT OF DETERGENT ON OXYGEN CONSUMPTION ON THE FRESHWATER BIVALVE *LAMELLIDENS MARGINALIS*.

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ABSTRACT

In the present investigation the effect of detergent toxicity on the oxygen consumption of *Lamellidens marginalis* at 24, 48, 72, and 96 hours during summer, monsoon & winter season respectively. The freshwater mollusca *L. marginalis* from four different stations of Bindusara river BEED were selected for the study. This four different stations were Khajbag, Monda Road Bridge, Barshi Road Bridge and Pali respectively.

The rate of respiration was measured during experiment period in terms of mg liter/hr on 12, 24, 48, and 72 hours respectively. The rate of respiration from Khajbag station group was significantly decreased and later on it was gradually increased from Bridge station group and Pali station group respectively.

INTRODUCTION

Oxygen consumption is a measured of metabolic state of the animals. Hence it is considered as vital parameters and indicate the physiological and metabolic alteration in the animals. It is known that the respiratory rate alter under the influence of the several biotic and abiotic factors. The relationship between respiratory activity of animals and pollutions have been reviewed by some workers [1,2] (Roberts 1972, Satyavely Reedy 1962)The man-made activities like mining, industrial discharge sewage sludge, Fertilizers and pesticide applications have been the measured culprits for various ecosystem.

Detergent have much effect during the past few years. These compounds have caused much concern owing to their tendency even in small amount to cause from river. But there is considerable experimental evidence that low concentrations of synthetic detergent are toxic to fresh water bivalve, fish. Thus investigator have shown that concentration of only 5ppm of some ionic and non-ionic synthetic detergent can killed certain bivalve and fish in 5 – 100 hours through certain species to some extent become acclimatized have compared natural detergent with synthetic detergent as regards their toxicity towards bivalve *Lamellidens marginalis* and some fishes their results reproduce.

MATERIAL AND METHODS

The adult Bivalves of shell length 60-70 mm were chosen for the laboratory experiment after collection of these Bivalves, they were immediately brought to the lab. The shells were clean with fresh water and brushing to remove fouling biomass and mud. The rate of respiration of *L. marginalis* from Khajbag station, Monda Road Bridge, Barshi Naka Bridge and Pali station exposed to detergent concentration (5ppm) on 12, 24, 48, 72 hours in different seasons under lab condition differed significantly than the respective bivalves from the Khajbag station. The rate of oxygen consumption was estimated according to Trivedi and Goals (1987) and expressed as mg/gm/wt/liter/hour. All the value were subjected statically analysis for confirmation using student T test (Dowdeswell, 1957)

The experiments were carried out on freshly collected animal in April-May, August-September and December - January of the season Summer, Monsoon and Winter respectively of the year 2016-17. The statically differences and percentage differences were also calculated among various groups.

RESULTS AND DISCUSSION

The effect of detergent on the oxygen consumption of *L. marginalis* during summer, monsoon and winter are represented in table no. 1. In the present investigation the rate of oxygen consumption at four stations but three stations that is Khajbag station, Barshi Naka Bridge and Pal station are exposed to detergent concentration 5ppm but the Monda Road Bridge station was very less polluted.

The three stations the rate of oxygen consumption of *L. marginalis* are compared with Monda Road Bridge station. In the present investigation the rate of oxygen consumption *L. marginalis* was observed in three different seasons shows in tables.

SEASON	hours	Station			
		Monda Road	Khajbag	Barshinaka	Pal
Summer	12	0.1436 + 0.0021	0.1826 0.0041	0.2824 0.0051	0.3219 0.0031
	24	0.1340	0.1928	0.2730	0.3119
	48	0.1300	0.2086	0.2431	0.3212
	72	0.1432	0.2096	0.2531	0.3114
	Monsoon	12	0.1410	0.1215	0.2124
24	0.1422	0.1280	0.2210	0.3145	
48	0.1511	0.1272	0.2251	0.3410	
72	0.1412	0.1332	0.2510	0.3515	
Winter	12	0.1012	0.1532	0.2130	0.2712
	24	0.1320	0.1618	0.2083	0.2617
	48	0.1112	0.1701	0.2210	0.2712
	72	0.1214	0.1530	0.1940	0.2785

All value are represented in mg/100mg.

CONCLUSION

From the above discussion the rate of respiration of *L. marginalis* exposed to detergent concentration at 5ppm was measured during study period in terms of mg/liter/hour on 12, 24, 48, 72 hours respectively. The rate of respiration from Monda Road Group high during summer and winter monsoon. The rate of respiration from Khajbag station Group was significantly decreased from Barshi Naka Bridge station and Pal station Group respectively.

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